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12 RECIPES YOU CAN BREW

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## HOMEBREW HACKS

13TH ANNUAL GADGETS ISSUE

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SECRETS

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IN BERLIN

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COMPETITION

VOL 42 • N°1

JANUARY/FEBRUARY 2019



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Published by the American Homebrewers Association, a division of the Brewers Association. The purpose of the Brewers Association is to promote and protect small and independent American brewers, their craft beers, and the community of brewing enthusiasts. The Brewers Association is a not-for-profit trade Association under Section 501(c) (6) of the Internal Revenue Code. Offices are located at 1327 Spruce Street, Boulder, CO 80302 USA. Membership is open to everyone. *Zymurgy* (ISSN 0196-5921, USPS 018-212) is the bi-monthly journal of the American Homebrewers Association and is published six times per year. Periodicals Postage Paid at Boulder, CO and additional mailing offices. Canada Post Agreement Number 41197537. Annual memberships are \$43 U.S., and \$52 International and include a \$35 subscription to *Zymurgy*.

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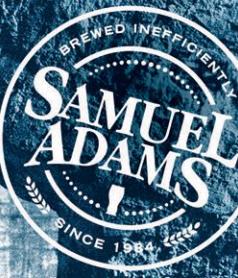
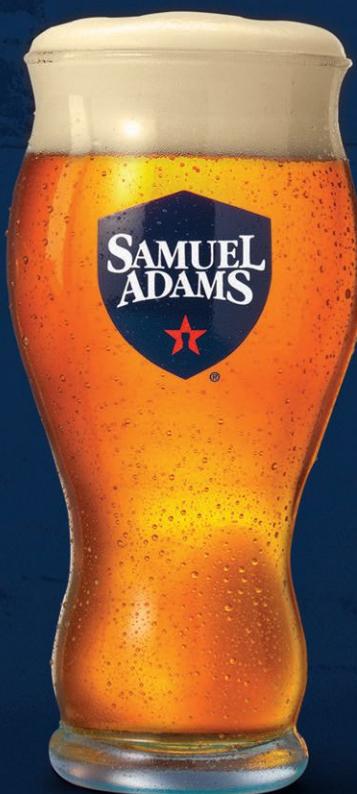
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# Slow Lager.

At Samuel Adams, we are inspired by German brewing tradition. Over 600 years ago, beer was aged in caves like the one shown here. In these natural coolers, beer was chilled over time to bring out the best flavor and aroma.

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# Laziness Plus Smarts

I am lazy. Most of us are, but we rarely admit it publicly for fear of being thought apathetic. There is, however, a clear distinction between laziness and apathy. The apathetic don't care. The lazy care, but we prefer to minimize the energy spent in pursuit of a desired result. That leaves us more energy to accomplish other things.

Virtually every modern convenience we enjoy has come about thanks to human laziness. Elevators, toasters, bicycles, motorized grain mills, boxed meals that appear on your doorstep—all help us accomplish tasks with less effort than they would otherwise require.

The most intelligent people I know are remarkably lazy, which is fortunate because “laziness plus smarts equals efficiency.” Those are the words of a professional I recently met, who was explaining how he and his colleagues managed to accomplish so much while apparently doing so little.

If that be the case, then *Zymurgy*'s annual Gadgets issue is a testament to laziness. The gadget ideas we receive from readers show that homebrewers are every bit as smart as they are lazy. That doesn't mean building some of these gadgets requires no effort—far from it. But it does mean that once your gadget is complete, you'll have saved yourself a bit of time and effort in the long run—time and effort that can better be spent enjoying your homebrew.

## AN EMBARRASSMENT OF RICHES

The 37th annual Great American Beer Festival® (GABF) was held at the Colorado Convention Center in Denver September 20 to 22, 2018. Along with the other members of the American Homebrewers Association staff, I worked the AHA booth for three days and four sessions and enjoyed meeting many *Zymurgy* readers.

If you've not attended GABF before, it's worth knowing that the AHA booth is strategically positioned right next to the GABF Pro-Am booth (for more on the Pro-Am Competition, see Kristen Kuchar's article on page 64 of this issue). Such an arrangement is convenient for popping over and sampling award-winning beers, but it also offers a great way to introduce soon-to-be homebrewers to our great hobby.

“You know, if you like great beer, you should go check out the Pro-Am booth right over there,” I'll offer to a curious onlooker as I point in John Moorhead's general direction. “Those beers all started in someone's kitchen.”

They'll often head over to the Pro-Am booth and take a few sips. And very frequently, they'll come back later in the session to say thanks for the tip. With 800 breweries pouring 4,000 beers, there's no shortage of things to try at GABF, but the Pro-Am booth has some of the best. Those scaled-up homebrews, already medal winners, usually win over a few hearts as well.

## AMERICAN CRAFT BEER ABROAD

I recently traveled to Nuremberg, Germany, with several colleagues from the Brewers Association to represent American craft beer at BrauBeviale, one of the world's largest trade shows for the beverage industry. We wanted to show an international audience what American beer is like these days. Some still think “American beer” means industrial lager, even with 7,000+ US breweries offering more choice than ever.

The selection of beers at our booth was considerably smaller than what you'd find at GABF—about 45 individual brands—but still the widest variety at the show by far.



From easy-drinking German-style Pils and classic American pale ale to wet-hopped double IPA and barrel-aged saison, we had something for every palate.

Witnessing the facial expressions of those tasting full-flavored beer for the first time remains as entertaining and inspiring as ever. As someone who has been immersed in homebrew and craft beer culture for some time, it's easy to forget that everyone has a first experience.

Do you remember your first oatmeal stout? Your first imperial IPA? How about your first sour beer? Tasting a craft-brewed beer for the first time can be a life-changing experience. It was delightful to share that experience with visitors to the BA booth.

The 2018 European Beer Star awards were also named at BrauBeviale, and US breweries performed admirably. Congratulations to Alaskan Brewing Co., Allagash Brewing Co., Big Bend Brewing Co., Boston Beer Co., Brewery Ommegang, Denver Beer Co., Firestone Walker Brewing Co., Founders Brewing Co., Golden Road Brewing, Indeed Brewing Co., Odell Brewing Co., Pelican Brewing Co., pFriem Family Brewers, Port City Brewing Co., Rahr & Sons Brewing Co., Reuben's Brews, Revision Brewing Co., Rogue Ales, Saranac Brewery, Ska Brewing Co., Societe Brewing Co., Three Weavers Brewing Co., and The Virginia Beer Co. for taking home medals at this prestigious international competition.

A heartfelt *danke schön* also goes out to Stefan Bauer, Tibor Kantor, and Klaus Rolshoven for helping pour at our booth (and for sharing some great homebrew and Franconian beer).

**Dave Carpenter** is editor-in-chief of *Zymurgy*.

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# Features



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## HOMEBREW GADGETS 2019

Here it is! Our 13th annual compendium of the coolest, craziest, and most creative contraptions in homebrewing will inspire you to build your own DIY inventions.

By Zymurgy readers



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## HEIMBRAU: A LOOK AT BERLIN'S HOMEBREWING COMMUNITY

In May 2018, beer geeks and beer judges assembled at Stone Brewing's Berlin – Marienpark brewery to sample and judge some of the German capital's best homebrew.

By Aaron Brussat



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## BIG, BRUT-IFUL IPA

It's dry, it's spritzy, and it's the latest installment in the continuing evolution of India pale ale. Brut IPA is here, and it might be your new favorite.

By Chris Colby



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## AND THE 2018 GABF PRO-AM MEDAL GOES TO...

The 2018 Great American Beer Festival Pro-Am Competition was bigger than ever, and the medal-winning recipes are right here for you to brew.

By Kristen Kuchar

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Cover Photo  
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of fermentation, as in brewing.



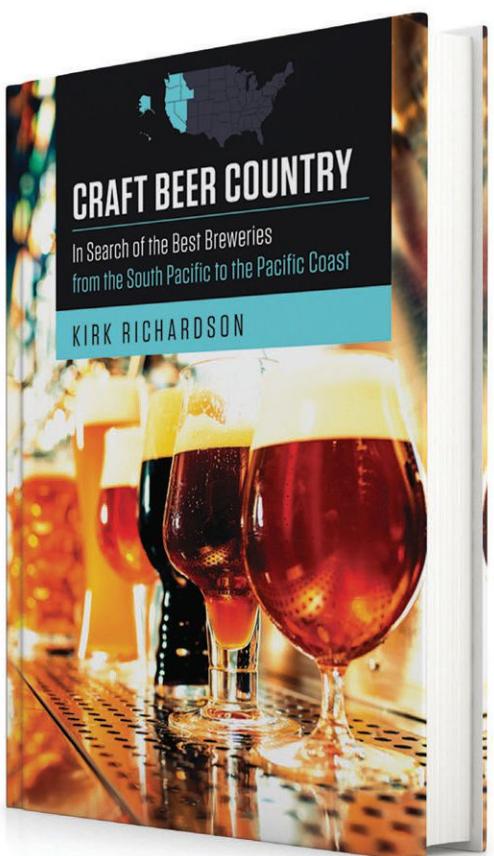
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and more on our website @  
[HomebrewersAssociation.org/  
homebrew-recipes](http://HomebrewersAssociation.org/homebrew-recipes)

# NOW ON Tap

## Homebrew Makes Big Screen Splash

Douglas Tirola's new film shines a light on craft beer and gives homebrewing a share of the limelight. *Brewmaster* follows two beer enthusiasts—one a would-be pro brewer, the other a Master Cicerone candidate—as they pursue their passions. Although the focus is on commercial brewing, homebrewers will enjoy copious cameos by carboys, Cornies, and clubs. Featuring interviews with such beer celebrities as Sam Calagione, Ray Daniels, John Kimmich, Jim Koch, Randy Mosher, Garrett Oliver, and Rob Tod, *Brewmaster* may leave you reconsidering your own career path.



## Craft Beer Country

BY KIRK RICHARDSON

The title may be long, but the list of breweries author Kirk Richardson profiles in *Craft Beer Country: In Search of the Best Breweries from the South Pacific to the Pacific Coast* is even longer. Focused on the far western states, this is your book if your next road trip takes you to the Pacific, Alaska, or Hawaii-Aleutian time zones (plus some bonus Mountain time in Boise, Idaho). Each chapter profiles a different brewery and includes a spotlight on a brewer or brewery owner. *Craft Beer Country* is available now from [craftbeerbooks.com](http://craftbeerbooks.com) for \$24.95.

# Beer Prices Could Climb with Global Temperatures

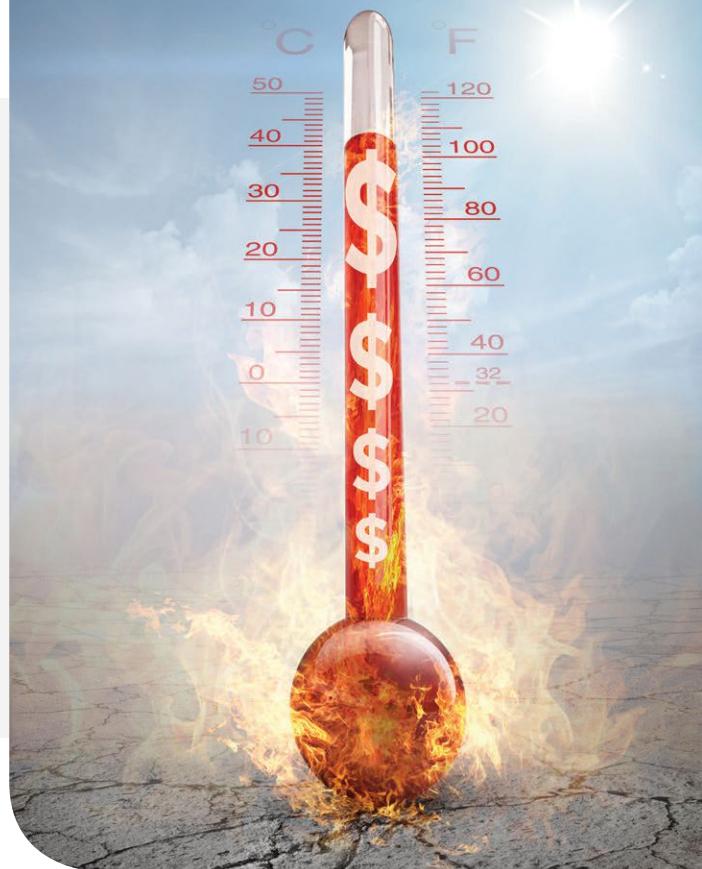
What will happen to beer as the planet warms? An agricultural product made from hops and barley, beer is subject to long-term variation in climate. But how much will a changing climate alter world barley supply and the cost of beer? In "Decreases in global beer supply due to extreme drought and heat," Wei Xie and a team of researchers (2018, *Nature Plants*) addressed this question by combining climate, agricultural, and economic models.

Barley yields currently decline during hot, dry years, and the authors presumed that increasing climate change-induced droughts would lower future barley yields. Climate models predict that extreme droughts in current barley-growing regions would increase in annual frequency by 4 to 30 percent over the next 100 years, causing yields to decline 3 to 17 percent.

Barley shortages would lower consumption of beer and increase its cost, and some countries would pay more for beer than others. For example, depending on the climate scenario, six-packs in Canada are predicted to increase by USD 3 to 19.

It might not all be doom and gloom, though. US brewers are less vulnerable to declining yields than other regions, and barley-driven beer prices will be smaller in the US than elsewhere. And Brewers Association chief economist Bart Watson says this study may not paint an accurate picture. He believes agriculture will adapt and notes that the beer industry is already supporting research to help agriculture adapt to upcoming changes.

This study did not consider two other beer ingredients, hops and clean water, both of which are susceptible to climate change.



*Editor's Note:* Thanks to Bob Hall for translating academic jargon into everyday language.

## Gravity Temperature Twofer

Are you still using the original hydrometer that came with your first homebrew kit? If so, consider yourself lucky because most of us, maybe having had a homebrew or two, let them roll right off the counter and onto the floor where they shatter in a most spectacular fashion.

If you're in the market for a new one, check out the Pro Series Thermo Hydrometer Testers from Brewing America. Integrating two instruments into one makes a lot of sense, but in the words of LeVar Burton, you don't have to take my word for it. Here's what *Experimental Brewing* podcaster and friend of the AHA Denny Conn has to say.

"I've gone through a lot of hydrometers in 20-plus years of brewing and none of them were the quality of my Brewing America hydrometers," says Denny. "The Thermo Hydrometer is especially great. You can make temperature corrections without needing a separate thermometer! Dead-on accurate, beautifully built, and the accessories are a great plus. Kyle and Angela are responsive to what the customer wants and a joy to do business with!"

Convinced? Head over to [brewingamerica.com](http://brewingamerica.com) and pick up a new all-in-one thermometer-hydrometer for your next brew day.



Photo © Getty/cosmin4000 [thermometer]



## Farmhouse Yeast FROM LITHUANIA

When Zymurgy's editor-in-chief first learned of Aldona Udriene's farmhouse ales in a 2015 episode of *Booze Traveler*, he really wanted to get his hands on that **centuries-old yeast**. Unfortunately, a trip to Jovarai, Lithuania, was not in the cards. Now, thanks to Omega Yeast Labs, anyone can try brewing with this famous old strain.

Omega has partnered with Udriene to bring homebrewers the yeast strain responsible for her esteemed Jovaru Alus beer. The yeast is said to have been discovered by Udriene's grandfather in a

nearby forest a century and a half ago. DNA sequencing suggests it may have some *diastaticus* genetic material; in any case, it's rather more attenuative than run-of-the-mill *S. cerevisiae*.

According to Omega, Jovaru Lithuanian Farmhouse yeast complements farmhouse beers with citrusy esters and restrained phenols and produces notes of lemon pith and black pepper with a soft mouthfeel. The yeast lab suggests trying it for Belgian-style pale ales, wits, blondes, and more.

Learn more at [omegayeast.com](http://omegayeast.com).



*Left to right:*  
Jovaru Alus; Aldona Udriene outside her backyard brewery in Jovarai, Lithuania; Omega Yeast Labs' Jovaru Lithuanian Farmhouse yeast

Photos courtesy of Stephanie Vermillion [Farmhouse Yeast]



## Yes, You Can Can

You've probably seen Oktober's can seamers sealing up Crowlers with fresh beer for customers to take home from your favorite taprooms. Canning has been beyond the reach of most homebrewers (see Gadgets, Jan/Feb 2018 for a notable exception), but Oktober Design recently introduced a smaller seamer that might just fit the bill if you're considering a canning setup.

The **Oktober SL1 Homebrewer** seals aluminum beverage cans with 202/B64 ends and includes adapters for 16 oz. and 12 oz. cans. One of these 27-pound beasts will set you back \$879, but that includes a 1-year warranty and, according to the manufacturer, your choice of "any color you want, as long as that color is black."

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# Club News

## CRAFT VS. CANCER

On July 13 and 14, the CRAFT Homebrew Club in southeast Michigan held CRAFT vs. Cancer, a 24-hour brew-a-thon to raise money for the American Cancer Society in honor of Betty Elmhirst.

Members gathered at the home of CRAFT President Keith Manchester and brewed

beer for 24 straight hours. Members of CRAFT and other local homebrew clubs showed up throughout the day and night to show their support, and several local clubs donated money to the cause.

The first beer brewed was Betty's Brown Ale, one of Betty's favorites (see

accompanying recipe below), followed by four more batches that included a New England-style IPA and a session IPA, a recipe that was given to the CRAFT Homebrew Club by Adam Beratta, brewer at Axle Brewing Company.

The event also received support from local businesses. Ingredients were donated by Axle Brewing Company, Brooks Brewing, and Cap 'N' Cork Homebrew Supply.

"I think people thought I was crazy when I suggested the idea, but with all the support we are actually going to try to make it an annual event. Other clubs also showed interest in participating next year," said Keith Manchester.

At the end of 24 hours, CRAFT had raised \$3,080 for the American Cancer Society. CRAFT would like to thank everyone who donated and supported this great cause.



## Betty's Brown Ale

### American Brown Ale

Courtesy of Jim Elmhirst and the CRAFT Homebrew Club.

**Batch volume:** 5 US gal. [18.9 L] **Original gravity:** 1.056 [13.8° P]  
**Final gravity:** 1.014 [3.6° P] **Efficiency:** 69%  
**Bitterness:** 28 IBU **Color:** 20 SRM  
**Alcohol:** 5.5% by volume

### MALTS

8.75 lb. [3.97 kg] Maris Otter malt  
12 oz. [340 g] 60°L crystal malt  
12 oz. [340 g] Victory malt  
8 oz. [227 g] Weyermann Caramunich I malt  
8 oz. [227 g] Weyermann Munich II malt  
4 oz. [113 g] chocolate malt

### HOPS

0.5 oz. [14 g] Warrior, 15% a.a. @ 60 min

### YEAST

English Ale (White Labs WLP002)

### BREWING NOTES

Single infusion mash at 152°F [66.7°C]. Sparge at 168°F [75.6°C] and collect runoff. Bring to a boil, add hops, and boil for 60 minutes. Chill, oxygenate, pitch yeast, and ferment at 66°F [18.9°C].

### EXTRACT VERSION

Substitute 6 lb. (2.72 kg) Maris Otter liquid malt extract for the Maris Otter malts. Crush the remaining malts and steep for 30 minutes at 155°F [68.3°C] in reverse osmosis water. Remove grains and dissolve malt extract completely in the hot wort. Top up to desired boil volume and proceed with the boil.



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# Strength in Numbers

*Dark Vienna lager*

This recipe comes courtesy of John Palmer and the Association of Long Island Homebrew Clubs. See Last Drop on page 96 of this issue to learn the story behind this beer!

<b>Batch volume:</b>	10 US gal. (37.9 L)
<b>Original gravity:</b>	1.050 (12.4°P)
<b>Final gravity:</b>	1.012 (3.1°P)
<b>Efficiency:</b>	70%
<b>Color:</b>	21 SRM
<b>Bitterness:</b>	30 IBU
<b>Alcohol:</b>	5% by volume

MALT

- 10 lb. [4.54 kg] Vienna malt
  - 6 lb. [2.72 kg] pale malt
  - 2 lb. [907 g] 10°L crystal malt
  - 1 lb. [454 g] melanoidin malt
  - 1 lb. [454 g] Briess Midnight Wheat Malt

## HOPS

- 2 oz. [57 g] Amarillo, 8% a.a. @ 60 min  
1 oz. [28 g] Amarillo, 8% a.a. @ 0 min

YEAST

## White Labs WLP029 Kolsch Yeast

BREWING NOTES

Conduct a single-temperature infusion mash at 152°F (66.7°C) with all grains except the Midnight Wheat. Add Midnight Wheat 30 minutes into the 60-minute mash. Fly sparge with water at 168°F (75.6°C) until you hit desired volume and pre-boil gravity. Bring full wort volume to a boil, add first hop addition after hot break, and then follow hop schedule. Chill and rack wort off break matter into fermenter. Oxygenate, pitch appropriate yeast count, and ferment at 58°F (14.4°C). Lager for 6 weeks at 32°F (0°C), and carbonate to 2.5 vol. (5 g/L) of CO<sub>2</sub>.

## **EXTRACT VERSION**

Substitute 11 lb. (4.99 kg) Briess Goldpils Vienna liquid malt extract for the Vienna and pale malts. Crush the remaining malts and steep for 30 minutes at 155°F [68.3°C] in reverse osmosis water. Remove grains and dissolve malt extract completely in the hot wort. Top up to desired boil volume and proceed as above.

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# A Toast to Alberta Rager

**O**n October 26, the homebrewing community lost Alberta Rager, one of our hobby's biggest supporters. Alberta owned the Bacchus & Barleycorn homebrew supply shop in Shawnee, Kan., just outside Kansas City. Alberta was a founding member of the Kansas City Bier Meisters homebrew club and had multiple stints as president and vice president of the club.

Alberta was actively involved in the early days of the Beer Judge Certification Program (BJCP). The BJCP started as a joint project launched by the AHA and the Home Wine and Beer Trade Association (HWBTA, a now defunct trade association for homebrew supply shops). In those days, the BJCP was run by volunteer directors appointed by the AHA and HWBTA. In 1992,

the HWBTA appointed Alberta as its BJCP associate director. The following year, when the AHA's original BJCP co-director Jim Homer stepped down, the AHA appointed Alberta as its BJCP co-director working alongside HWBTA BJCP co-director Pat Baker.

Alberta served for several years on the AHA Board of Advisors (now the Governing Committee) from the late

1990s to mid-2000s. She also served on the Association of Brewers (AOB) Board of Directors prior to the AOB's merger with the Brewers Association of America to form the Brewers Association in 2005.

In 1999, Alberta saved the National Homebrewers Conference (now known as Homebrew Con). At the time, the conference was struggling



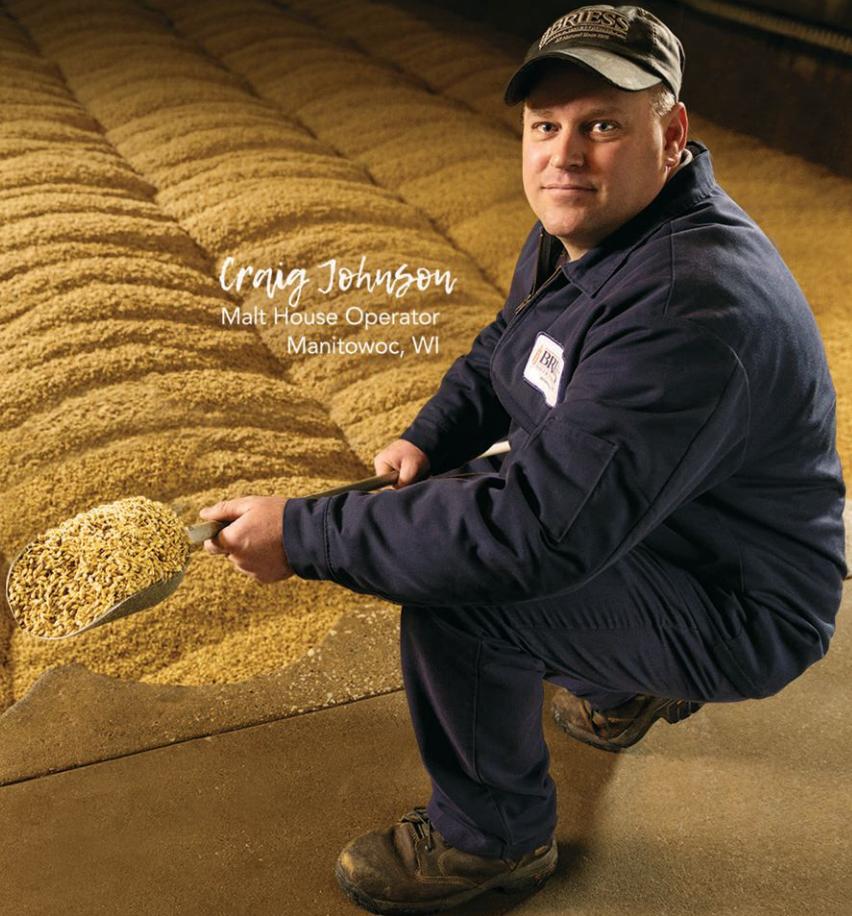
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financially. Facing the possibility that the conference might not happen in 1999, Alberta organized a local committee of Kansas City-area homebrewers to take on conference-hosting responsibilities. The conference was a success, and the local hosting model for the National Homebrewers Conference remained in place for many years after.

That year, the AHA Board of Advisors honored Alberta's contributions with the AHA Board of Advisors annual AHA Recognition Award.

Alberta was one of the first people I met when I started with the AHA as the administrative assistant back in 2000. I recall driving from Boulder, Colo. to Kansas City with then-AHA director Paul Gatz (now director of the Brewers Association Professional Division) for the Kansas City Bier Meisters' annual homebrew competition. There, I met Alberta, who was on the AHA Board of Advisors at the time. Bacchus & Barleycorn was the nicest shop I'd ever seen. It was clean and well-lit, and it offered a great selection of ingredients and equipment.

At that year's Kansas City Bier Meisters competition, I served as a steward for the

first time. The next year, Alberta gave me my first judging assignment. I recall being terrified to judge lambic, a style I was not terribly familiar with in 2001. She paired me with a very experienced local judge, and it turned out to be a great experience. I've since judged scores of competitions around the country and the world and have been judging prestigious professional brewing competitions, including the Great American Beer Festival and World Beer Cup, for the last decade. I have Alberta to thank for putting me on this path.

I recall working with Alberta and fellow shop owner and AHA Board member Chris Graham of MoreBeer! on a program to sell gift card AHA memberships through homebrew supply shops. Now hundreds of shops across the country help to grow the AHA by selling AHA gift cards.

My deepest sympathies go to Alberta's husband Jackie (inventor of the Rager method for calculating IBUs), the staff of Bacchus & Barleycorn, and the Kansas City homebrewing community. The AHA and the homebrewing community would not be what it is today without her contributions.

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I will miss Alberta. Whether or not you knew her, I hope you all join me in a toast to her memory: [Here's to you, Alberta!](#)

## LEARN TO HOMEBREW DAY

On November 3, 3,148 new homebrewers were introduced to the hobby at 246 Learn to Homebrew Day sites located in six countries worldwide. Thank you to all of the homebrewers who helped us celebrate the 20th annual Learn to Homebrew Day by sharing their knowledge with friends and family and making the world a little cheerier (cheerier equals cheerier in my mind).

## 2019 CALENDAR

Add these dates to your 2019 homebrewing calendar to keep up with the AHA throughout the year.

### January 22–29

AHA National Homebrew Competition Entrant Application Window

### Mid-February–March 31

AHA Governing Committee election ballots accepted

### Early March

AHA Homebrew Con Providence Registration opens

### March 22–April 14

AHA National Homebrew Competition First Round Judging

### March 31

Entry deadline for the AHA Radegast Club of the Year Award (see community section of [HomebrewersAssociation.org](#) for details)

### May 4

Big Brew for National Homebrew Day

### June 27

AHA National Homebrew Competition Final Round Judging

### June 27–29

AHA Homebrew Con Providence

### August 3

Mead Day

### October 3–5

Great American Beer Festival

### November 2

Learn to Homebrew Day

Visit the calendar on [HomebrewersAssociation.org](#) for AHA/BJCP-sanctioned competition dates and deadlines.



## LAST CHANCE TO GIVE THE GIFT

Did you miss someone on your holiday gift list? Or perhaps you'd like to add to your brewing library while adding a year to your AHA membership? When you buy a one-year AHA membership gift card from [HomebrewersAssociation.org](#) before December 31, you get your choice of one of three books from Brewers Publications: *Brewing Classic Styles* by John Palmer and Jamil Zainasheff, *Farmhouse Ales* by Phil Markowski, or *Wild Brews* by Jeff Sparrow. Plus, everyone who activates a membership gift card before December 31 is entered to win a grab bag of sweet AHA merchandise.

## RADEGAST CLUB OF THE YEAR ENTRIES

Throughout the world, local homebrew clubs play an important role in promoting homebrewing in their communities. Clubs have long gained recognition through the achievement of their members in competitions, including the AHA National Homebrew Competition. But there's more to clubs than supporting members to make competition-worthy beer.

With that in mind, the AHA Governing Committee created the AHA Radegast Club of the Year Award (what Drew Beechum called the Awesome Club of Awesomeness Award). This award puts a spotlight on all the awesome ways that homebrew clubs promote homebrewing and give back to their local communities.

If you are a member of a homebrew club that deserves recognition for the great things your club does, let us know about it by submitting an entry for the Radegast Club of the Year Award. The winning club takes home a super-cool mash paddle trophy from award sponsor Yakima Chief Hops and splits a \$1,000 cash award with the charity of the club's choice.

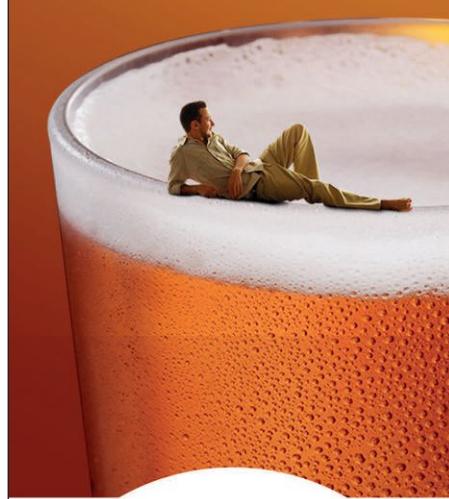
Entries are due by March 31. The winner of the sixth annual Radegast Club of the Year Award will be announced during the awards ceremony at Homebrew Con 2019 in Providence, R.I. See the Community section of [HomebrewersAssociation.org](#) for more details.

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## CAPITOL HILL STAFF HOMEBREW COMPETITION

It has been five years since the last two states that had banned homebrewing (Alabama and Mississippi) passed legislation to legalize homebrewing, but the AHA continues to work with homebrewers throughout the United States to solidify homebrewer rights. While those homebrewer rights battles are primarily fought at the state level, the AHA is also actively promoting homebrewing at the federal level.

One way we increase federal legislators' awareness of homebrewers' contributions is with our annual Capitol Hill Staff Homebrew Competition. This was our third year holding this competition, which is open to any of the legislators, their staff, and the federal employees that work on the Hill in Washington, D.C.

Judging took place on December 2 at the Bluejacket brewery in Washington, D.C., with a mix of professional brewers and Beer Judge Certification Program judges evaluating entries. On December 11, we announced **Pierce Wiegard from Senator Dan Sullivan's (R-Alaska) office** as the 2018 champion brewer during the annual Brewers Association Holiday Reception in the Longworth House Office Building cafeteria.

Brewers Association federal affairs manager Katie Marisic and AHA competition coordinator John Moorhead co-organize this event. Thank you to our judge and steward volunteers and to the members of D.C.-area homebrew clubs Brewers United for Real Potables (BURP) and DC Homebrewers, without whom we could not pull this off.

Pierce Wiegard is the 2018 Capitol Hill Staff Homebrew Competition champion brewer. Pictured, left to right, are Gary Glass, AHA director; Pierce Wiegard and David Pigue, Senator Dan Sullivan's office (R-Alaska); and Charlie Papazian, Brewers Association founder and past president.

## LEGISLATIVE UPDATE

The AHA staff, led by competition coordinator John Moorhead, continues to work with homebrewers in several states on homebrewer rights issues.

In North Carolina, the AHA continues to provide input on and monitor the Alcohol Beverage Control Commission's proposed rules to enforce the state's new homebrew law. The public commenting period for those rules has closed. If the rules are adopted by the Commission at its November 14 meeting, they would go before the Rules Review Commission for approval at its meeting on December 13. As written, these rules are less than ideal. If necessary, the AHA will support efforts by local homebrewers to pass additional homebrew legislation.

In Nevada, the Health Department has informed homebrew clubs that it is illegal for homebrew to be brought onto licensed premises for events, including homebrew competitions held at breweries, pubs, or restaurants; homebrew served at beer festivals is also prohibited. The AHA is working with Nevada homebrewers to potentially introduce homebrew legislation in 2019. Currently, Nevada does not have a homebrew statute but defers to federal law.

Until next time, happy homebrewing!

*Gary Glass is director of the American Homebrewers Association.*

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# Recipes for Disaster?

**O**ne thing I've learned in 20 years of homebrewing is that many homebrewers are intentionally vague about recipes and process. I've brewed a few "winning" recipes over the years and have not always had what I would consider a winning beer for that style. It makes me re-evaluate my procedures and notes and is extremely frustrating. I've had to chalk it up to bad information or recipes. Maybe they made last-minute changes to their recipes and forgot to write them down. Or maybe they lie on purpose?

I am only a Recognized BJCP judge, but I was recently judging a nice competition (250 or so entries) with a Master BJCP judge. He mentioned that a member of his club had lied about an award-winning recipe so no one else would steal it.

I just wanted to point out how frustrating it can be to brew a supposedly gold-medal-winning recipe only to have it turn out to be something else: out of balance, wrong for the style, you name it. Next time someone calls "foul" on a recipe, don't be so quick to dismiss it or blame the judges. I now have proof of at least one instance.

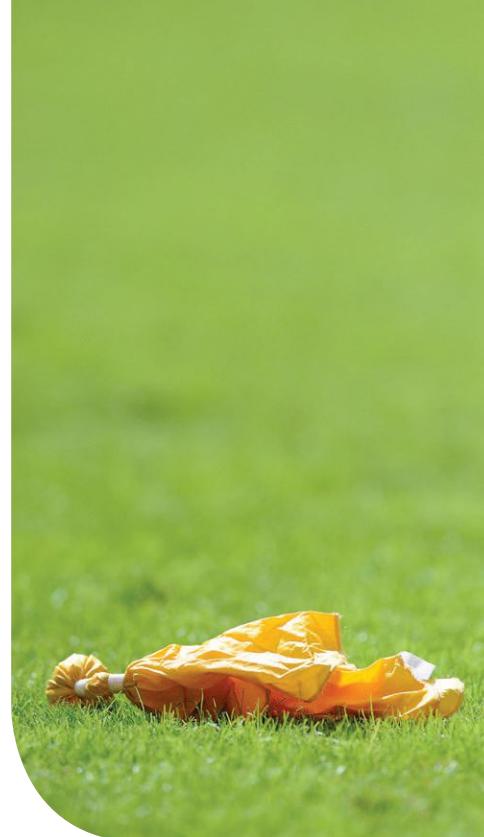
Thanks,  
Mike Maryo  
Bloatarian Brewing League  
Cincinnati, Ohio

**National Homebrew Competition coordinator John Moorhead and Zymurgy editor-in-chief Dave Carpenter respond:**

While we sympathize with your frustration, we doubt many AHA members would intentionally mislead other homebrewers. Every large group has tricksters—even narrow bell curves have standard deviations—but we are confident it's the exception, not the rule.

When a homebrewer enters the National Homebrew Competition, he or she agrees to provide the recipe for publication in Zymurgy and on HomebrewersAssociation.org if it takes a gold medal in the Final Round. We trust entrants to be honest and submit accurate recipes, and most NHC winners send trustworthy information. If something looks blatantly wrong—say, a pound of roasted barley

“  
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or blame the  
judges.



in 5 gallons of golden ale—then we of course ask the entrant to confirm they sent us the right info.

A homebrewer who medals at NHC is likely to have brewed numerous variations on the same basic recipe, and it's entirely possible that he or she might provide a beta version by mistake. And, as much as we'd prefer not to admit it, editors screw up from time to time. When an error is brought to our attention, we print a correction and post it to the AHA Forum.

All that said, a recipe is just a starting point. Think of the countless other variables that can affect the outcome: crush quality, inconsistent ingredients, fermenter geometry, pitch rates, oxygen levels, and so on. Even humidity and atmospheric pressure play roles. Commercial

breweries have the resources and financial incentive to aim for repeatability from one batch to the next, but the pros still blend batches to smooth out variations between brews.

Even labeling regulations are subject to variability. The Alcohol and Tobacco Tax and Trade Bureau (TTB) says beer labels must express alcohol to within 0.3 percentage units of the indicated value, which means a 5% ABV pale ale could contain anywhere from 4.7 to 5.3 percent alcohol by volume. Repeatability is a great goal, but it's elusive.

It's up to each homebrewer to adjust and reinterpret what the original brewer may have intended. And isn't that what homebrewing is all about—re-creating, reinterpreting, and reinventing something that makes it our own? →

## WELCOME TO THE OBSESSION!

Dear Zymurgy,

I use my AHA membership for discounted tickets to events and for discounts at my local breweries. I work in downtown LA, so the only problem is deciding where to go. I read *Zymurgy* cover to cover and have immersed myself in homebrewing and the craft beer culture.

I started with a 1-gallon kit about 16 months ago, and now my brew day includes water chemistry, step mashing (when appropriate), first wort hopping, and hop additions after the wort cools to 185°F (85°C). Wort aeration has made the most improvement in my brewing, and I have almost mastered the art of beer under pressure, kegs, and beer guns.

I have my own oak barrel and play around with sours as well as mixed fermentation from harvested dregs. I haven't reached award level yet, but I have entered my product for evaluation. I've learned a lot and look forward to making it to the award table when I am worthy.

Cheers, and keep making brewing fun.

Bob Peters

Tujunga, Calif.



## PUMPKIN BEER GEAR

Dear Zymurgy,

I saw your half-page staff spread on pumpkin beer (*masthead*, Nov/Dec 2018) and wanted to show you my 2017 version of pumpkin beer. Note the airlock in the pumpkin.

The pumpkin was about 12" in diameter with about a 1" thick wall, so calculating the volume of a 10" sphere, it's 524 cubic inches, which works out to 2.26 gallons. I made a 2.25-gallon batch (final volume).

I cut out the "lid" of the pumpkin (slanted cut so the lid would sit back in), scooped out the inside, and then filled the pumpkin with boiling wort to sterilize.

The beer was a strong spiced brown ale—about 10% ABV—and it came out yummy!

Nelson Crowle  
Brighton, Colo.

## YAY, BREW PETS!



I wanted to share a pic of my brew dog Walter helping me brew a Brewdog Punk IPA clone. Walter is always at my side during brew days, but it's mostly anticipation for his spent grain treats.

John Calderone  
Jersey City, N.J.



This is my brewmaster, Saaz. He loves to hang around and lend a hand when I brew on the weekends. Whether it's a one-step infusion or triple decoction, Saaz is always by my side.

Greg Reshetiloff  
Davidsonville, Md.

## MORE GLITTER LOVE

Dear Zymurgy,

I picked up your magazine after seeing the note on the cover that said "Glitter Beer? We're better than that" (Sept/Oct 2018). I work for Bold Missy Brewery in Charlotte, N.C., and we happen to be one of those "cliché" breweries that are "not to be taken seriously." I'm sorry Dr. Bockisch doesn't care for this trend, but she needs to get a few things straight before casting shade all over glitter beer.

Bold Missy is the first and only 100-percent-female-owned brewery in Charlotte and one of the very few in North Carolina. We're aware this is a male-dominated industry, but we have pushed our way through the good ol' boys club by delivering quality products in our market. We didn't just sprinkle glitter in our beer because it's so darn cute and girly; it was a very specific marketing tactic.

Though the author claims "you don't see people lined up around the block for a can of glitter blonde," we have, in fact, seen people losing their mind over our beer. We released our lemon and pink peppercorn saison last February, and after we went viral on Buzzfeed and in various other media, we've had daily calls and emails from across the country (and the world) wanting our beer. We certainly don't rely on this beer for our business, but we can't deny the extremely positive impact it has had.

Get your facts straight. The glitter used in beer (if used correctly) isn't made of mica; it's the same sugar-based glitter used in things like sparkly wedding cake frosting. It breaks down in your system naturally and adds nothing to the taste and texture of the beer.

Yes, it's girly. But saying that perpetuating trends like this is basically the reason that no one takes us gals seriously is completely against the point of organizations like the Pink Boots Society. It is ludicrous to demand that we seek respect from men by trying to emulate them and by squashing anything that makes us feminine. We women in the beer biz don't need to aspire to be "one of the guys." We need to garner respect and equality by being incredible brewers and businesspeople in this industry.

Sending hugs and kisses  
and unicorns from Charlotte,  
Lybbi Roth  
Bold Missy Brewery  
Charlotte, N.C.



This is Cooper, my seven-month-old brewing assistant. He's not much help, but he keeps me company on chilly mornings. Taking a shot at Mexican lager today; wish us luck!

Jeremiah Adkins  
Stockton, Calif.



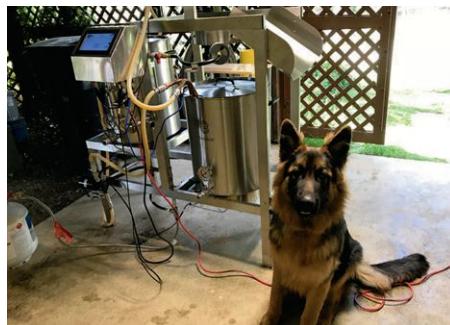
I love your magazine, especially the section where all the brew pets are included. Now that I have my very own pupper, I couldn't help but brew with him! Baloo the brew dog is still learning the ropes, but he's gotten quite a taste for spent grain—I think he'll be a willing assistant for many beers to come!

Drew Kostic  
Brooklyn, N.Y.



This is Einstein, our two-year-old tabby cat, who is fascinated by brewing, especially the fermentation process.

Pete Oren  
Fishers, Ind.



Cedric is eight months old now and weighs 90 pounds. He's a formidable guard for my brew days. Since he's been on point, I've not had a single attack from man or beast on brew day.

Peter Bergler  
Duvall, Wash.



We are lucky to have a cat who is both a brew kitty and a grill kitty. Here Elspeth is sitting on the grill, supervising a batch of Scottish ale. Every task needs a good supervisor!

Lloyd Chatham  
Lafayette, Ind.



This is our brew dog Nugget! He's a two-year-old English bulldog. He's eagerly waiting for us to finish racking our super saison (7.7% ABV)!

Shannon Rilloraza  
Harrisburg, N.C.

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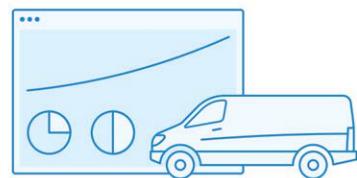
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The screenshot shows the Untappd Marketplace interface. At the top, there's a navigation bar with 'CATALOG', 'ORDERS', and 'DISTRIBUTORS'. On the right, there's a shopping cart icon with '27' items and a gear icon. The main area is titled 'Catalog' and features a search bar. On the left, there are filters for 'PRODUCT' (Beer, Wine, Spirits), 'STYLE' (with a search input and a list of styles like Altbier, American Wild Ale, etc.), and 'PRODUCER' (with a search input and a list of producers like A Tutto Malto, A-One Brewery). The central part of the page displays three product cards: 'The Waldos' Special Ale' by Lagunitas Brewing Company (IPA - Triple, 4.14 rating, 46,098 ratings, Empire Distributors, Add to Cart), 'Neon God' by New Anthem Beer Project (IPA - New England, 4.31 rating, 1,567 ratings, New Anthem Beer Project, Add to Cart), and 'Son of a Peach' by RJ Rockers Brewing Company (Fruit Beer, 3.5 rating, 44,392 ratings, Beverage South, Add to Cart).



# Calcium Chloride Conundrum

Dear AHA,

I'm very interested in brewing the Dragon's Milk clone on page 36 of the Jul/Aug 2018 issue of *Zymurgy*, but I am struggling with the water profile instructions. If I use my brewing software with reverse osmosis water (or even my local tap water) and add 1 gram calcium chloride per gallon, I get a mash pH that's too low and a chloride/sulfate ratio that is off the charts. What am I missing?

My source water here in Fort Collins has a pH of 7.9 and these ion concentrations: Ca 16.6 ppm, Mg 1.6 ppm, Na 3.2 ppm, Cl 2.5 ppm, SO<sub>4</sub> 12 ppm, HCO<sub>3</sub> 43 ppm.

M.B. Boesen  
*Fort Collins, Colo.*

**Zymurgy associate editor Amahl Turczyn responds:** With big beers like this one, I don't worry too much about getting the water profile dialed in if you are confident

you can hit a mash pH of around 5.4. There is no need to acidify with all the black malts in the grain bill, and residual calcium from the ample grain bill should be more than sufficient for yeast health. Looks like your Fort Collins source water is a little on the alkaline side, so it should be fine for this beer as is.

That said, you can also add gypsum and calcium chloride to achieve a profile like this one: Ca 80 ppm, Mg 5 ppm, Na 25 ppm, Cl 75 ppm, SO<sub>4</sub> 80 ppm, HCO<sub>3</sub> 100 ppm.

I shy away from adding too much in the way of water salts, particularly sulfates, as the end result can end up with a mineral savory edge that takes away from the smooth maltiness you are targeting. The beer would finish drier, but it might pull too much bitterness from the black grains. More important is getting the malt, oak, and bourbon flavors to balance.

## AGING DOPPELBOCK

Dear AHA,

I have a friend who bakes pretzels and makes mustard to accompany them. One of her mustards includes doppelbock, which can be a rather expensive keg to acquire if one is just making mustard and not hosting a soirée.

So, I offered my assistance and am about to embark on a journey into the unknown (for me) and brew my first doppelbock. There are two remaining kinks I have yet to work out, and I could use some input.

What kind of container is preferred for aging beers? I don't really want to tie up a keg for a few months while the doppelbock matures, and it seems so informal to age in a plastic bucket. I am a little bit at a loss

If I don't intend to carbonate the beer (I don't think it needs to be carbonated to use it in the mustard), can I age it in glass growlers without having to worry about potential breakage?

Thanks for your insight!

Kristen Gangl  
Sacramento, Calif.



Zymurgy editor-in-chief

Dave Carpenter responds:

Doppelbock is one of my absolute favorite styles! Congratulations on embarking on what is sure to be a rewarding journey. For long-term aging, it's best to use a vessel that's impermeable to oxygen. A keg is ideal because you can purge most of the oxygen, but you'll also have excellent results with a glass carboy. Just be sure to keep it out of direct sunlight to prevent skunking!

Traditional "starter kit" food-grade plastic buckets are not great for long-term maturation because (1) the material itself is porous and (2) the shape leaves a lot of beer surface area in contact with the headspace, which, despite your best efforts, is likely to include some oxygen. Many PET carboys that have hit the market in the past decade or so are specifically designed to minimize oxygen ingress, though, so ask your local homebrew shop about these.

You definitely don't need to carbonate the beer if it's all going into mustard, and glass growlers are perfectly fine for this if fermentation is complete. Standard-issue glass jugs aren't designed

to handle the high pressures of fermentation, so make sure your doppelbock has reached final gravity first, and consider using an airlock or leaving the cap slightly loose to relieve pressure and prevent dangerous explosions.



## SANITIZING FOR SECONDARY

Dear AHA,

My first experiments with adjuncts in beer will be with cucumber and chiles. I planned to put the cucumber and the pepper in the secondary once primary fermentation is finished. How can I make sure that this will not bring undesirable microorganisms into the beer? Do you recommend processing another way?

Cheers from Switzerland,  
Beat Bucher  
Aegerden, Switzerland

Experimental Brewing cohost Denny Conn says: "I say do nothing. I put fruit, even wild mushrooms I pick myself, into secondary without doing anything other than wiping off the dirt. You could, of course, do something like just spray the chiles and cukes with sanitizer. You'll definitely want to juice the cukes and use the juice in secondary. Drew Beechum would say to make a tincture with the chiles—that would make it easier to add them to taste at packaging. That's a much better way to get the right amount rather than try to guess at how much to put in the fermenter."

Zymurgy editor-in-chief Dave Carpenter says: "I concur on adding chiles by soaking them in vodka for a few days and then adding that tincture to secondary. The vodka sanitizes the peppers and act as a solvent to extract flavor and heat. If you're really paranoid about the cucumber, you could juice it and then do a short pasteurization step by heating the cucumber juice to 160°F (71°C) for a minute or two. Then allow it to cool and add to secondary."

## CARBONATION STUMP

Dear AHA,

As a homebrewer of 45 years, I may be "old hat," but something really sticks in my craw when I read it in your magazine. I find it to be against all that is natural when done in private, but to do it in public when listing recipes of award-winning homebrewed beers, I feel it is problematic.

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I refer, of course, to force carbonation of homebrew. The majority of those listed in the Winner's Circle special (Sept/Oct 2018) were force carbonated. Perhaps this was done so they would not need to be "settled" after shipping, but surely to advertise this method is against nature.

Shouldn't you, as ambassadors of beers brewed at home, be encouraging home-brewers to carbonate naturally with some type of sugar and a little yeast?

Yours,  
Trevor A. Cox

*Hey Trevor, we posed your question to our friend Jake Huolihan over at Brulosophy.com. He has conducted several experiments on the differences between natural and forced carbonation. Here's what he has to say.*

**Jake Huolihan responds:** "While I totally understand your desire to carbonate beer using more traditional methods and fully support people doing that, the only way to get beer carbonated and into a glass within a day is force carbonation. As someone who's infinitely impatient when it comes to beer, this is a big selling point.

"Taking a different approach to the question, though, many brewers serve their beer in kegs out of a keezer. It would be impractical to serve beer on tap without some form of gas pushing it. The ability to simply set a regulator to a given pressure and know your beer will be carbonated to exactly that level offers quite a nice modicum of control."

"Having compared force-carbonated beer to bottle-conditioned beer on two separate occasions now, the data fail to show enough differences in these two methods in the short term to be distinguishable to a panel of tasters.

"Now, is there a level of romanticism for boiling up some sugar, mixing it in the beer, and filling up a bunch of bottles? For some, totally! And that's fine for them. I tend to agree with your comment that natural carbonation is, in fact, more natural than force carbonation. However, I'd much rather encourage homebrewers to do what makes them enjoy the hobby the most so that they, too, will still be brewing in 45 years and writing to Zymurgy (which I imagine will be directly downloaded to our brains by then)."



#### ASK THE AHA

Have a question for our motley crew of brewing geeks?  
Hit us up at [asktheaha@brewersassociation.org](mailto:asktheaha@brewersassociation.org)



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# Northern English Brown Ale



Brown ale is an old group of beers, with mild, Southern brown, and Northern brown making up the most common English variants. Milds are small beers with starting gravities of no more than 1.038 usually, yet they are typically amber to deep brown in color with relatively high finishing gravities, and they often pack a lot of malt flavor.

Southern English browns are fuller, sweeter, and not as strong as their northern counterparts, topping out at about the same gravity as milds. Sometimes called London brown ales, these beers are sweeter and chewier than mild ales, and are considered Historical Beers by the BJCP. They tend to be closer to session-strength brown porters, with chocolate and perhaps even a little roast or coffee character creeping in. Northern English browns tend to be lighter in color, stronger, and drier in the finish, and they are generally more prevalent today than the other two brown beers.

British brown ale as a “style” is hard to nail down historically because it’s primarily distinguished by color, and as we all know, two beers of the same color can have vastly different flavor, strength, bitterness, viscosity, etc. A Burton ale may have the exact same shade of brown as a Scottish light, for example, but they have little else in common. One thing we can say is that most ales that came along before modern kilning techniques were brown by necessity because brown malt was the only malt available.

If the legends are true, one can imagine Robin Hood enjoying a brown ale with Friar Tuck in the twelfth century. It was probably strong, perhaps around 1.080 original gravity, though with a high finishing gravity as well; it probably had some roasted and/or smoky elements, as those medieval malts were most likely kilned unevenly over a wood fire, resulting in some burnt kernels and some smoke uptake; and it was probably not hopped, or lightly hopped at best, since the use of hops in brewing was not widely adopted in England until closer to the 1500s.



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Queen Elizabeth I might have consumed a version of brown ale known as October ale, which was brewed by domestic brew-houses of the 16th century. This would have also been strong—over 8% ABV—drier with less smoke, and more like our idea of English barleywine: a full, malty palate with dark fruit and black tea, brown sugar and caramel, and perhaps some barrel oak tannin.

But this is mostly guesswork and speculation. What we know as northern English brown ale is a 20th-century phenomenon much closer to what can be considered a “style” than a whole range of historical British beers of various strengths that happen to share a color range. Some cite Newcastle as the progenitor of the style, though it has undergone several reformulations since its launch in 1927. Once a blend of a light amber ale and a stronger, fruitier dark ale, brewed in Newcastle upon Tyne in England, it’s now an orange-brown, mass-produced beer made by Heineken at its Zoeterwoude plant in the Netherlands.

Others consider Samuel Smith Nut Brown Ale the father of northern English brown, and its distinctly rich, malty, toffee-like character with a hint of butter does indeed remind one of roasted chestnuts, though no type of nut is actually used in the beer. (And it’s still brewed in Yorkshire, England, using the small brewery’s original hard water from a well sunk in 1758.) Both breweries bottle their brown ales in clear glass, evidently unconcerned with the possibility of light damage, which may tell you something about how they are hopped. I personally have never had a skunked bottle of either beer.

“Nut brown ale” isn’t necessarily considered a subset of northern English browns, but most craft-brewed beers of that name do fit the style parameters of category 13B, British Brown Ale, as laid down by the BJCP. Flavors should include “a light to heavy caramel character” with “nutty, toasted, biscuit, toffee or light chocolate.” That toasted nut flavor is easily achieved with a skillful balance of specialty malts in the grain bill.

One of my favorite nut browns, and most authentically “English-tasting,” is brewed by Santa Fe Brewing Company and is simply called Nut Brown Ale. While some creative breweries out there have used actual nuts to produce a successful nut brown ale in the English style—notably Lazy Magnolia’s Southern Pecan, another strong recommendation—adding ground nuts to the mash isn’t highly recommended, as the oils can promote haze and cause foam retention and stability issues downstream.

As with so many styles, balance plays a critical role in nailing the style, and with northern English brown, much of that balance is achieved with the interplay between base malts and specialty malts. Hops do provide some bitterness, but they are largely background in these beers. You want only low hop flavor and no hop aroma—a modest dose at the beginning of the boil and just a touch near the end for flavor, with floral English varieties like Fuggle or East Kent Golding, and that’s it. But you have a lot more options for grains.

I prefer British Maris Otter pale malt for the base malt, though some brewers use a combination of domestic pale malt and Victory and/or Special Roast malt to

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add toast, cracker, and biscuit notes. That elusive nutty flavor comes primarily from the base malt, however, and that's why I believe Maris Otter malt is so important in this beer. Crisp, Bairds, Thomas Fawcett, and Simpsons all offer quality Maris Otter base malts, although each is a little different;




## English Brown Ale

<b>Batch volume:</b>	5.5 US gal. [20.8 L]
<b>Original gravity:</b>	1.050 [12.5°P]
<b>Final gravity:</b>	1.013 [3.25°P]
<b>Bitterness:</b>	25 IBU
<b>Color:</b>	18 SRM
<b>Alcohol:</b>	5% by volume
<b>Efficiency:</b>	75%

**MALTS**

- 5.5 lb. (2.49 kg) Maris Otter pale malt
- 3 lb. (1.36 kg) light Munich malt
- 8 oz. (227 g) 77°L Crisp crystal malt
- 8 oz. (227 g) 60°L Crisp brown malt
- 4 oz. (113 g) 200°L pale chocolate malt

**HOPS**

- 1.5 oz. (42 g) East Kent Goldings, 5% a.a. @ 60 min (24 IBU)
- 0.25 oz. (7 g) East Kent Goldings, 5% a.a. @ 10 min (1.4 IBU)

**YEAST**

White Labs WLP007 Dry English ale or WLP002 English ale yeast, 2L starter

**WATER**

Ca 45–90 ppm, Mg 0 ppm, SO<sub>4</sub> 37–57 ppm, Na 0–60 ppm, Cl: 70–80 ppm  
Pickling lime or baking soda as needed to raise mash pH to 5.2–5.3

**BREWING NOTES**

Mash in at 153°F (67°C) and hold one hour. Collect and boil wort, adding hops as indicated. Chill wort to 64°F (18°C) and pitch yeast starter at the same temperature. Maintain temperature of 64°F (18°C) until signs of an active fermentation are evident. Then allow the temperature to rise naturally to 68°F (20°C) until finished.

**EXTRACT VERSION**

Substitute 4.5 lb. (2.04 kg) pale malt extract syrup for Maris Otter malt and 2.25 lb. (1.02 kg) Munich malt extract syrup for Munich malt. Steep remaining malts at 160°F (71°C) for 30 minutes. Remove grains and dissolve extracts.

Crisp seems to have a bit more nuttiness, Fawcett has suggestions of treacle, and Bairds has a kind of pancake or biscuit note.

I find that pairing the base pale with 30 percent or less of 10°L Munich malt lends a full, malty, bready character that's also very appealing in a northern English brown. Beyond 30 percent things begin to taste less English, but a subtle hint produces a harmoniously malty result.

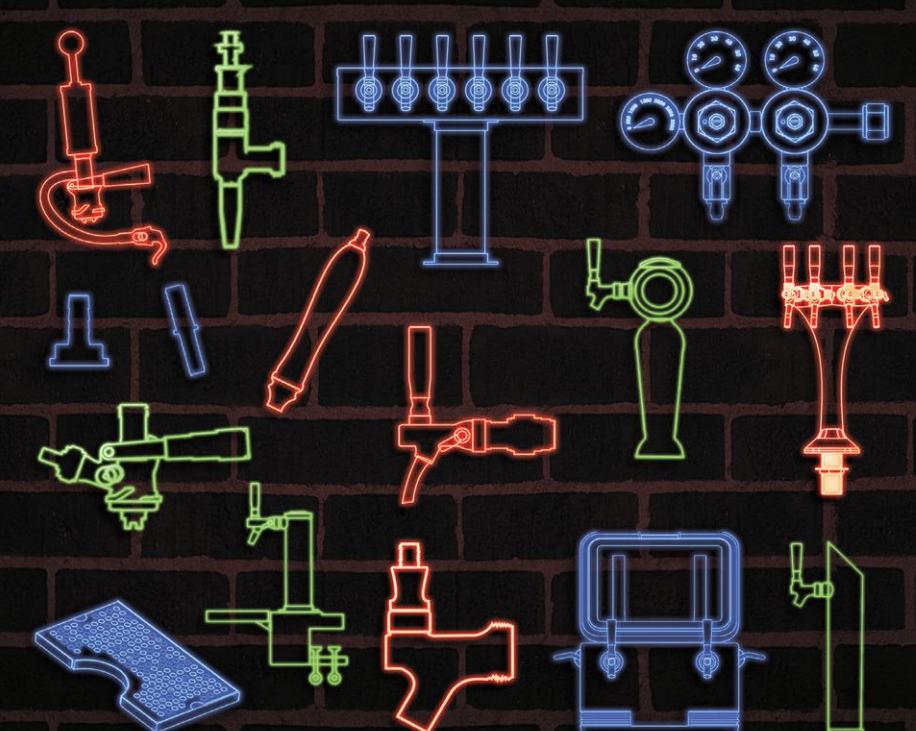
For specialty grains, medium crystal malt is an essential part of the flavor profile. Again, I prefer British malting products. Lighter crystal malts lend a toffee-like sweetness, whereas darker grades add

prune, raisin, and date notes, so lean to your preference here. Crisp makes a fantastic 77°L crystal malt that really fills in the sweetness, heft, and flavor of the beer yet still adds some dried fruit character.

Brown malt is another specialty I feel belongs in brown ale. This is modern brown malt, mind you, not the brown malt of the Middle Ages; it's kilned to a consistent color of 60–70°L and has little if any diastatic power. Both brown and amber malts offer dry, chalky, even slightly astringent toast and bread crust flavors that lend complexity and historical authenticity to British brown ales, but they can easily be overdone. When used



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in excess of about 5 percent of the grain bill they begin to take over and become a bit too noticeable. For the accompanying recipe, I call for 5 percent brown malt, but you could just as easily use 2.5 percent amber and 2.5 percent brown.

For color, UK pale chocolate is perfect for brown ale: lots of dark, toasty balance, but not as roasted- or burnt-tasting as regular chocolate malt, roast barley, or black patent can be. That said, I have had success with de-husked black grains such as Briess Black Prinz malt, Weyermann Carafa, and Patagonia Perla Negra malt from Argentina. The trick is to use them with restraint—again no more than 5 percent of the grain bill combined.

Water is one area that requires extra focus. The mash for an English brown ale, particularly one using chocolate and brown malts, is acidic enough to require some alkalinity. Calcium, chloride, and sulfates can come from the usual sources: calcium chloride and gypsum. Martin Brungard prefers pickling lime to provide alkalinity, so you might consider that route when building your water profile from reverse osmosis.

As long as you keep your mash pH higher than 5.2, you should be good with these parameters. It's worth noting that the gold medal winner for English brown ale at the

2016 National Homebrew Competition, Tre Haydel, used the following water profile:

- Calcium 90 ppm
- Magnesium 4 ppm
- Sulfate 57 ppm
- Sodium 61
- Chloride 76
- Bicarbonate 239 ppm

That (rather high) sodium portion probably came from using baking soda for alkalinity. You really don't need any sodium, but a little won't hurt.

Yeast selection is a little more forgiving, as several good English strains can provide the subtle plum and apple esters that go so well with the complex malt profile of the beer. A strain that doesn't attenuate too far—no more than 80 percent—will keep some residual sweetness in the beer and allow the malt to shine.

I prefer relatively clean strains like WLP002 English Ale Yeast from White Labs, although Wyeast 1275 Thames Valley Ale and Fermentis SafAle S-04 are both great alternatives. White Labs WLP007 Dry English Ale Yeast may dry the beer a bit too far for some palates, but I prefer to use this particular strain to keep things from getting too sweet.

Fans of Samuel Smith Nut Brown Ale and Black Sheep Riggwelter may want to try a Yorkshire ale yeast. These strains can produce a slight buttery character in warm-fermented beers, so start fermentation on the cool side and slowly warm it up after high kräusen to regulate diacetyl. The BJCP guidelines for British brown do not mention diacetyl, so a competition entry may suffer if it's present.

Many commercial English brown ales use adjuncts like flaked maize and sugar to lighten the body of the beer. Five to ten percent flaked maize does lend itself to increased drinkability, but grain adjunct really isn't necessary in this malt-focused beer. However, dark invert cane syrup is another matter: dark brewing sugar can add interesting dark fruit and toffee nuances not available from specialty malts. Golden syrup and black treacle are also good options if you don't want to make your own sugar syrup. Belgian candi is another possibility, but I would recommend keeping the amount relatively low; more than 10 percent might push the finish a bit dry.

Give these underrated beers the credit they deserve! They are extremely versatile and pair well with many foods.

*Amahl Turczyn is associate editor of Zymurgy.*



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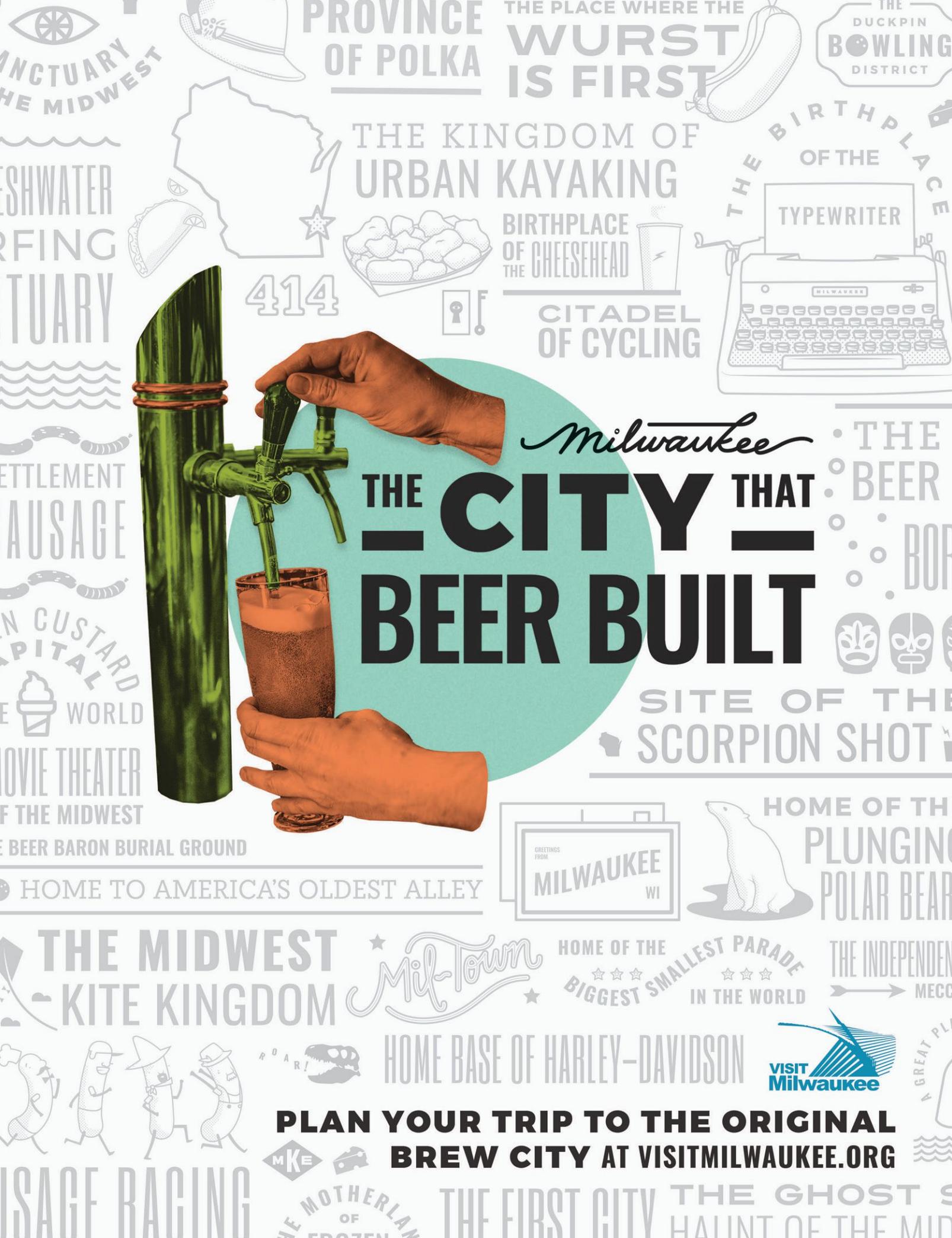
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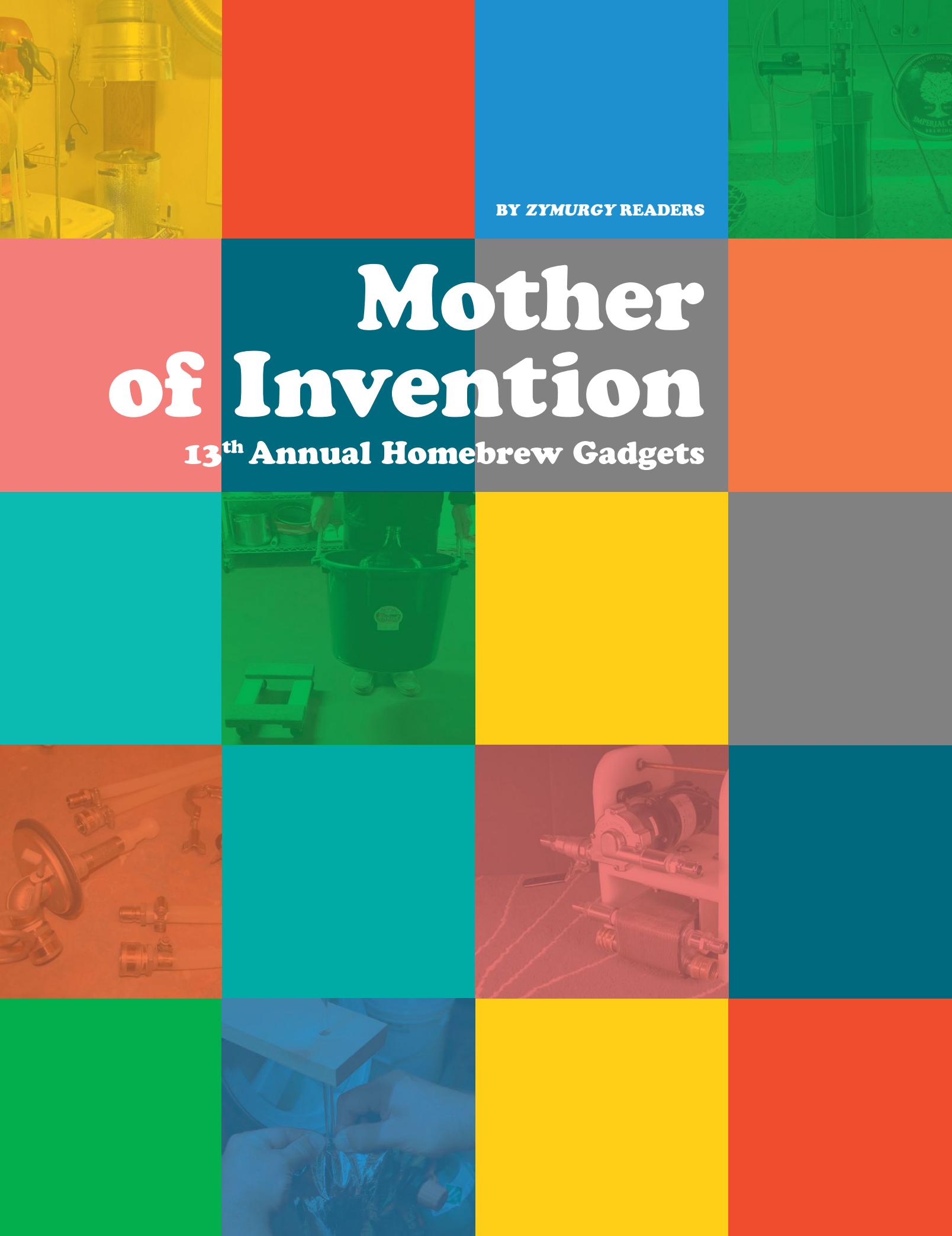
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BY ZYMURGY READERS

# Mother of Invention

13<sup>th</sup> Annual Homebrew Gadgets



The *Zymurgy* Gadgets issue is an annual celebration of homebrewed DIY. Homebrewers have a rich heritage of building, tweaking, and repurposing bits and bobs into the service of a nobler cause. Epoxy mixers turn into inline flow restrictors. A toilet brush mounted to a power drill becomes a keg scrubber. And a length of PVC transforms into a sturdy, affordable draught tower.

Every year, *Zymurgy* readers write in to tell us about the cool toys they've built, and we're proud to showcase more in this, the 13th annual Gadgets issue. There's a gadget here for every budget and every ability. Some are simple, elegant solutions that require nothing more than rearranging items you already have into something more useful and interesting. Others are complex builds that demand a bit of elbow grease and some technical know-how. All of them are guaranteed to help you brew and serve better beer.

Thank you to all who submitted gadgets this year, and keep sending us your stories for the 14th annual issue. And, be sure to check out [HomebrewersAssociation.org](#) and the [AHA Forum](#) for more great gadget ideas.

I converted kegs to keggles based on advice from the AHA Forum and from members of the Beer Alchemist of Coastal Carolina (BAC2) homebrew club. I created a hot liquor tank with a HERMS coil, a mash tun, and a brew kettle with quick disconnects for quickly changing hoses. The system uses a MoreBeer! Ultimate Sparge Arm for sparging.

I built the stand from metal I found at the dump and added wood to mount the pumps and Blichmann Therminator plate chiller. I removed the legs from Edelmetall Brü and Blichmann HellFire burners and screwed them into the stand, along with gas lines I purchased from a local hardware store. Wheels make the whole thing mobile. It's quite a step up from my cooler days. I have been brewing for eight years and continue to look for improvements.

When the beer is ready, I need a place to enjoy my homebrew with friends and BAC2 club members, so I built a bar from discarded pallets, rope lights, and a cooler. Taps are the next step! Thanks to BAC2, the AHA, and *Zymurgy* for continuing to give me ideas for the builds!



## Custom Brew Rig

**Paul Boniface**

Beer Alchemist of Coastal Carolina (BAC2)  
Jacksonville, N.C.



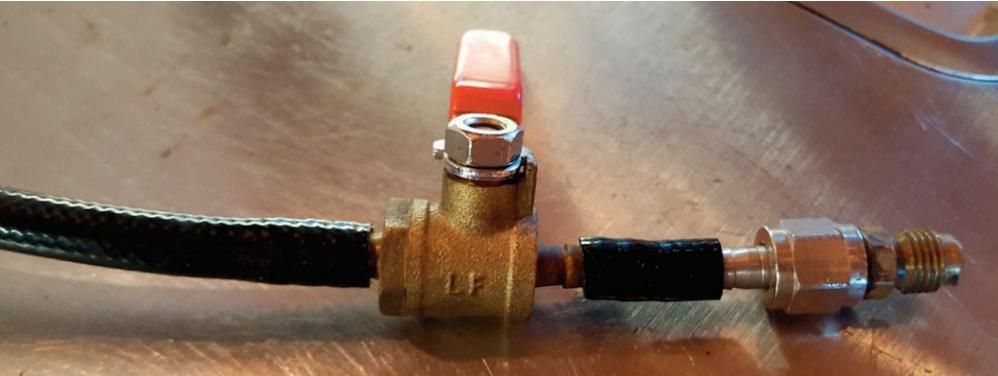
## Handheld Draught Line Cleaner

**Mark Stober**  
Tampa Bay BEERS  
Wesley Chapel, Fla.

I built a draught line cleaner from a common household pressure sprayer. By replacing the spray wand with a threaded adapter that connects to a quick disconnect swivel barb fitting, you can easily attach the sprayer and use it to pump water or keg line cleaner through your draught system lines. This avoids having to use an empty keg and CO<sub>2</sub> to perform the same task, and it is similar in function to commercial draught cleaning systems.

How to assemble and use:

- Purchase a new 1- or 2-gallon household pressure sprayer.
- Remove the spray wand, leaving bare hose on the end of the line coming from the sprayer.
- Install small valve followed by a male threaded adapter that will screw into the female adapter on the draught line.
- Fill the sprayer with water or keg line cleaner.
- Ensure the line valve is closed and pump the sprayer to pressurize it.
- Thread the line into the draught line and, once secured, open the line valve.
- The water or cleaner will now flow through the line when the tap is opened to clean or flush the line.



## Bathroom Inspiration

**Raymond Nonnie**  
Urban Knaves of Grain  
Carol Stream, Ill.

I needed a way to store and carry my oxygen tank, regulator, flow meter, and aeration wand. I stumbled on a toilet paper holder that stores several rolls of toilet paper and has a hook to dispense a roll. It holds my 20-cubic-foot oxygen tank perfectly, and I bought some metal plates to secure the flow meter and connected the air tubing. The hook is great for carrying my oxygenation system around, and I can coil the tubing around the hook when it's in storage. I disconnect the aeration wand when not in use.



When I made my first keggle, I used weldless bulkheads for all my connections because it was relatively easy to do and worked just fine. What I really wanted though, was welded Tri-Clamp (also known as Tri-Clover) fittings. These are easier to clean, are less likely to harbor bacteria and other nasties, and allow for changeable configurations. Problem is, I can't weld, and stainless steel welding can be costly and requires special equipment and knowledge.

Then I stumbled upon a HomebrewTalk.com thread that showed how to solder stainless steel. Now, this is a little more my speed, so I jumped in. I procured a decommissioned half-barrel keg, cut out the top, and drilled a pilot hole in the new keggle. I then used a 13/16" knockout punch (a tool used to punch a hole in sheet metal: see Figure 1) to make the hole for the 1" Tri-Clamp ferrule. The hole can also be made using a step bit, cutting oil, and a slow, steady hand with a power drill.



Now I had to create a "dimple" in the hole going from the inside of the keggle outward that was the same diameter as the ferrule, so I got the parts necessary to make a homemade swaging tool (see Table 1).

When I got the parts, I discovered that the reducing coupling's inner diameter was slightly smaller than the 5/8" bolt, so some filing and grinding with my Dremel tool was in order. I also had to widen the 1/2" washers to 5/8" using a step bit. Figure 2 shows the completed assembly.



You can't see them in the picture, but the 1/2" washers are situated inside the coupling on the right side, to help center the bolt. Time to swage the opening. I placed the swaging tool in the 13/16" hole as shown in Figure 3.



## Tri-Clamp Fittings for Keggles

**Jim Mayhugh**  
Las Vegas, Nev.

TABLE 1: PARTS LIST FOR HOMEMADE SWAGING TOOL

McMaster-Carr part number	Description
45605K711	Standard-Wall Butt-Weld Unthreaded Pipe Fitting: 304/304L Stainless Steel Straight Reducer, 3/4" x 1/2" Pipe Size
4335T64	Low-Pressure Socket-Connect Unthreaded Pipe Fitting: 304 Stainless Steel, Straight Connector, 1" Pipe Size
92620A810	Zinc Yellow-Chromate Plated Hex Head Screw: Grade 8 Steel, 5/8"-11 Thread Size, 4-1/2" Long, Fully Threaded
90107A035	316 Stainless Steel Washer for 5/8" Screw Size, 0.688" ID, 1.5" OD
90107A033	316 Stainless Steel Washer for 1/2" Screw Size, 0.531" ID, 1.25" OD
93827A253	High-Strength Steel Hex Nut: Grade 8, Zinc-Aluminum Coated, 5/8"-11 Thread Size

Using either 15/16" wrenches or sockets, slowly force the reducing coupler through the hole until the diameter just matches the outer diameter of the 1" ferrule. If you go a little too far, the dimple diameter can be reduced by lightly tapping the dimple with a hammer. Check the fit and then prepare to solder the ferrule in place.

First, prep the area with sandpaper and make sure that all mating surfaces are clean and sanded to ensure a good solder joint. Stainless steel requires a special flux and 4-percent-silver solder to provide a solid joint. I picked up a few packages from my local AirGas Store for about \$10.

Place the ferrule into the hole, making sure that the ferrule sits flush or just slightly below the inside surface of the keggle. Place about three turns of the solder in the area between the dimple and the ferrule and apply some flux. The flux is primarily hydrochloric acid, so be very careful not to get any on you, your clothes, or anything valuable.

Now gently heat the area between the ferrule and the keggle with a standard propane torch. As the joint heats up, the flux will start to bubble, smoke and turn brown, and the solder will finally melt. Be very careful not to burn off the flux, and do not inhale the fumes (this should be done outside or in

a well-ventilated area). As soon as the solder melts, remove the heat and allow the joint to cool naturally. Once cool, wipe off any excess flux with a damp rag (wear gloves; remember—hydrochloric acid), inspect the joint, and test for leaks. The joint should look similar to Figure 4:



So far, I've added two Tri-Clamp ferrules to this keggle: one for a ball valve and the other for a thermowell or thermometer. I've also used the same concept to create a 10-gallon carboy from a stainless-steel milk can, a 25-gallon bottom-drain mash tun, and a removable 16" thermowell. The whole process, from keg to keggle, took a few hours and was well worth it. Just remember to take your time, have the right equipment, and be careful.

## Bottle Filler Mount

Steve O'Brien  
Moorpark, Calif.



### KEG THEFT

Keg theft is a serious issue for the brewing industry. The only legal way to acquire a used brewery keg for homebrew use is to purchase it from the brewery whose name appears on the keg. A deposit placed on a keg does not constitute a purchase of that keg. Learn more at [HomebrewersAssociation.org/KegReturn](http://HomebrewersAssociation.org/KegReturn)

## Bike Shed Brewery

Todd DeLong  
Cutchogue, N.Y.

My kids were grown and out of the house, so I commandeered their old 6' × 9' bike shed and converted it into my new tiny house homebrewery. I was looking for a larger boil kettle, saw that others had successfully converted kegs into boil kettles, and decided to take that route. Eventually I found an inexpensive stainless-steel equipment stand online and added some wheels so I could move it around.

With all that stainless steel, my old turkey fryer burner looked pretty shabby, so I sprung for a new Blichmann burner. After spending a year lifting heavy kettles on and off the burner, I decided to get a second burner. The weight of two large vessels on the table made it start bending inward, so I added an aluminum T-slotted structure to support the weight and serve as a framework for mounting future equipment.

The brew stand is mobile, so I can roll it out of the shed during the hot summer months to brew. The shed evolved as well, with built-in water inlets and outlets for the chiller, a filtered-water inlet for brewing, and a slop sink for cleaning during the day. The water I use on brew day is captured in a large landscape tub behind the shed and reused to water my plants.

I tiled the building using ceramic tiles that went on clearance or overstock at the big box store. The tiles make it easy to clean up at the end of the day: I mop down the walls and floor with a little bleach and water, and I'm ready to go for next time.



With safety in mind, I put together this carboy transport system. It consists of a muck tub, towel, and furniture cart. The idea is that you can safely roll the carboy wherever you need it, and you can carry it a short distance if required. If you drop it, the tub and towel help prevent damage, but if it does break, the mess is self-contained. I have not tested it by dropping it, but it did tip over once and nothing happened. The key is make sure the carboy and tub are centered on the cart.

## Carboy Cart



**David Scheil**  
**CRAZE**  
*Cedar Falls, Iowa*

## Ultimate Fridge A

**Chad Irwin**  
*Carlsbad, Calif.*

Longing for something different than a keezer, I purchased a used commercial Frigidaire glass door refrigerator off Craigslist and converted it into an incredible kegerator and bottle fridge. It holds four 7.5-gallon SABCO kegs and still has space for two shelves that hold up to 100 bottles.

The trickiest part of this conversion was that the heat coils run like a snake through the sides. I rented a thermal heat camera from Home Depot to locate exactly where they are so as not to not drill into them when installing the faucet shanks, which would have rendered the fridge useless.

It is so rewarding to see my hard work displayed behind glass every time we enter the room, and I have to say this gadget looks so cool, my wife even likes it inside our home!

# Ultimate Fridge B

**Bobby Cheek**  
Chicken City Ale Raisers  
Jasper, Ga.

I bought a used upright freezer for \$100 so I could start making lagers. I had only owned chest freezers before, so I was unaware that some upright freezers had coils running through the shelves and that the shelves were not removable. I didn't discover this until after I had brought it home to my brewery. I was sad to say the very least. What was I going to do? More importantly, how would I explain to my wife that I had purchased a pointless used freezer?

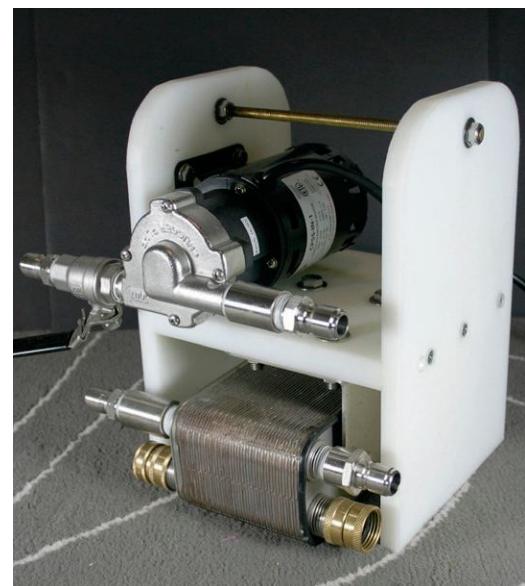
I remembered having watched online DIY videos of people making fermentation chambers from mini-fridges, and I thought that I could just scale it up and make one the size of my new used freezer. It's 8' long, 2'4" wide, and 5'4" tall (2.4 m × 0.7 m × 1.6 m), for a total volume of 60 cubic feet (1.7 cubic meters). Dual temperature controls hold the cold at 35°F (1.7°C), and it has worked great this summer in Georgia!



# The Chump

**Michael Bergstrom**  
*El Sobrante, Calif.*

My submission is a caddy to hold my chiller and pump. I call it the Chump. It's three pieces of 1/2-inch, food-grade, HDPE-cutting-board material that I screwed together in an H configuration—basically two sides with a shelf in the middle. A threaded rod at the top keeps the whole piece sturdy and serves as the handle. I mounted the pump on top of the shelf, and the chiller hangs from beneath. When I'm done, the whole caddy tilts back so that the chiller is in the correct position for sanitizing. Setup only takes a few minutes, and there's less clutter around my brew kettle.



I use a rotating spray nozzle to clean and sanitize my conical fermenter. The fermenter hatch is the same size and shape as a Cornelius keg lid, so I drilled a hole in an old Cornelius keg lid and installed a 1/2" bulkhead and a couple of fittings to attach a spray nozzle to the inside of the fermenter lid. The handle clamp legs on the keg lid needed to be trimmed down a bit to get a tight fit.

To clean or sanitize the fermenter, I put in several of gallons of caustic cleaner or sanitizer, seal the lid, and use a pump to circulate it through a loop from the bottom dump port, through my wort chiller, and back into the top of the fermenter. The spray nozzle rotation provides 360° coverage on the inside of the fermenter, which makes cleaning and sanitizing a breeze on brew day.

Gathering and joining the fittings is trivial and will vary depending on your system. The spray nozzle is a Lechler 500.191 1/2" BSPP female, available for less than \$60 from McMaster-Carr (part #71445T84). That seems like a lot of money, but it does a lot of work and can be plumbed into the top of any small, enclosed vessel. I am currently working on plumbing the nozzle into the top of my mash tun.

If you try this, make sure your pump has enough power to drive the rotating nozzle—if you don't have a high enough flow rate, the spray ball will not rotate. I use a March 809-HS pump, which offers a little more than 4 gallons (15.1 liters) per minute of unrestricted flow with 3 gallons (11.4 liters) in the bottom of my fermenter.



## Exhaust Hood

Jim Polster  
Carmel, Ind.



I hooked up two Broan 30" under-cabinet hoods for ventilation and connected the hood to a bicycle lift so I can raise and lower it.



## Brewcifer

Corey Guilbault  
Norwalk, Ct.

My brew rig, which I call Brewcifer, is designed to save space while providing convenience on brew day. It collapses down into a garage-corner-friendly tower and opens to form a three-tier all grain setup, complete with a built-in water filter and a small stepping platform to help make hefting the hot liquor tank to the high tower a bit easier. Various hooks provide places to hang paddles and spoons, and two fold-out shelves on the back hold whatever other gear is needed.



I typically dry hop with whole hop flowers, but my local homebrew store was only able to get the varieties I wanted as pellets. Using pellets in secondary can be a real nuisance when it comes time to fill bottles, as bits and pieces of hop pellets can clog the racking cane. I figured if I could use a hop bag in secondary, I might be able to eliminate some of the problem.

The neck of a carboy is pretty narrow for a hop bag, so I solved the problem by sewing small “hop sleeves” from paint strainer bags, which hold about 2 ounces (57 grams) of pellets. I add a couple of sanitized glass marbles to make the sleeves sink and tie on a bit of sanitized dental floss to make it easier to pull them out. The sleeves have essentially eliminated my bottle-filling problem when using pellets for dry hopping.



## Green Sleeves

**Paul Robinson**  
Kona Coast Barley Boys  
*Kailua-Kona, Hawaii*

The materials for this rolling bottle drying rack are pretty simple: an office chair base, 2" PVC, foam pipe insulation, and 5/16" rod. It's about 40 inches (102 cm) high and holds 35 bottles. Foam pipe insulation inside the PVC helps hold the rods in place, and the rods are coated with Plasti Dip to avoid scratching the bottles and prevent rust.



## Rolling Bottle Drying Rack

**Ed Maurer**  
*Brookville, Ohio*



## Process of Induction

Alexander Paris  
*Long Island City, N.Y.*

I gave new life to an induction cooktop that normally only sees use at wintertime hot pot parties. As a homebrewer in New York City, I can only manage 1-gallon batches at a time, and I have found this unit to be perfect for consistent mashing and boiling. A timer lets me multitask on brew day without the risk of over-mashing or reducing the boil. Anything that can both improve the consistency of my beers and simplify brew day is a winner in my book.



## Humulus Lupulus Fresh Packs

James Werner  
Beer Barons of Milwaukee  
*New Berlin, Wis.*

If you buy hops in bulk, it can sometimes take quite a while to use them all, so keeping them oxygen-free is important while storing in your freezer. Here's an extremely simple and effective gadget to help you keep your hops as fresh as possible until you use them all.

Simply fit a short racking cane into a piece of wood through a tight-fitting hole. Attach one end of a hose to the cane, connect the other end to a CO<sub>2</sub> tank, and open the valve with very low pressure. Push the cane end to the bottom of the bag of hops (I use the mylar zipper bags the hops come in, or you can buy them online), close the zipper from both ends, and gently push closed against the tube to inflate the bag. Hold for a few seconds to purge all air from the bag, pull off the tube, squeeze or roll out the excess CO<sub>2</sub>, and seal the bag. Now it's ready to put in the freezer and will be in great condition for your next brew. Cheers!



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## Regulator Saver

Chris Sick  
Lenexa, Kans.

I used to be paranoid that I would knock over my CO<sub>2</sub> cylinder and break a regulator gauge, but no more. This modest wooden crib increases the overturning resistance of your gas system. The materials are probably already lying around your garage.

- 1/2" plywood remnants
- scrap 2×4
- random nails and screws
- generic stain and polyurethane

I sized the caddy for a 5-pound cylinder. The top collar has a 5.5" inside diameter and 9" outside diameter. The base is 12" in diameter, and the total height is 10.75" (9.75" lengths of 2×4 plus the two 1/2" plywood layers). Router to taste.



## DIY Ventilation

Dwain Pannell  
New Market, Ala.

I needed a kettle hood for my laundry room brewery build, and I came across this wash tub with concentric circles on the bottom. All I had to do was choose the size circle I needed, use a Dremel to cut it out, place some tubing split lengthwise around the cut edge, and slide my fan atop the "hood." I used hooks and chains to hang it and ran dryer exhaust ducting to a hole cut in a Plexiglas-covered casement window. Now, when it's brew day, I simply crank open the casement window and turn on the fan.



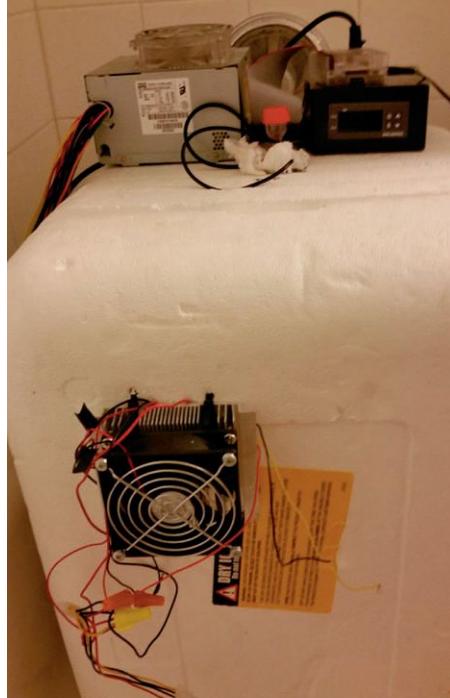
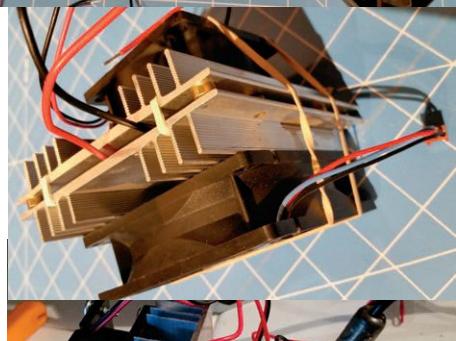
## PARTS LIST

### Fermentation Chamber

- insulated box that can hold a carboy
- Peltier-based thermoelectric cooler unit
- computer power supply with 12-volt leads
- temperature controller

### Thermoelectric Cooler

- Peltier thermoelectric chip
- 2 x 12-volt computer cooling fans
- 2 x aluminum heat sinks
- thermal grease
- mounting hardware: long bolts and nuts



## Fermentation Chamber with a Thermoelectric Cooler

Kirk Bigger

Dukes of Ale

Albuquerque, N.M.

In the Jan/Feb 2017 Zymurgy Gadgets issue, Gary Schwartz of the OkBrewers from Kelowna, B.C., showed how to use a thermoelectric chiller with a steel conical fermenter. While many homebrewers may not have a stainless steel conical fermenter, we can still use Peltier-based thermoelectric coolers for fermentation temperature control.

I used a recycled Styrofoam box that fits an entire carboy and cut a hole for the fermentation lock (you could also build a custom chamber from plywood and insulation). I cut a hole in the box and mounted the thermoelectric cooler unit on the side with the cold side facing into the box. I powered the cooler unit using the 12-volt leads from an old computer power supply. Be sure to follow the wiring instructions with your unit, but typically follow color-to-color (red-to-red, black-to-black, etc.). I used a temperature controller to turn the computer power supply on and off.

When attaching the Peltier-based thermoelectric cooler to the box, I found that mounting on the side worked better. I first tried mounting to the top and noticed the cool side of the chip condensed moisture and dripped water onto the fan below. Putting it on the side allowed condensation to drip down and away from the fan.

You can buy a pre-assembled Peltier-based thermoelectric cooler from your favorite online retailer, or you can make your own. Mount aluminum heat sinks on both sides of a Peltier chip, using thermal grease between the contacts of the Peltier chip and the heat sinks. Mount computer fans on the outside of both heat sinks. Connect the wires to a 12-volt power supply. Use proper mounting hardware to hold the system together.

Keep in mind all safety precautions when working with electricity, especially around wet things like a full carboy!

Using cheap Arduino sensors, I have built a CO<sub>2</sub> tank level monitoring device and an automated natural carbonation (spunding) device.

The CO<sub>2</sub> tank level is shown in real time using logic that accounts for tank temperature, so it is dynamic in its levels. I have also written a script that emails me when the tank is getting low or pressure is dropping too fast (leak detection). No more wondering if you have CO<sub>2</sub> issues or a nearly empty tank!

The natural carbonation via spunding uses an Arduino, a pressure sensor, a solenoid valve, and a needle valve. I also wrote a script that is dynamic and calculates the appropriate pressure from temperature and the desired carbonation level.



Tripp Shenton  
Newark, Del.

## Ferm Cam



# Automatic Spunding and CO<sub>2</sub> Monitoring

Bryan Rabe  
River City Brewers  
Hanover, Minn.

**ON THE WEB**  
See Bryan's system in action by following the links at [HomebrewersAssociation.org/jf19](http://HomebrewersAssociation.org/jf19)



Once the fermenter is in the fridge or closet, you want to check it a few times a day to see how it's doing. I used to check it before I left for work and again as soon as I got home. I was always a little leery about brewing just before I needed to travel, for fear that something might happen while I was gone that would ruin the batch. But I found a handy way to solve that problem. It's not a new technology, just a use for a ubiquitous device.

I purchased an inexpensive Wi-Fi camera (we had used this model at work and it worked well). I placed it on the shelf in my fermentation fridge, and now I can keep an eye on the carboy and fridge temperature from anywhere via the included app. I was initially concerned that the camera wouldn't connect to my Wi-Fi from inside the fridge, but that's not a problem at all. The camera has infrared "night vision," so I can spy on the carboy even when the inside light is off.

It's great for when I am traveling, at work, or even lying in bed at night! You can take pictures and video with it. You will notice that I also hang a thermometer so I can monitor the temperature inside the fridge.

Finally, if I can't connect to the camera, it could be a sign that my house has lost power, which happens on occasion, and that my temperature control could also be off.



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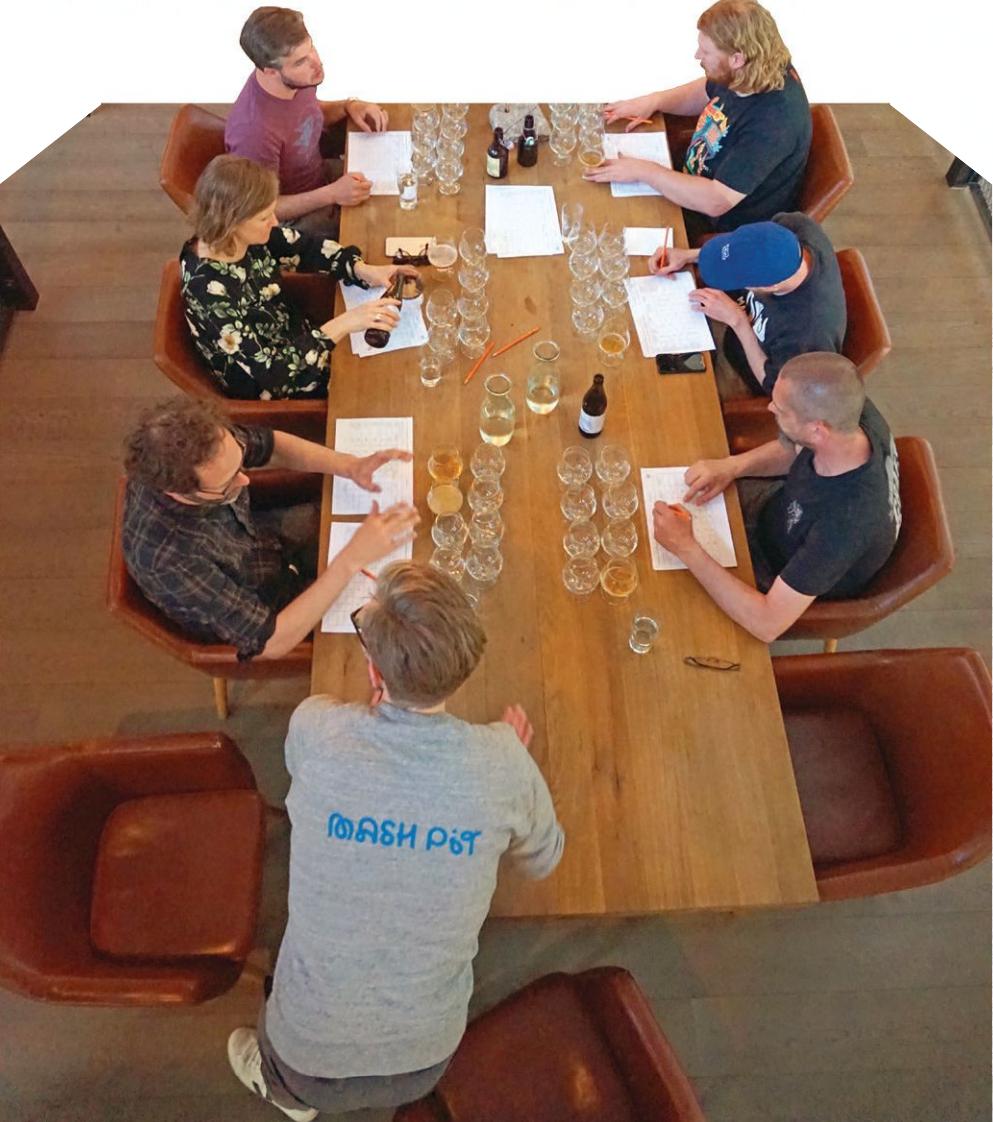
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# HEIMBRAU

A Look at Berlin's Homebrewing Community

By Aaron Brussat



never expected to attend, much less judge, a homebrew competition while on my honeymoon. It just happened that way. Call it kismet.

We got off the U-Bahn, Berlin's subway system, at the Warschauer Straße station in the hip Friedrichshain neighborhood. Thousands of people crammed the sidewalk drinking cheap bottles of Rothaus, Sterni, and Augustiner lagers. DJs and rappers cranked beats on the street and in storefronts. Just south of our hotel, a line of police cars and SWAT tanks was herding the mass of people north to the train station. We weren't in any danger, just victims of culture shock.

An hour later the tumult had quieted down, and that night the streets looked like a brewery and a dumpster had brawled. The next day, Berlin was hungover.

That was May 1, May Day, Labour Day in Germany. Just a few hours before our arrival, we had been in Dresden mingling with an older crowd in the outdoor market watching a Maypole dance, far tamer than the demonstrations a couple hours north. Thankfully, the riots, looting, and police violence that marred the holiday in the late 80s have subsided.

## LOCAL WATERING HOLES

My wife Liz and I walked into a beer bar called Protokoll. The bartender greeted us in perfect English; he was Canadian and quick to note the keg of Cascade Bourbonic Plague 2015 on tap when I asked what was

hot. His second suggestion was a beer called Cloud 9, a hazy pale ale contract brewed by The Mash Pit at a local brewery. Fortunately, Mash Pit brewers Christian and Tim were sitting right next to us at the bar.

Chance meetings like that become more likely when good beer is involved, and Berlin's scene is tight enough that everybody knows everybody else. The support, positivity, and pride of brewers in their city and their beer is palpable.

At Kaschk, another craft beer bar in the Mitte neighborhood (the only pale lager on tap was a delicious Schönramer Pilsner), the bartender suggested I try Lenny's Summer Pale. The bartender was Lenny (full name: Christian Lennart), and he'd been contract brewing beer just 5 kilometers (3.1 miles) from there. The beer was lovely and golden, with light apple esters and German and Polish hops that provided citrus and herbal tea aromas.

Berlin is Germany's largest city, with around 3.7 million people. For breweries, it is quite underserved. However, the craft beer scene is five going on fifteen; brewers seem to have taken the lessons of German brewing tradition and American style innovation and mashed them together, so to speak, to produce beer that is adventurous and refined.

Of course, there are traditional operations as well. The last draught beers I had were at Eschenbräu. Nestled under a towering maple in the courtyard of an apartment complex, the below-grade brewery

produces unfiltered lagers and wheat beers to serve from the tank. Its freshly tapped Maibock was stunning, with a rich copper color and graham cracker-brioche malt character backed up with spicy hops in the finish for balance.

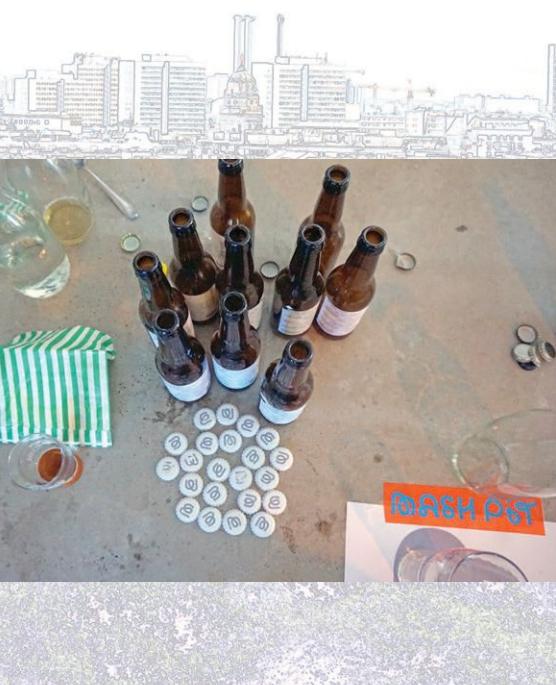
More breweries are opening in Berlin, and contract brewing is a common way for a brewer to get a foot in the door. Enter The Mash Pit. Conceived many years ago by Christian Gläser, an Englishman, and Tim Hauke, The Mash Pit will bring a centuries-old rural brewing concept to the big city. Although still seeking a location at press time, Gläser was assured that the operation would begin soon.

## BRINGING IT ALL BACK HOME

"We're interested in shaping a community that shares a similar spirit where recipes are exchanged and beers are tasted amongst each other," says Gläser.

"We're also looking to introduce a 10-hectoliter brewhouse for those who want to professionalize and up their game. This bigger brewhouse we'll also be using ourselves to brew beers for our adjacent taproom. Essentially, the whole thing isn't new—our inspiration and roots of the concept come from quite an old tradition in southern Germany, where so-called commune brewhouses provided the beer for all of the village's inhabitants."

This tradition, called Zoigl, is the original brew-on-premises concept. Zoigl is a brewing tradition that goes back



Left: Judging the final round at Stone Berlin.

Middle: Color-coded crown caps let attendees vote for their favorites.

Right: The public tasting at Stone Berlin.





to the 15th century and lives on in the Oberpfalz region of Germany east of Nürnberg. They are rustic brewhouses owned collectively by a group of families or the community.

Brewers pay a fee to brew beer at the Zoigl house and then ferment it at home and serve it to the public. A *Zoiglstube* (pub/house) is open for business when the traditional brewer's six-pointed star is hung over the door.<sup>1</sup>

Because housing in Berlin rarely offers anything resembling a yard or patio, much less a garage, homebrewers are often relegated to apartment stoves for brewing and clever placement of fermenters to achieve any sort of temperature control.

The Mash Pit will offer a solution and an opportunity as a fully-stocked brew-it-yourself operation. Up to six people can join in a membership and brew and ferment in batches of 50 to 100 liters (13.2 to 26.4 gallons). Ingredients will be available on site as well, and the proprietors are hoping to make it a vibrant brewing hub.

## SLOSH! BERLIN

My wife and I do spa days differently. Last time she took the more traditional sauna experience, while I took the U-Bahn south from central Berlin to the Alt-Mariendorf station and walked 20 minutes west through Marienpark, a retired gas storage facility-turned-public park, to Stone Brewing - Berlin.

Stone's renovation of two factory buildings into a large production brewery and satellite location of its magnificent World Bistro and Gardens is an impressive campus. The restaurant takes up two-thirds of a large hangar-sized building and spills out into a lushly landscaped biergarten. Most patrons that day were enjoying their beer and food in the sun, as is customary all over Europe. Inside and up a flight of stairs to an open lounge and event space, Slosh! Berlin was in full swing.

Gläser had previously organized the Berlin Homebrew Competition and wanted to ramp it up. "We gave the whole thing a name in order to establish some sort of branding," he says. Slosh! Berlin took the homebrew competition concept, combined it with a beer festival, and added a people's choice twist.

Homebrewers who registered in time were able to take advantage of malt donated by Weyermann. That incentive surely increased the number of entries, as more than 50 beers were available to sample.

The way the competition was arranged, homebrewers first sampled their beers to the crowd. Each attendee paid €15 (about \$18) and was given a sample glass and five bottlecaps color-coded to a specific table. Although patrons were allowed to sample from any table, the caps served as voting tokens for beers at a specific table with the corresponding color. At the end of public sampling, the votes were tallied, and the winner from each table went on to a best-of-show style judging.

It was a unique opportunity to sample and think about beer, and the people's choice voting method allowed samplers to vote confidently without having to get sloshed trying all the beers. Styles were not pitted against each other for comparison, as each table represented a range of styles. Therefore, votes were cast based on a more intangible drinking pleasure; a communal approach prior to more strict evaluation. The trick was to see whether or not that lined up with the judge panel.

Perusing the tables revealed a smorgasbord, a BJCPlethora of homebrew. Traditional German weizens and lagers were present but were not in the majority. Pale ales were common, many with fruit or herbal additions. Belgian ales and doctored stouts delighted the attendees with intense flavors.

The intimate crowd consisted mostly of homebrewers, some of whom were members of Braufreunde Berlin, a local



homebrew club. Others were from Spain, England, and the United States. A few local brewers were also in attendance.

One homebrewer in the competition was a Bulgarian who lived in Serbia. He had heard about the competition from a friend and decided to make the trek to serve his beer. His entry, a 7% ABV IPA, was bittered with Bravo and Polaris; flavored with Amarillo, Mandarina Bavaria, and Southern Cross; and fruited in the fermenter with mandarin oranges.

Another entrant entreated me to try his "Hipster Sterni" brewed with Cascade hops. Not being a Berliner, the mythos of Sterni, or Sternburg Export, was lost on me. It is, apparently, a bargain basement street drinker that has a reputation for giving hangovers. Ironically, the homebrewed clone had been through a series of unfortunate events with regard to fermentation and did taste like an off-kilter lager with a citrusy punch.

The winner of the previous competition, Dirk Nolte, had brought a Munich dunkel of which he was quite proud—and with good reason, as it displayed a full range of toasty bread notes and finished with a clean and slightly rustic character from the earthy hops.

In a twist of fate, during my chance meeting with Christian at Protokoll, one of the scheduled judges had emailed to say they couldn't make it. I had offered to fill in, and Christian gave me a tentative yes; he was hoping to have a stronger female contingent in the panel (I don't fit that bill). On the day of, I got the official recruitment.

## FINAL ROUND

The tasting portion ended at 5 p.m. when attendees were evacuated from the tasting area and votes were quickly tallied. Eight beers were sent along to receive the formal treatment. The judges assembled around a conference table and received judging sheets and tulip glasses. The beers were

Brew  
This!



# Plan B

## Lime Basil Pale Ale

Recipe courtesy Ralf Borau

The main idea for this recipe was to create an easy-to-drink summer beer with a refreshing lime and citrus touch and noticeable basil aroma (which is well balanced with the lime). It has a light body, light color, not too much alcohol, and noticeable but not overwhelming lime, citrus, and basil aromas. There is noticeable bitterness, even increased a bit by the lime peel, and you'll find fruit aromas from the Mosaic, Centennial, and Chinook hops.

**Editor's note:** Achtung! Default measurements in this recipe are metric, with US customary units provided in parentheses.

**Batch volume:** 25 liters (6.6 US gal.)  
**Original gravity:** 1.048 (12.0°P)  
**Final gravity:** 1.008 (2.1°P)

**Color:** 12 EBC (6 SRM)  
**Bitterness:** 44 IBU  
**Alcohol:** 5.3% by volume

### MALTS

4.5 kg (9.9 lb.) pale ale malt  
500 g (17.6 oz.) wheat malt

500 g (17.6 oz.) Best Malz Red X malt  
200 g (7.1 oz.) Weyermann CaraRed malt

### HOPS

15 g (0.53 oz.) Chinook @ 60 min  
15 g (0.53 oz.) Centennial @ 60 min  
10 g (0.35 oz.) Chinook @ 15 min  
10 g (0.35 oz.) Mosaic @ 15 min  
20 g (0.71 oz.) Mosaic, whirlpool 10 min

10 g (0.35 oz.) Centennial, whirlpool 10 min  
25 g (0.88 oz.) Chinook, dry hop 7 days  
35 g (1.23 oz.) Centennial, dry hop 7 days  
35 g (1.23 oz.) Mosaic, dry hop 7 days

### YEAST

22 g (0.78 oz.) Mangroves Jack's M44 US West Coast

### ADDITIONAL INGREDIENTS

3 g (0.11 oz.) Irish moss @ 10 min  
25 g (0.88 oz.) basil, whirlpool 10 min  
12.5 g (0.44 oz.) lime zest, whirlpool 10 min  
6.3 g (0.22 oz.) grapefruit zest, whirlpool 10 min  
6.3 g (0.22 oz.) lemon zest, whirlpool 10 min

Vodka tincture  
Soak 12.5 g (0.44 oz.) lime zest, 6.3 g (0.22 oz.) grapefruit zest, and 6.3 g (0.22 oz.) lemon zest in a small amount of vodka for 7 days, then discard the solids and add the infused vodka to secondary.

### BREWING NOTES

Mash in with 17 liters (4.5 gal.) of water and hold for 60 minutes at 63–64°C (145–147°F) for saccharification. Heat mash to 72°C (162°F) and hold for 20 minutes, then mash out at 76°C (169°F). Sparge with 21 liters (5.5 gal.) of 78°C (172°F) water.

Boil for 90 minutes, adding kettle hops as indicated. Add whirlpool hops and additional ingredients, whirlpool for 10 minutes at 90°C (194°F), and then chill wort to 19°C (66°F).

Pitch yeast and ferment for 7 days at 19°C (66°F). Prepare a vodka tincture with the indicated citrus zest, rack beer to secondary, and add dry hops and tincture. Condition in secondary for 7 days.

Bottle or keg with 2.3 vol. (4.6 g/L) of CO<sub>2</sub>.

### EXTRACT VERSION

Substitute all but 500 g (17.6 oz) of the pale malt with 2.8 kg (6.17 lb) pale malt extract syrup. Mash remaining grains at 64°C (147°F) in reverse osmosis water for 45 minutes. Drain, rinse grains with reverse osmosis water, and dissolve extract in the resulting wort. Proceed as above.

passed around one by one and judged like a best-of-show round. The transition created some chaos with timing, but the attendees had gone downstairs and ordered

drinks, and the judges got to know each other while the organizers hustled.

The language barrier made it difficult to understand what most of the other judges



said about the beers. Thomas Tyrell, head brewer at Stone, took the lead for the discussion. A couple of the entries exhibited rough or incomplete fermentations; those were knocked out quickly. Some of the other beers had all the right parts but were not in balance.

Discovering the best-of-show winner by consensus is always a surprise. The winner, we all agreed, was a pale ale called Plan B with lime zest and basil brewed by local homebrewer Ralf Borau. The special ingredients were evident in the aroma and flavor but were tucked away into a restrained citrusy hop note in the finish. The beer will be brewed at Stone as a collaboration with Borau and BRLO Brwhouse, another Berlin craft brewery.

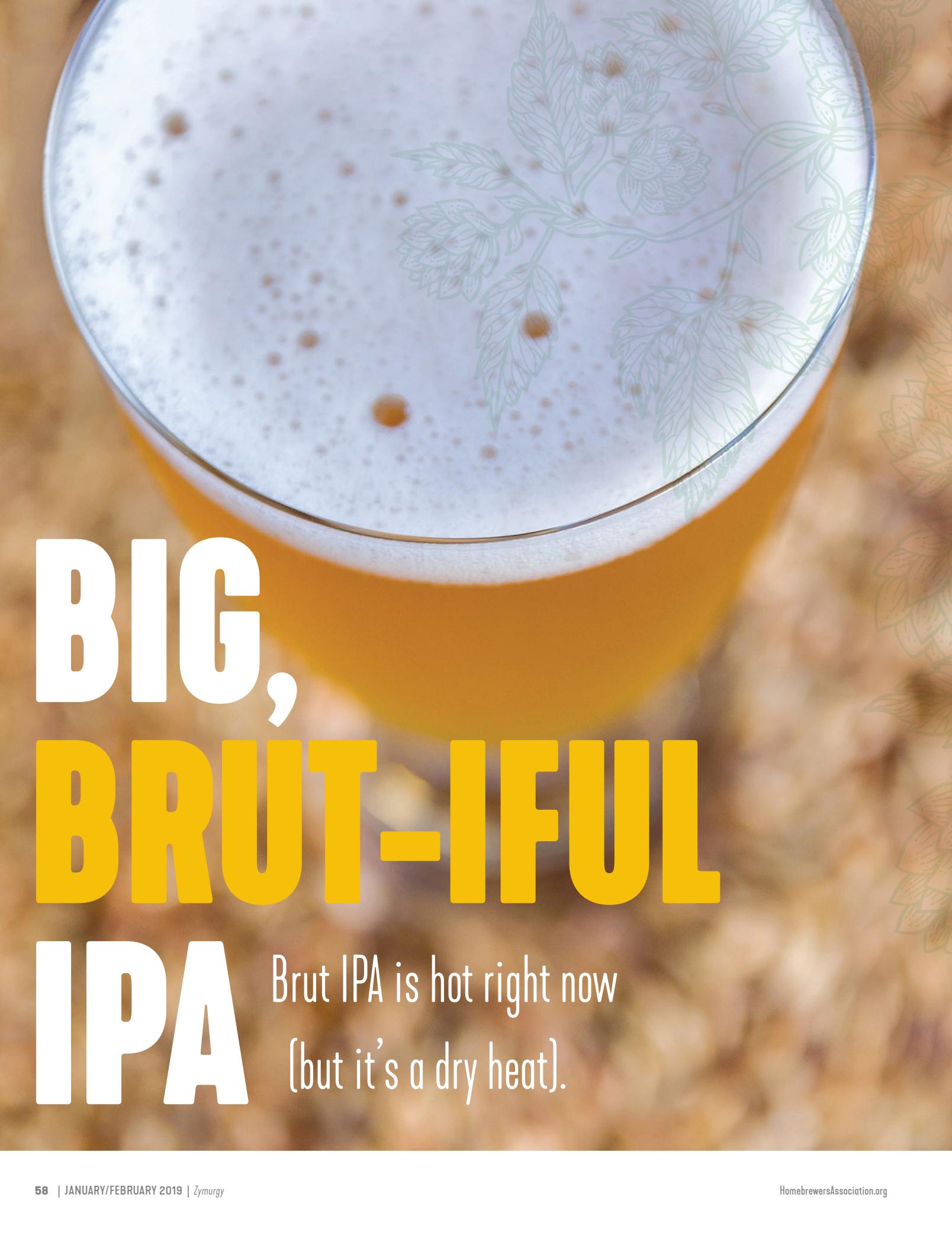
Immediately after the judging finished, the remaining attendees and homebrewers were brought back upstairs, the judges were introduced, and the winners were called up to receive their award certificates and prizes. An Australian company called iKegger and a German online homebrew supply shop called Hopfen und Mehr donated prizes for all the people's choice winners.

Slosh! Berlin fits the city well. It is an inclusive event that promotes homebrewing as a fun and competitive social hobby. The efforts of The Mash Pit to enhance this community are paying off before it's even open, which heralds good beer karma when the first wort hits the kettle.

### RESOURCES

1. Taylor, Barry. An Introduction to the Tradition of Zoigl Beer, English translation. zoiglbeer.de. August 2016.

**Aaron Brussat** lives in Eugene, Ore. He is a longtime homebrewer, editor of Northwest Brewing News, a BJCP National judge, and Certified Cicerone. But that's not all.

A close-up photograph of a glass filled with a golden-yellow beer. A thick, white head of foam covers the top. A single hop cone is visible in the foam. The background is blurred, showing more hops and the glass's rim.

# BIG, BRUT-IFUL IPA

Brut IPA is hot right now  
(but it's a dry heat).



“  
The basic idea is to brew a dry, Champagne-like beer with loads of hop aroma.

By Chris Colby

PA is the most popular style of craft beer right now, and brewers are continually adding new twists to it. Yet another form of IPA, called brut IPA, emerged in San Francisco in 2017. First brewed by Kim Sturdavant of the Social Kitchen & Brewery, this beer is dry, light in color, and heavy on hop aroma.

Brut is a term used to describe the level of sweetness in sparkling wines. Brut wines are dry, intermediate in sweetness between extra dry and extra brut, the driest type. (Some wine writers add another level of dryness, brut zero or brut nature, at the bottom of the scale.) The beer is popular at Sturdavant's brewery, and brewers around the country are trying their hand at it. The basic idea is to brew a dry, Champagne-like beer with loads of hop aroma.

I spoke to Sturdavant about brut IPAs and also consulted Mitch Steele. Steele's 2012 book *IPA: Brewing Techniques, Recipes and the Evolution of India Pale Ale* covers the origins of India pale ales through modern methods of production. He has recently brewed a brut IPA at his new Atlanta brewery, New Realm Brewing Company, and says that the idea does not stray too far from the traditional concept of an IPA. Like Sturdavant, Steele reports that his customers like it.

#### ENZYME MAGIC

Brewers of brut IPA achieve such a dry character by adding an exogenous enzyme, amyloglucosidase, to the fermenting beer. This enzyme degrades complex carbohydrates into glucose residues, which are then consumed by yeast. The resulting beer has a very low concentration of residual carbohydrates and contains ethanol, which has a specific gravity of 0.794. Consequently, brut IPAs can finish fermentation under 0° Plato (1.000 specific gravity), which is the density of water.

Amyloglucosidase binds to the non-reducing end of amylose, maltotriose, or maltose and catalyzes the release of a glucose residue. (It is similar in action to beta amylase, which attacks the non-reducing ends of amylose strands and releases a maltose residue.) Commercially, amyloglucosidase is used in the production of high-fructose corn syrup. The enzyme can be added in the mash, but it produces drier beers when added during fermentation.



In his brewery, Sturdavant uses Amylo 300, a product distributed by Brewers Supply Group (BSG), but White Labs WLN4100 Ultra-Ferm can also be used. Both are liquid preparations of the enzyme. Powdered preparations can be found on websites that cater to distillers. The gas-reducing dietary supplement Beano contains a different enzyme (alpha-galactosidase) that has a similar effect on carbohydrates. (Beano also contains the enzyme invertase, which splits sucrose into its two components, glucose and fructose.)

### LIGHTLY COLORED MALTS AND ADJUNCTS

The grain bill for a brut IPA should consist of a light base malt and perhaps a very lightly colored adjunct. Appropriate base malts include American pale malt, English pale malt, and Pilsner malt. Brewers should avoid adding crystal or caramel malts to the recipe as these add unwanted color and body. Flaked maize or flaked rice—used at up to 40 percent of the grist—can lighten the color of a brut IPA. This level of adjunct usage, combined with a light-colored base malt, can yield a beer with a color as low as 3 to 4 SRM. Alternatively, you could use corn grits or rice, although you would need to employ a cereal mash. If you use starchy adjuncts, your base malt should include some American pale malt or brewer's malt for the extra diastatic power these lend.

Brut IPAs finish fermentation at a low specific gravity, so brewers should choose

the original gravity carefully so that the resulting beer is not too alcoholic. Overly alcoholic beers have an unpleasant "hot" character to their flavor profile. Mitch Steele recommends that brewers formulate their brut IPA recipe so that the beer ends up with an alcohol percentage in the 5.5 to 6.5% ABV range, or perhaps as high as 7.0% ABV. A beer with a starting gravity around 1.052 (13°P) that finishes just under 1.000 (0°P) will have an ABV around 6.5%—in the range recommended by Sturdavant and Steele and also in the middle of the alcohol range specified in the BJCP guidelines for American IPA.

### THE BRUT-AI MASH

Normally, when brewing a dry beer, a brewer would employ either a long mash at a low temperature in the saccharification range or a step mash with a lengthy rest in the beta amylase range. A 90-minute mash at 148 to 150°F (64.4 to 65.6°C) will yield a highly fermentable wort. A step mash that starts with a 20-minute to 2-hour rest around 140°F (60°C) will produce an even more fermentable wort.

However, cast (unboiled) wort does not need to be highly fermentable because the added enzyme will further degrade residual carbohydrates during fermentation. As such, you can simply rest in the lower part of the saccharification range—between 148 and 153°F (64.4 to 67.2°C)—until an iodine test returns a negative result, and then mash out and proceed to run off the wort.



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You can add the enzyme in the mash if you'd like. However, there are a couple of considerations to keep in mind. Like beta amylase, amyloglucosidase is vulnerable to heat. Additionally, a thick mash inhibits the enzymes' ability to float around and encounter new substrates. In practice, adding the enzyme in the mash yields a beer that finishes at a higher specific gravity than one in which the enzyme is added during fermentation.

Sturdavant reports that beers with the enzyme added during the mash finish at a specific gravity around 1.008, whereas those with the enzyme added during fermentation finish around 1.000. Steele also cautioned that adding the enzyme in the mash produces wort that is high in glucose but low in maltose, which could lead to abnormalities in the fermentation.

One approach is to mash in at 140°F (60°C) with a mash thickness of around 2 quarts of water per pound of grain (4.2 L/kg). Stir in approximately 0.02 fluid ounces (0.7 mL) of the enzyme, assuming a reasonably sized grist for a 5-gallon (19 L) batch of beer. After a 20-minute rest, ramp the temperature up to 152 to 154°F (66.7 to 67.8°C) for around 40 minutes, and then mash out. Afterwards, finish brewing the beer as you normally would.

Brew  
This!



# I am Broot (All-Grain)

Brut IPA

This is a dry, crisp brut IPA featuring a blend of classic American hops. Replace these varieties with your favorite hops to take this in a different direction, or try the tropical hop blend in the recipe for A2 Brew Tay also accompanying this article. High carbonation enhances the sensation of dryness and launches the hop aromas out of the glass. The yeast has a lot of work to do, so an adequately sized, healthy yeast starter is a must.

**Batch volume:** 5 US gal. (18.9 L)  
**Original gravity:** 1.049 (12.2°P)  
**Final gravity:** 0.998 (-0.5°P)  
**Efficiency:** 75%

**Alcohol:** 6.7% by volume  
**Bitterness:** 23 IBU  
**Color:** 3.5 SRM

## MALTS AND ADJUNCTS

3.5 lb. (1.6 kg) US 2-row pale malt  
or brewers malt  
2 lb. (910 g) German Vienna malt  
1.75 lb. (790 g) flaked maize

1.75 lb. (790 kg) flaked rice  
0.13 oz. (3.5 g) black malt, finely crushed  
(optional)

## HOPS

0.5 oz. (14 g) Mosaic, 12.5% a.a., @ 60 min  
1 oz. (28 g) Centennial, 10% a.a., whirlpool  
1 oz. (28 g) Ahtanum, 6% a.a., whirlpool

1 oz. (28 g) Cascade, dry hop  
1 oz. (28 g) Amarillo, dry hop  
1 oz. (28 g) Ahtanum, dry hop

## YEAST

Wyeast 1056, White Labs WLP001, or other clean, attenuative ale yeast [2 qt./2 L starter]

## ADDITIONAL ITEMS

1 tsp. Irish moss @ 15 min

1/2 tsp. yeast nutrient blend (or equivalent) @  
15 min

0.02 fl. oz. (0.7 mL) amyloglucosidase (liquid)

0.25 oz. (7.1 g) Polyclar AT (PVPP)

6.3 oz. (170 g) corn sugar for bottle  
conditioning to 3 vol. (6 g/L) of CO<sub>2</sub>

## BREWING NOTES

Crush the base malts as you normally would. If you are using the black malt, mill it separately and finely. The small amount of black malt can improve clarity at the expense of a bit of extra color (around 1 SRM). The flaked adjuncts do not need to be milled.

Mix grains and adjuncts and mash in at 150°F (66°C) with 13.5 qt. (12.8 L) of water. Stir the mash every 5 minutes or so if it is possible to do so without losing heat. Take periodic iodine tests and mash out when you receive a negative result. Recirculate the wort until it runs clear or you have recirculated more than 10 qt. (about 10 L). Run off and sparge with water hot enough to maintain a grain bed temperature of 165–168°F (74–75°C). As you run off, do not let the pH of the runoff exceed 5.8. (You may need to collect less than 6 gal./23 L.)

Add water, if needed, to the kettle to yield enough wort to achieve 5 gallons (19 L) after a 90-minute boil. Boil for 90 minutes, adding bittering (Mosaic) hops for the final 60 minutes of the boil. Add the Irish moss and yeast nutrients with 15 minutes left in the boil. After knockout, add whirlpool hops and let steep for 10 minutes before chilling the wort.

Chill the wort and transfer it to your fermenter. Aerate thoroughly and pitch yeast from yeast starter. Ferment at 68°F (20°C). When fermentation is winding down, at around 5–6°P (1.020–1.024), add the enzyme. When terminal gravity is reached, rack beer to secondary fermenter containing the dry hops in a mesh bag.

Dry hop for 7–10 days, and then prepare a PVPP solution by dissolving the powder in as small an amount of water as you can manage: a couple of ounces (about 60 mL) should be plenty. Remove the dry hops and swirl the beer gently. Without splashing, stir the PVPP gently into the top layer of beer and re-affix the fermentation lock. Let the beer sit for at least 6 hours or overnight before racking to a keg or bottling bucket. Carbonate to around 3 volumes (6 g/L) of CO<sub>2</sub>. If you bottle condition and fermented at 68°F (20°C), use 6.3 oz. (170 g) of corn sugar to prime the bottles.

The grain bill for a brut IPA should consist of a light base malt and perhaps a very lightly colored adjunct.

## BITTERNESS AND THE BOIL

The level of bitterness of a brut IPA is lower than that of a typical American IPA. However, given the low finishing gravity, the *perceived* bitterness is higher than the numbers would indicate. Sturdavant shoots for around 20 to 25 IBUs in his bruts. He wants the level of perceived bitterness to be roughly the same as that of a German Pilsner, albeit with much more hop aroma.

Although the bittering hop addition is fairly small, the level of the late hopping and dry hopping should be high. Sturdavant loads his brut IPAs up with tropical, “diesel-y” hops. “Mosaic is a great hop to start with,” he says. He also recommends Amarillo, Citra, Idaho 7, and Strata. Steele took a different course and brewed his brut IPA with three German noble hops.

The final choice is up to you. The important thing is to add enough to get plenty of hop aroma. Adding at least 2 ounces (57 g) of hops near the end of the boil is a good starting point for 5 gallons (18.9 L) of beer, and your favorite IPA recipe should be a guide to getting the level of hop aroma you seek. As with any IPA, using fresh hops is a must. Likewise, getting the proper brewing liquor is important. Review what you know about water chemistry and hoppy beers, and adjust your brewing water accordingly.

## FERMENTATION AND ATTENUATION

The best time to add the enzyme is during fermentation, specifically late in fermentation. If you do this, the yeast cells will experience their usual environment during early fermentation. The yeast will initially take in the few simple sugars usually found in wort but then feed almost entirely on maltose during the bulk of the fermentation, as it normally would. Then, the enzyme is added and goes to work on the carbohydrates that were not digested in the mash. The yeast consumes the resulting glucose at the end of fermentation.

If the enzyme were added before fermentation, the initial wort would be rich in glucose. The yeast would take that in preferentially, only shifting to maltose when the supply of glucose was exhausted. This could cause the yeast to bog down, especially if the enzyme activity was still producing a trickle of glucose.

Mitch Steele has found another concern regarding when to add the enzyme—diacetyl. In one batch he brewed, the enzyme was added after primary fermentation was complete. It turned out to be a diacetyl bomb. “It took two weeks to clean up,” he said. Now he recommends adding the enzyme during active fermentation, when the specific gravity is around 5 to 6°P (1.020 to 1.024 specific gravity). This gives the yeast a little time to clean up the diacetyl it produces during the renewed burst of fermentation due to the glucose.

The final gravity of the beer can get rather low. Steele recommends shooting for a final gravity of -1.0 to 0.0°P (0.996–1.000 specific gravity). In practice, controlling the extent to which the enzyme acts is difficult, and you may experience beers that finish at -1.5°P (0.994) or lower. The higher the original gravity of the wort, the more alcohol is produced, and the lower the final gravity of the beer can get.

For a 5-gallon (19-L) batch of beer, adding approximately 0.02 fl. oz. (0.50 mL) of a liquid preparation of the enzyme as the fermentation winds down should produce acceptable results. Any yeast strain that is appropriate for an English or American IPA would work for a brut IPA.

## DRY HOPPING

To accentuate the hop aroma, a brut IPA should be dry hopped. For a 5-gallon (19-liter) batch of brut IPA, 1.5 oz. (43 g) of hops is a good starting point. This should yield an aroma like that of a heavily hopped pale ale. Ramp this up to around 5 oz. (140 g) to get a level of dry hopping comparable to a double IPA. Most of the amounts in between fall in the usual range for an American IPA, so just choose the level you prefer.



# A2 Brew Tay (Partial-Mash)

Brut IPA

This partial-mash brut IPA is bursting with tropical fruit notes from New Zealand hop varieties. Any brewer who has made beers using the “extract plus grains” method will have no problem making this beer. The only thing you need beyond the typical extract brewing setup is a 2- or 3-gallon (7.5 to 11.4 liter) beverage cooler and a large nylon sack to hold the grains. For best results, use the freshest malt extract possible and make the 2 qt. (roughly 2 L) yeast starter. If you help the yeast out, it will make a great beer for you.

**Batch volume:** 5 US gal. (18.9 L)  
**Original gravity:** 1.049 (12.2°P)  
**Final gravity:** 0.998 (-0.5°P)  
**Efficiency:** 75%

**Alcohol:** 6.7% by volume  
**Bitterness:** 24 IBU  
**Color:** 3 SRM

## MALTS AND ADJUNCTS

4 lb. (1.8 kg) light liquid malt extract  
2.75 lb. (1.25 kg) US 2-row pale malt  
1.25 lb. (567 g) flaked maize

## HOPS

0.5 oz. (14 g) Galaxy, 13% a.a. @ 60 min  
1 oz. (28 g) Nelson Sauvin, 13% a.a., whirlpool  
1 oz. (28 g) Motueka, 7% a.a., whirlpool  
1 oz. (28 g) Nelson Sauvin, dry hop  
1 oz. (28 g) Motueka, dry hop  
1 oz. (28 g) Wai-it, dry hop

## YEAST

Wyeast 1056, White Labs WLP001, or other clean, attenuative ale yeast (2 qt./2 L starter)

## ADDITIONAL ITEMS

1 tsp. Irish moss @ 15 min  
1/2 tsp. yeast nutrient blend @ 15 min  
0.02 fl. oz. (0.7 mL) amyloglucosidase (liquid)  
5.75 oz. (163 g) corn sugar for bottle conditioning to 2.75 vol. (5.5 g/L) of CO<sub>2</sub>

## BREWING NOTES

Place the crushed malts and flaked maize in a large steeping bag. Heat 6 qt. (5.7 L) of water to 164°F (73.3°C) and pour it into the cooler. Lower the grain bag into the hot water and use a large spoon to stir the mixture. The temperature should settle at around 152°F (66.7°C). Cover and rest the mash for 45 minutes. Stick as closely as possible to the specified volume and temperatures to get the most out of this small mash. In the last 15 minutes, add 3 qt. (2.8 L) of water to your brew kettle and heat it to around 170°F (76.7°C). In addition, before the partial mash finishes, heat 6 qt. (5.7 L) of water to 170°F (76.7°C).

Collect the wort from the partial mash by drawing off roughly 2 cups (473 mL) of wort from the spigot. Pour the wort into your brew kettle. Then, add roughly two cups (473 mL) of hot water to the top of the grain bed in the cooler. Repeat until the sparge water is depleted. Then, run off the remaining wort and pour it in your brew kettle. Once the entire wort is collected, stir in half the malt extract and heat the wort to a boil.

Boil the wort for 60 minutes, adding the bittering hops at the beginning of the boil. Add the Irish moss, yeast nutrients, and the remaining malt extract for the final 15 minutes of the boil. Add the whirlpool hops after knockout and let them steep for roughly 10 minutes before chilling the wort.

Chill the wort, allowing hops and trub to settle, with the lid on your brew pot, for at least 30 minutes. Rack the wort to a fermenter and add cool water to make 5 gallons (19 L) of wort. Leave as much trub and hop debris behind in the kettle as is reasonably possible. Aerate the wort well and pitch your yeast. Ferment at 68°F (20°C). When fermentation has peaked and then slowed down for a few days, add the enzyme. Let the fermentation go to completion, and then add your dry hops to a secondary fermenter and rack the beer onto them. Dry hop for 7–10 days and then bottle or keg.

As in any hop-forward beer, the freshness of the dry hops makes a big difference. Additionally, if you use whole hops, consider displacing some of the air between the bracts of the cones—the oxygen in that air can prime your IPA to stale prematurely. One way to reduce some of the oxygen is to fill a corny keg with water and then push the water out with carbon dioxide ( $\text{CO}_2$ ). Open the keg, drop your hops into the keg filled with  $\text{CO}_2$ , and seal it again. Then, when primary fermentation is finished, rack the beer onto those hops. Purge the keg with  $\text{CO}_2$  after the beer is transferred and you will have lowered the amount of hop-borne oxygen substantially. If you use pellet hops, this is not necessary.

### CARBONATION

Champagne is highly carbonated. However, as Studavant dispenses his brut IPA through normal beer lines in his brewpub, it has 2.5 volumes of  $\text{CO}_2$  (5 g/L), a standard level for American craft beers. As a homebrewer, you of course have the freedom to experiment with higher levels of carbonation if desired.

Many Belgian beers are more highly carbonated than standard American beers, with styles such as tripel often having up to

3 volumes (6 g/L). Likewise, the most highly carbonated German hefeweizens contain around 5 volumes of  $\text{CO}_2$  (10 g/L). For comparison, actual Champagne can reach 6 volumes of  $\text{CO}_2$  (12 g/L). If you experiment with higher levels of carbonation to achieve a more Champagne-like beverage, be sure to package the beer in heavy bottles.

### CLARITY

Hops contain polyphenols and, thus, dry-hopped beers are often hazy. Absolute clarity is not needed in a brut IPA, but conversely it is not meant to look like a New England-style IPA. Very clear, light-colored beers look impressive. So, making some effort to clarify your beer can pay dividends. Adding polyvinylpolypyrrolidone (PVPP), available as Polyclar, can remove some of the haze-causing polyphenols. Stir in the PVPP after the beer has been dry hopped, and give this fining agent 6 to 8 hours to settle before transferring the beer to a keg or bottling bucket.

An old homebrewer's trick may also come in handy. If you crush roughly 0.25 oz. (7.1 g) of black malt per 5-gallon (19 L) batch and stir it in the mash, your light-colored beers will turn out clearer. The small amount of black malt does not add as much color as you

might think (or as your recipe formulation software calculates), but in my experience it clarifies light-colored beers noticeably.

### THE DRY FINISH

Brut IPA exists today as a handful of individual examples. I resisted the urge to conjure up a set of style guidelines for brut IPA because I wanted to focus on how to brew a beer that met the general description Sturdavant gave but leave plenty of room for brewers to explore.

If brewing a "dry PA" interests you, take whatever information and inspiration you can from this article, but feel free to add your own twist. Obvious things to try would be to alter the hop varieties or the color of the beer. You could make a "brutal" wheat IPA or add a Belgian twist by using a "spicy" strain of yeast. There may be a limit on how low the final gravity can go, but the sky is the limit when it comes to generating new forms of IPA.

*Chris Colby lives in Bastrop, TX and is the editor of beerandwinejournal.com. He is also the author of Methods of Modern Homebrewing (2017, Page Street) and Home Brew Recipe Bible (2016, Page Street).*

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AND THE

# 2018 GABF PRO-AM MEDAL GOES TO...

BY KRISTEN KUCHAR



Every year in early fall, the city of Denver is flooded with 62,000 beer enthusiasts ready to celebrate their beloved beverage at arguably the best and best-known beer gathering in the United States—the Great American Beer Festival® (GABF).

For professional brewers behind the scenes, the festival is filled with anticipation as their beers are submitted for judging and compete for prestigious honors. While brewers can enter beers into more than a hundred different categories, one category stands apart from the rest.

The GABF Pro-Am Competition offers American Homebrewers Association members the opportunity to team up

with professional breweries to produce award-winning homebrew recipes at a large scale. They collaborate to take the homebrew recipe to the next level, scaling it up so it's ready for tasting at the AHA's Pro-Am Competition booth.

This competition showcases homebrewing and highlights the talent and dedication of homebrewers. But it's not open to just any AHA member—the beer is required to have already won an award in an AHA/BJCP-sanctioned competition, which means the competition is fierce and the beers are on point.

This year, there were 101 entries into the competition, but only three took home medals.



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## GOLD MEDAL DEER CROSSING

Little Harpeth Brewing Co. with  
AHA Member Chris Allen

Chris Allen is no stranger to winning awards for his homebrew. The AHA member lists dozens of awards for his creations on his website, [OnesAndZerosBrewing.com](http://OnesAndZerosBrewing.com). The Music City Brewers homebrew club member has an evident passion and talent, along with a unique and impressive brewing system at his home in Nashville.

Allen sold his music studio and bought an all-electric brew system that holds fermentation temperature to within a tenth of a degree Fahrenheit, he explains. He's been featured in *Imbibe* magazine and was named both the Mid-South and Tennessee homebrewer of the year, among other honors. But winning the gold at this year's Pro-Am competition was, as he puts it, the most insane thing he's ever heard.

The inspiration for Deer Crossing, a kellerbier, was discussed over beers, of course, and was quite simple. "We both wanted to make something that could possibly win and that we could enjoy," Allen explains of himself and partner Little Harpeth Brewing Co. brewmaster, Jesse Brown.

"Since the brewery produces a lot of unfiltered beer, making a helles and entering in the keller/zwickel category made sense," Brown explains.

The super-refreshing, malty beer has received abundant positive feedback. Allen describes it as the perfect balance of bitterness and malt.

"You can drink several pints of it and not get tired of it," he says.

But it wasn't just the beer and the medal that came out of the experience. "One of the best parts of doing any kind of collaboration is the friendships that get built," says Brown, who says he is holding Allen to the invitation to come brew on his at-home system.



# Deer Crossing

Pale kellerbier (Munich helles)

Recipe courtesy Chris Allen

Chris's original homebrew recipe uses a single-infusion mash, but you can also perform a decoction mash, as Little Harpeth Brewing Co. did in the pro version. If you want to skip the decoction mash, include the small amount of optional melanoidin malt to introduce some of the malt complexity that decoction brings to the table.

**Batch volume:** 5 US gal. (18.9 L)

**Bitterness:** 17 IBU

**Original gravity:** 1.048 (11.9°P)

**Color:** 4 SRM

**Final gravity:** 1.011 (2.8°P)

**Alcohol:** 4.8% by volume

### MALTS

8.7 lb. (3.95 kg) BestMalz Pilsner malt

0.15 lb. (68 g) melanoidin malt (optional)

0.25 lb. (113 g) Weyermann Munich I malt

### HOPS

0.6 oz. (17 g) Hallertauer Mittelfrüh, 4% a.a., FWH

0.4 oz. (11 g) Saphir, 3.5% a.a. @ 60 min

### YEAST

3 packs Wyeast 2308 Munich Lager

### WATER

Adjust brewing liquor with calcium chloride as needed to achieve mash pH of 5.3

### BREWING NOTES

*Single infusion mash option:* Include the melanoidin malt and mash at 152°F (67°C) for 90 minutes followed by a 10-minute mash out at 168°F (76°C).

*Decoction option:* Omit melanoidin malt. Mash in at 132°F (56°C) and hold for 10 minutes. Heat mash to 147°F (64°C), and then pull a decoction of 1/3 the total mash volume. Maintain the main mash for an hour at 147°F (64°C). Meanwhile, heat the decoction to 156–158°F (69–70°C), hold for 10 minutes, and then bring to a boil. Boil decoction for 10 minutes and then raise the temperature of the main mash to 156–158°F (69–70°C). Return the decoction to the main mash to achieve a mash-out temperature of 168°F (76°C).

*Both versions:* Add first wort hops to kettle, and then lauter, sparge, and collect enough wort to yield 5 gal. (18.9 L) after a 90-minute boil. Boil for 90 minutes, adding remaining hops as indicated. Ferment at 49°F (9°C) for 8 days and then warm to 52°F (11°C) for 4 more days before cooling by 2°F (1.1°C) per day to 34°F (1°C) for lagering. Bottle or keg after 4 to 6 weeks of cold conditioning.

### EXTRACT VERSION

Omit melanoidin malt and substitute 6.25 lb. (2.83 kg) Pilsner malt extract syrup and 8 oz. (227 g) Munich malt extract for Pilsner and Munich malts. Dilute with reverse osmosis water and continue as above.





## SILVER MEDAL

### GONE FOR A BURTON

Rock Bottom Brewery with  
AHA Member Jim Todd

In 2008, Jim Todd stumbled into a few problems during brewing his first beer, which is to be expected for any new homebrewer. He jumped online to troubleshoot, and things changed forever.

"I discovered this whole, huge homebrewing community that I had no idea ever existed," Todd says, "which led me down the road to the obsession that is homebrewing," he laughs.

Todd started winning medals in his home state of Illinois for his homebrews and thought to himself, "Hey I'm pretty good at this." It was a beer that he brewed with his homebrew club, Brewers of South Suburbia, also known as BOSS, that would eventually lead to him winning his most prized award yet.

Inspired by a historical recipe he brewed with his fellow club members, Todd changed up the yeast and made some other tweaks to create Gone for a Burton, the beer that took home silver in this year's GABF Pro-Am Competition. "I've won numerous medals in various competitions, but this is by far the best," Todd adds. "This is my greatest accomplishment in homebrewing."

Todd teamed up with Erik Pizer, brewmaster at Rock Bottom Brewery in Warrenville, Ill. Winning a medal had special meaning to Pizer, who himself started his career as a homebrewer. He says the experience of teaming up with Todd couldn't have been better—super casual and straightforward, Todd sent him the recipe, and the pair worked to scale it up. Todd echoes the positive experience, calling Pizer a great brewer and a great guy.

The result of their collaboration was an English brown ale with a nice hit of toffee and chocolate, with a bready malt character and a little bit of earthy, floral hops and fruity yeast esters. "It finishes nice and clean without a ton of residual sweetness. It's a really nice beer to have a few pints of," says Pizer.

Besides working with an incredible brewmaster, he credits his homebrew club as playing the most integral role in his success. "That's what has helped me out the most," he says. "There is just a wealth of knowledge there," Todd explains of his club members, who he says were all ecstatic when they heard the news of his victory.

Pizer had lost track of time the morning of the awards ceremony, when all of a sudden his phone was buzzing like crazy with a flood of texts from the good news. "I knew it was a great beer, so I'm extremely happy and super happy for Jim to have won yet another award with this great beer of his."

Todd believes the competition inspires homebrewers to go pro. "I think it's really great that GABF has the Pro-Am category. It's really cool for homebrewers to have the chance to brew with a pro, where otherwise they'd never have the opportunity."



## Gone for a Burton

English brown ale

Recipe courtesy Jim Todd

In addition to taking silver at the 2018 GABF Pro-Am Competition, this beer has won gold medals at the Urban Knaves of Grain's 2018 Drunk Monk Challenge, the 2018 BOSS Charlie Orr Memorial Chicago Cup Challenge, and the 2018 NHC first round.

**Batch volume:** 6 US gal. (22.7 L)

**Original gravity:** 1.054 (13.3°P)

**Final gravity:** 1.015 (3.8°P)

**Efficiency:** 72%

**Color:** 17 SRM

**Bitterness:** 31 IBU

**Alcohol:** 5.2% by volume

### HOPS

1.27 oz. (36 g) East Kent Goldings, 6.1% a.a., FWH

1.27 oz. (36 g) East Kent Goldings, 6.1% a.a. @ 15 min

### YEAST

Fermentis S-04 SafAle English Ale

### WATER

Ca 36 ppm, Mg 8 ppm, Na 22 ppm, Cl 53 ppm, SO<sub>4</sub> 46 ppm, HCO<sub>3</sub> 56 ppm

### MALTS

9.75 lb. (4.42 kg) pale malt

1.25 lb. (567 g) amber malt

1 lb. (454 g) brown malt

0.5 lb. (227 g) Special B malt

0.25 lb. (113 g) acidulated malt

### BREWING NOTES

Mash in at 149°F (65°C) and rest 45 minutes. Raise mash temperature to 158°F (70°C) and rest 60 minutes. Do not mash out. Drain mash tun and batch sparge with 180°F (82°C) water, collecting wort onto first wort hops. Boil wort for 60 minutes, adding hops as indicated. Chill to 63°F (17°C) and oxygenate for 90 seconds. Pitch rehydrated yeast, let free rise to 65°F (18°C), and ferment for 3 days. Then let temperature free rise to 67°F (19°C) and hold for 11 more days. Cold crash to 38°F (3°C) and hold for 3 days before racking to a keg and carbonating to 2.1 vol. (4.2 g/L) of CO<sub>2</sub>.

### PARTIAL-MASH VERSION

Reduce pale malt to 1.5 lb. (0.68 kg). Mash with remaining grains at 150°F (66°C) for 45 minutes. Drain, rinse grains, and dissolve 6 lb. (2.72 kg) pale malt extract syrup in the resulting wort. Top up with reverse osmosis water and proceed with the boil.



## BRONZE MEDAL

### LA BOMBA

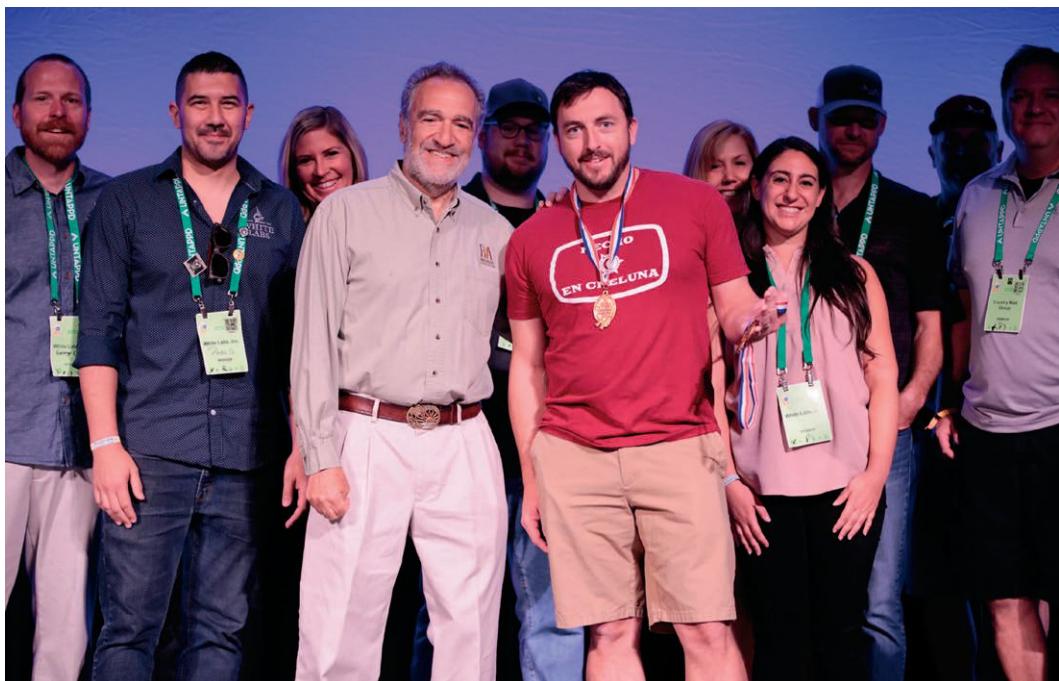
Cheluna Brewing Co. with  
AHA Member Christopher Cardillo

A love for Belgian beers and the desire to use cardamom provided the inspiration for La Bomba, the bronze-medal award-winning beer at this year's Pro-Am Competition.

It's hard to imagine that just five years ago, Christopher Cardillo, the creator of this incredible beer, was debating whether to get into homebrewing at all. He and a good friend bought a basic starter kit and threw their hats in the ring to make their first amber ale. The result was a "drain pour," as Cardillo describes.

But that wasn't going to stop the determined Coloradan. He brewed 27 batches in 12 months with the endless support of his wife, Emma. Ultimately, he became a part of the Cheluna Homie Brewer group, Cheluna Brewing's homebrew club in Aurora, Colo.

La Bomba won a gold medal at the Halfpenny Homebrew Competition, and it was a no brainer for it to become the beer Cheluna brewmaster Eric Nichols and Cardillo would team up to create for this competition.



In early July, Cardillo took a day off work to spend the whole day at the brewery with Nichols. "The whole experience fell into place without a ton of effort," Cardillo describes. "Brewing with Eric was great. He just explained everything to me every step of the way, and we spent the day brewing and talking about beer."

Scaling up the recipe to such a large volume allowed Cardillo to witness the huge quantities of hops and spices that go into brewing a beer at that scale.

The scaled-up batch was a tad over target gravity. "When you're homebrewing,

"you've got everything going against you," laughs Cardillo. "When you are in a professional brewery, there's a lot of automation and bells and whistles making things easier, even at that scale."

The result was a refreshing Belgian-style ale fermented with Belgian La Chouffe yeast that has a nice alcohol kick to it. "We used bitter orange peel, coriander, and cardamom, so there is a really interesting, nice spice layer on top of the Belgian phenols," Cardillo explains. He says it's refreshing and good for a summer day, but equally good for a winter's night.

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**FOR THE ADVANCED BREWER**

**ON THE ROAD WITH CHARLIE**



# La Bomba

*Belgian-style golden strong ale*

Recipe courtesy Christopher Cardillo

when you want something a little lighter and brighter to warm you up.

The Cheluna Brewing team prides themselves on being a community-oriented place and one that helps homebrewers thrive. "Homebrewers are at the forefront of the craft beer scene, and we have a lot of respect for that, as former homebrewers ourselves," the team says. "Professional brewing owes almost everything to homebrewing."

Cardillo debated heading to Denver for the awards ceremony, not thinking anything would come of it. "My wife said, 'You should go. You'll regret it if by some crazy stroke of luck you happen to win and you could have been there.'" When he heard his name called, it was absolutely surreal, he says.

"There have been moments since starting to homebrew where I've had people sincerely tell me that my beer is really good and they would buy it at a brewery or a pub, and that's always nice," he says. "But getting this validation and feedback is on a whole other level."

Cardillo is appreciative of the people around him—the Cheluna team, his friends, and his wife and their two small children. "When you're a homebrewer, you share the hobby with the people around you," he says.

**Kristen Kuchar** is a Colorado-based writer and editor covering craft beer. She has contributed to *CraftBeer.com*, *The Beer Connoisseur*, *BeerAdvocate*, *Brewing News*, and many more publications.



In addition to medaling at the 2018 GABF Pro-Am Competition, this recipe took gold at the May 2018 Halfpenny Brewing Co. competition with a score of 42.

**Batch volume:** 6 US gal. [22.7 L]

**Original gravity:** 1.068 [16.6°P]

**Final gravity:** 1.011 [2.8°P]

**Efficiency:** 70%

**Color:** 6 SRM

**Bitterness:** 24 IBU

**Alcohol:** 7.6% by volume

## MALTS AND ADJUNCTS

12 lb. [5.44 kg] Pilsner malt

8 oz. [227 g] 9°L Munich malt

8 oz. [227 g] Briess Carapils

8 oz. [227 g] flaked wheat

## HOPS

0.6 oz. [17 g] Hallertau Magnum, 13.2%

@ 60 min

0.25 oz. [7 g] Saaz, 3% @ 5 min

0.25 oz. [7 g] Saaz, 3% @ 0 min

## YEAST

Inland Island INIS-222 Belgian Gnome Ale

## ADDITIONAL ITEMS

1.5 lb. [680 g] turbinado sugar @ 10 min

0.5 tablets Whirlfloc @ 10 min

15 crushed cardamom seeds @ 5 min

0.5 tsp. [2.5 mL] crushed coriander seed @ 5 min

0.3 oz. [8.5 g] bitter orange peel @ 5 min

0.5 tsp. [2.5 mL] gelatin for fining (optional)

## BREWING NOTES

Mash at 150°F [66°C] for 60 minutes with 5.5 gal. [20.8 L] water, and sparge with 4.5 gal. [17 L] of 168°F [76°C] water to yield 8 gal. [30.3 L] of pre-boil wort.

Boil 60 minutes, adding hops and additional items as indicated. Chill wort to 63°F [17°C] and ferment about one week, allowing temperature to free rise into the low 70s °F (low 20s °C).

After 2 to 3 weeks, cold crash and hold for at least 3 days. Optionally fine with gelatin before racking to a keg and carbonating with 3 vol. [6 g/L] of CO<sub>2</sub>.

## PARTIAL-MASH VERSION

Reduce Pilsner malt to 2 lb. [0.9 kg]. Mash with remaining grains at 150°F [66°C] for 45 minutes. Drain, rinse with reverse osmosis water, and dissolve 7 lb. [3.18 kg] Pilsner malt extract syrup in the resulting wort. Top up to desired boil volume and proceed as above.



# Third Annual Bruce Street Brewfest Homebrew Competition

By Amahl Turczyn

**H**osted and organized by the Smoky Mountain Homebrewers Association, the Third Annual Bruce Street Brewfest Homebrew Competition accompanied the Bruce Street Brewfest Microbrew Festival; both took place September 15, 2018, in Sevierville, Tenn. Competition organizer Jeff Renz was quick to point out that Sevierville, gateway to the Great Smoky Mountains National Park, is also the hometown of country singer Dolly Parton.

Renz stated the competition was first organized in 2016 by his Smoky Mountain Homebrewers club, which was started that same year by three local homebrewers to further their interest in homebrewing.



The Brewfest was started in club president Charles Valentine's garage after he attended a brew fest in Johnson City, Tenn. Commented Valentine, "We wanted to have one closer to home. The people's choice competition was the first year, we added a judged competition the second year, and got it sanctioned with BJCP and AHA in 2018."

One thing that makes the competition unique is that "we are still small enough that the organizers are involved start to finish," he continued. The club works closely with the Sevierville Commons Association to tie its competition seamlessly to the annual display of local craft brewing talent that is the Bruce Street Brewfest, as well as to the community.

"The Sevierville Commons Association is a local nonprofit that is extremely helpful and supportive of the Brewfest and its competition," Valentine explained. "They have worked diligently over the past few years to bring life and culture to beautiful downtown Sevierville, and they make sure proceeds from the Brewfest go to various charities in the local community."

Local businesses also have a stake in the competition and demonstrate their commitment by donating merchandise and gift certificates to be used as prizes. Among these are Ferment Station and Allen Biermakens homebrewing supply shops in Knoxville, Tenn.; Awards and Engraving in Sevierville, Tenn.; and the hosting club's organization, BeerHeads LLC, which donated prizes and medals for both competitions.

Overall winners received one of these gold, silver, or bronze medals, whereas winners of the people's choice competition received special prizes: first prize was \$100 cash, plus a \$75 gift certificate to Allen Biermakens homebrew supply, and a pressurized growler; second prize was \$60 cash, with a \$50 gift certificate to



Allen Biermakens; and third place received \$25 cash and a gift certificate for an Allen Biermakens T-shirt.

Homebrewer Frank T. Mitchell was the recipient of the top award at this year's Bruce Street Brewfest Homebrew Competition. He started brewing in 2002 after watching the "Amber Waves" episode of Alton Brown's Food Network show *Good Eats* on his buddy's TiVO.

"At the end of the show, it listed Marietta Homebrew shop as a provider. ... We didn't have a known homebrew shop in my home state of Alabama at the time," he commented, "so that's where my first order was placed." Mitchell learned a lot of the hobby the hard way—by trial and error—but as his family has a long heritage of beverage alcohol production, he kept at it. "In the early years, I found out it didn't take a lot of bleach to sanitize my bottles, but they did need a lot of hot water to rinse them out! I've done everything you can imagine to ruin a beer. My grandfather also had two 'federal vacations' in the 50s and 60s for running a rather busy 'post office' as he called it when I was smaller, so brewing is in my blood."

Mitchell has some formal training that has also helped his brewing. "Last summer I completed Siebel's Concise Course in Brewing Technology. Each summer I want to



become certified in an area that will help me with my beer knowledge. I hope to have my Cicerone Certified Beer Server shortly and, next summer, BJCP certification."

He also credits some of his success to the switch to all-grain brewing. "Until 2007

Brew  
This!



# Corporal Catbox

Specialty IPA (21B) – Dank, Hazy NEIPA

This IPA won best of show at the Third Annual Bruce Street Brewfest Homebrew Competition.

Recipe courtesy Frank T. Mitchell

Frank adds, “If you want do it right, chase the chemistry. The sulfate:chloride ratio does make a difference. You can turn this beer out perfectly in 10 days or less. I have found the wheat component makes a big deal; try not to cut it back too much, which is why this one dropped a little clearer than I wanted with the CaraRed addition. And the first dry hop needs to be early enough to allow for the yeast biotransformation haze effect.”

**Batch volume:** 5.5 US gal. [20.82 L]  
**Original gravity:** 1.065 (16°P)  
**Final gravity:** 1.016 (4°P)  
**Bitterness:** 69 IBU

**Color:** 6.1 SRM  
**Alcohol:** 6% by volume  
**Efficiency:** 72%

## MALTS

10.8 lb. [4.9 kg] pale two-row malt  
1.5 lb. [680 g] flaked oats  
1.5 lb. [680 g] white wheat malt  
8 oz. [227 g] honey malt  
7 oz. [198 g] Weyermann CaraRed malt

## HOPS

0.5 oz.	[14 g] Summit, 16.1% a.a. @ 30 min	2 oz.	[57 g] Comet, 9.5% a.a., dry hop 7 days
1.9 oz.	[54 g] CTZ, 14% a.a. whirlpool 15 min	2 oz.	[57 g] Simcoe, 13% a.a., dry hop 7 days
1.9 oz.	[54 g] Comet, 9.5% a.a., whirlpool 15 min	2 oz.	[57 g] Azacca, 15% a.a., dry hop 3 days
1.9 oz.	[54 g] Simcoe, 13% a.a., whirlpool 15 min	2 oz.	[57 g] CTZ, 14% a.a., dry hop 3 days
2 oz.	[57 g] CTZ, 14% a.a., dry hop 7 days	2 oz.	[57 g] Simcoe, 13% a.a., dry hop 3 days

## OTHER INGREDIENTS

0.5 tsp. [1.5 g] yeast nutrient @ 15 min

## YEAST

Wyeast 1318 London Ale III, 0.5 L starter

## WATER

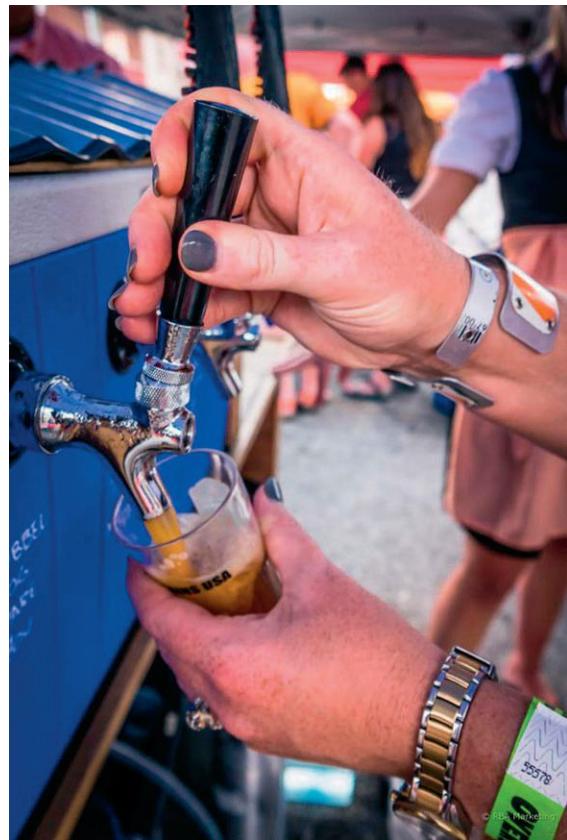
Total water volume: 9.77 gal. [37 L]. Mash water: 5.67 gal. [21.5 L] with 0.3 g CaSO<sub>4</sub>, 10.2 g CaCl<sub>2</sub>, and 0.9 mL lactic acid. Sparge water: 4.1 gal. [15.5 L] with 0.2 g CaSO<sub>4</sub>, 7.4 g CaCl<sub>2</sub>, and 0.2 mL lactic acid

## BREWING NOTES

Mash at 152°F [66°C]. Hold for 60 minutes. Batch sparge with two steps (drain first runnings from mash tun, add half the sparge water, drain, add remaining sparge water, drain) at 168°F [76°C]. Pitch yeast starter and ferment at 65°F [18°C]. Add first dry hops 31 hours after pitching and second dry hops 78 hours after. Seven days later, cold crash to 58°F [14°C].

## PARTIAL MASH VERSION

Reduce pale malt to 2 lb. [907 g] and mash it with remaining grains at 152°F [66°C] for one hour. Drain, rinse grains, and dissolve 6 lb. [2.72 kg] pale malt extract syrup into the resulting wort. Top off with reverse osmosis water to desired boil volume and proceed with boil.



when I graduated from pharmacy school, I brewed only extract. Every year since 2005, I've brewed a Russian imperial stout dubbed Reinke's Revenge after one of my favorite professors. It's had different hop profiles; some batches were aged on oak chips, some racked onto five pounds of raspberries, you name it."

Obviously, a beer this big is more easily produced with malt extract, but undaunted, Mitchell wanted to make the transition to all-grain anyway.

"In the last year, my buddy Ryan convinced me to go all-grain and helped me learn how. I've found this has dramatically changed my perspective and allows for a far-improved end product. I've dabbled in all-grain here and there since 2015, using his brew system to train on, but eventually I set a goal of having my own system."

Mitchell soon procured his own half-barrel "Franken-system" so he wouldn't have to borrow his buddy's anymore. "My current system doesn't have any pumps (yet), but I use your standard Cereal Killer [grain mill] set pretty fine since I'm using a 60-quart Igloo Ice Cube rolling cooler with a custom brew bag as my mash tun. I've got a 15-gallon stainless brew kettle with manual dial thermometer and another that I've converted to take a 1600-watt heating element for my hot liquor tank."

Why electric? Safety considerations for the rest of his in-house brew crew. "As a father of three, all under the age of five, I don't need propane going all the time when my oldest just wants to help daddy mill grains and steep."

He cites a few sources of inspiration, amateur and professional, for brewing info and ideas. "My wife got me my first AHA membership for Christmas last year, which provides info on recipes, competitions, etc. I also have a subscription to *Brew Your Own*, and I was a founding member of our local Central Alabama Brewers Society (CABS) homebrew club. Like most, I've read Papazian, Ray Daniels, Sam Calagione, and John Palmer, even gotten their autographs. Local professional brewer Jamie Ray has inspired me, since he brewed and won at the Olde Auburn Ale House. He brews standard recipes that medal at GABF as well as off-the-wall, non-mainstream quaffables. Biggest thing is, he's approachable. Period. I've had the opportunity to brew all-grain batches on pilot systems at microbreweries, and I've had my stuff put on tap. You just gotta be able to take the good with the bad on the critiques."

But Mitchell has also gotten a lot of positive feedback for his brewing in the form of competition awards, and they have fueled a thirst for more. "From Christmas 2017 to now, I've won eight medals, though my only best-of-show was at the Bruce Street competition. I'm learning a lot about the competition way of life, and my buddy says I've been bitten by the medal bug."

He's also gained a fair amount of perspective on what is necessary for a successful competition. "Regardless of how big they are, the best competitions have the best communication. If you're behind on getting medals out, a group email to winners is great. If the deadline is closing in and you need to change the category of an entry before mailing, a quick coordinator is needed. My best experiences have come in competitions I haven't even medaled in, but the scores and sheets were preloaded onto the site for release an hour after the winners were announced, and my entries were scored by a BJCP Grand Master palate."

But sometimes a quick turnaround comes with a price. "I'm not a Facebooker, so if Jeff hadn't emailed me I wouldn't even know I won."

Looking forward, Mitchell admits he has a lot of beer to brew and a lot of competitions to enter. "Right now, I'm simply going back and creating all-grain profiles of the extract beers I've made. I felt like they were good, but all-grain will give me more control to fine tune things like brewing ultra-light-colored styles. Or understand grain bills better."

He's also open to diving into beer styles he's never tried before. "My brew buddy Ryan has opened my palate to different styles like NEIPAs, gose, and funk, to the point that if I try a new style I like, I simply try to brew it with a variation or quality I want."

Hopefully all this research will pay dividends with competitions down the road. "We'll be at AU Oktoberfest under the banner Formation Brewing Company, a nod to the local Air Force base and what our two homebreweries, Beat-12 (mine) and One True Bine (his) have become."

Many thanks to Mitchell for sharing his best of show dank and hazy IPA, Corporal Catbox, with AHA members.

*Amaiah Turczyn is associate editor of Zymurgy.*

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# Relax, Don't Worry, Have a Homebrew!



That mantra rings as true today as it did in 1978 when Charlie Papazian cofounded the American Homebrewers Association with Charlie Matzen. Homebrewing can be as simple or as complex as you want to make it, but the first step is always to relax and not worry.

To aid your relaxation and help you get the most out of Zymurgy, here are some standard assumptions and methods for our recipes. Of course, when a recipe says to do something different, follow the recipe. But you can always fall back on these general tips to brew great beer.



## ON THE WEB

For more detailed info, head over to [HomebrewersAssociation.org](http://HomebrewersAssociation.org) and dive into our How to Brew resources.

## BREWING WITH ZYMBURGY

### MAKING WORT

Most recipes in Zymurgy offer an all-grain version and a malt extract or partial-mash alternative. Pick the procedure you prefer and prepare some wort!



### Malt Extract Recipes

Making wort from malt extract is easy.

- Crush specialty grains.
- Place milled grains in a mesh bag and tie it off.
- Steep the bag of grains in 150–160°F (66–71°C) water for 30 minutes in your brew pot.
- Remove the bag of grains from the pot.
- Fully dissolve the malt extract in your hot, grain-infused water.
- Top up with water to your desired boil volume. (Leave some room for foam!)

### All-Grain and Partial-Mash Recipes

Unless otherwise specified, all-grain brewers can conduct a single-temperature infusion mash with these parameters:

- Water/grain ratio: 1.25 qt./lb. (2.6 L/kg)
- Mash efficiency: 70%
- Mash temperature: 150–153°F (66.7–67.2°C)
- Mash duration: 60 minutes

Partial-mash recipes make the same assumptions, just using a smaller amount of grain and augmenting the small batch of wort with malt extract.

### BOILING

No matter how you get here, everyone loves adding hops.



- Boil time is 60 minutes.
- Boils are assumed to be the full batch volume, but you can also boil a concentrated wort and top up with water in the fermenter.
- Hop additions are given in minutes before the end of the boil.

# Brew Lingo

Every field has specialized language, and homebrewing is no different. Here are some of the key terms, abbreviations, and acronyms you'll find throughout Zymurgy.

**AA** – alpha acid

**ABV** – alcohol by volume

**AHA** – American Homebrewers Association

**BBL** – US beer barrel [31 US gal or 117.3 L]

**BIAB** – brew in a bag

**BJCP** – Beer Judge Certification Program

**Chico** – American ale yeast, AKA Wyeast 1056, WLP001, SafAle US-05, and others

**CTZ** – Columbus, Tomahawk, and Zeus: interchangeable high-alpha-acid hops

**DME** – dry malt extract

**DMS** – dimethyl sulfide, an off flavor similar to canned corn or cooked vegetables

**DO** – dissolved oxygen

**EBC** – European Brewing Convention (beer color)

**FG** – final gravity

**FWH** – first wort hops, added to the boil kettle as it fills with sweet wort after mashing

**HERMS** – heat exchange recirculating mash system

**HLT** – hot liquor tank

**IBU** – international bitterness unit

**LHBS** – local homebrew shop

**°L** – degrees Lovibond (malt color)

**LME** – liquid malt extract

**MLT** – mash-lauter tun

**NHC** – National Homebrew Competition

**OG** – original gravity

**°P** – degrees Plato (density of wort or beer)

**RIMS** – recirculating infusion mash system

**RO** – reverse osmosis, a water purification process that removes most dissolved ions

**SG** – specific gravity (wort/beer density)

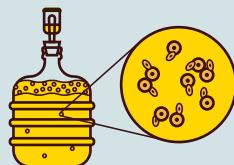
**SMaSH** – single malt and single hop

**SMM** – S-methyl methionine, precursor to dimethyl sulfide (DMS)

**SRM** – Standard Reference Method (beer color)

## FERMENTING AND CONDITIONING

Pitch yeast to chilled wort to make the magic happen.



- Use twice as much yeast for lagers as you do for ales.
- Ales ferment at 60–70°F (15–20°C).
- Lagers ferment at 45–55°F (7–13°C).
- Condition ales at room temperature or colder for a week or two.
- Condition lagers at close to freezing for several weeks.

## BOTTLING AND KEGGING

If you bottle,

- Use 1 oz. of dextrose (corn sugar) per gallon of beer (7.5 g/L) for a good, all-purpose level of CO<sub>2</sub>.
- Use less sugar for less fizz.



- Take care with higher carbonation levels—many single-use beer bottles aren't designed for high pressure.

If you keg and force carbonate your beer,

- Use the chart to dial in the pressure on the regulator.



- Add 0.5 psi (35 mbar) for every 1,000 feet (300 meters) you live above sea level.
- To convert psi pressures to mbar, multiply by 69.
- To convert volumes of CO<sub>2</sub> to g/L, multiply by 2.

## REGULATOR PRESSURES (PSI) FOR VARIOUS CARBONATION LEVELS AND SERVING TEMPERATURES

TEMP. (°F)	VOL. CO <sub>2</sub>										
	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1
33	5.0	6.0	6.9	7.9	8.8	9.8	10.7	11.7	12.6	13.6	14.5
34	5.2	6.2	7.2	8.1	9.1	10.1	11.1	12.0	13.0	14.0	15.0
35	5.6	6.6	7.6	8.6	9.7	10.7	11.7	12.7	13.7	14.8	15.8
36	6.1	7.1	8.2	9.2	10.2	11.3	12.3	13.4	14.4	15.5	16.5
37	6.6	7.6	8.7	9.8	10.8	11.9	12.9	14.0	15.1	16.1	17.2
38	7.0	8.1	9.2	10.3	11.3	12.4	13.5	14.5	15.6	16.7	17.8
39	7.6	8.7	9.8	10.8	11.9	13.0	14.1	15.2	16.3	17.4	18.5
40	8.0	9.1	10.2	11.3	12.4	13.5	14.6	15.7	16.8	17.9	19.0
41	8.3	9.4	10.6	11.7	12.8	13.9	15.1	16.2	17.3	18.4	19.5
42	8.8	9.9	11.0	12.2	13.3	14.4	15.6	16.7	17.8	19.0	20.1

■ = PSI

Source: Brewers Association Draught Beer Quality for Retailers



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A photograph of the Providence skyline at dusk, featuring the Waterplace Park and the Riverfront Park. The buildings are illuminated, and their reflections are visible in the water of the Providence River in the foreground.

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# Sanctioned Competition Program

## JULY 2018

2018 Joint Base Lewis-McChord (JBLM) Homebrew Competition, 183 entries  
*Matthew Hibbs, Auburn, WA*

Concurso Engenheiro Cervejeiro, 19 entries  
*Carolina Dani Rinaldi, Videira, Brazil*

7th Annual Merrimack Valley Homebrew Competition, 233 entries  
*Vincent Mancuso, Medford, MA*

2018 Ohio Brew Week Homebrew Competition, 298 entries  
*Scott Pintabone, Easton, PA*

Indiana Brewers' Cup, 1509 entries  
*JD Vasher, Louisville, KY*

Amador County Fair Homebrew Competition, 99 entries  
*Gordon Mauger, Walnut Creek, CA*

North Dakota State Fair, 3 entries  
*Mike & Ashley De Le Vina, New Orleans, LA*

Lane County Fair, 24 entries  
*Mark Rockwood, Eugene, OR*

Concurso do 5º Festival das Confrarias de Cervejeiros Caseiros do Rio de Janeiro, 47 entries  
*Conceba, Baixada Fluminense, Brazil*

South Australian Brewing Club Winter Competition, 52 entries  
*Mark Roberts, Adelaide, Australia*

IV Concurso Nacional de Cervezas del Paraguay, 56 entries  
*Angel Alarcón, Asunción, Paraguay*

Copa Cerveza San Arnulfo, 20 entries  
*Juan González, Guadalajara, Mexico*

Worthogs Winter Beer Festival 2018, 30 entries  
*Rudie Buys, Johannesburg, South Africa*

Delaware State Fair Homebrew Contest, 62 entries  
*Gary Black, Arnold, MO*

The Niagara College Brewing Competition, 180 entries  
*Jamie Fowler, Kitchener, ON*

Red, White, and Brew, 83 entries  
*Samuel Staley, Pasadena, CA*

IPA Beachslap!, 9 entries  
*Lee Jae-Won, Busan, South Korea*

For What It's Worth, 175 entries  
*David Dodge, Carpentersville, IL*

Deer River Bar-B-Que & Brew Fest, 78 entries  
*Mark Chamberlain, Grand Rapids, MN*

[Continued >](#)



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Santa Clara County Fair Home Brew Competition,  
63 entries  
*Beast Bay Brewers, Alameda County, CA*

Fond du Lac County Fair Homebrew Competition,  
18 entries  
*Caleb Meinke & Ray Zabrowski, Madison, WI*

Western Brewers Conference Golden Promise  
SMASH, 12 entries  
*Dunc Blair, Auckland, New Zealand*

Canberra Brewers 2018 Club Comp 2, 53 entries  
*Stephen Lawford, Higgins, Australia*

AGWB Club Competition, 11 entries  
*Garth Mackey, Auckland, New Zealand*

Copa Cerveceria Mitad del Mundo, 507 entries  
*Noir Brett, Quito, Ecuador*

Keep Em Brewing, 13 entries  
*Robert Olsen, Ballwin, MO*

Single Shot Showdown, 8 entries  
*Nathan Fleming, Laramie, WY*

2018 Los Angeles County Fair Homebrew  
Competition, 288 entries  
*Michael Hale, Apple Valley, CA*

Tex Tubb's Reinheits-Revolt! Homebrewing  
Competition, 15 entries  
*Aaron Cahn and Connor Firth, Madison, WI*

7º Concurso Cervejeiro Caseiro Bierland, 38 entries  
*Daniel Ferreira de Cordova, Florianópolis, Brazil*

22nd Annual New Jersey State Fair Homebrew  
Competition, 334 entries  
*Eric Wembacher, Plainsboro, NJ*

QUAFF COC - Adjuncts, 18 entries  
*Oleg Shpyrko and Matt Barrett, San Diego, CA*

Iowa State Fair, 260 entries  
*Jeff Moyer, West Des Moines, IA*

Ventura County Fair Homebrew Competition,  
54 entries  
*John Anderson, Newbury Park, CA*

**AUGUST 2018**  
ASH HBOY Saison Mini-Comp, 19 entries  
*Kevin Lott, Chandler, AZ*

2018 Michigan Beer Cup, 571 entries  
*Chad Zornierlei, Hudsonville, MI*

Hogtown/Brick City 2018 Dry Stout Competition,  
14 entries  
*Lucas Frank, Ocala, FL*

Jeffco Fair & Festival Homebrew Competition,  
72 entries  
*Bernie Peterson, Lakewood, CO*

Best of the Bay, 212 entries  
*Jason Mantello, Bellingham, WA*

Laramie County Fair, 2nd Annual, 22 entries  
*Doug Schmidt, Cheyenne, WY*

Redstick Brewmasters Clash of the Carboys 2018,  
51 entries  
*Lawrence Cramer, Branch, LA*

Copa Cervejeira Concreva - Etapa Cascavel,  
52 entries  
*Jonas Geiss, Guarulhos, Brazil*

Auckland Home Brew Club BJCP Comp, 20 entries  
*Bradley Roberts, Auckland, New Zealand*

Dakota County Fair, 14 entries  
*Erin Musky, Farmington, MN*

Kentucky State Fair Homebrew Competition,  
271 entries  
*John Wurth, Louisville, KY*

Austin ZEALOTS Homebrew Inquisition,  
315 entries  
*Justin Holman, Richmond, TX*

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Limbo Challenge, 2018 Edition, 274 entries  
*David Rogers, Cypress, TX*

2018 Evergreen State Fair, 264 entries  
*Shelley Albright, Snohomish, WA*

Nebraska State Fair Beer & Wine Competition,  
136 entries  
*Thomas Stewart, Bellevue, NE*

BASH Only Extract Beer Competition, 27 entries  
*Paul Holder, Corpus Christi, TX*

Western Idaho Fair Homebrew Competition,  
70 entries  
*John McNeese, Nick McDowell & Evan Reed, Boise, ID*

Minnesota State Fair Homebrew Competition,  
578 entries  
*Ben Gentry, Woodbury, MN*

2nd MO MASH In, 117 entries  
*Josh Aune, St. Louis, MO*

WCB W-34/70 comp, 29 entries  
*Clinton Brookes, Perth, Australia*

Beer & Sweat, 246 entries  
*Keith Kost, Pittsburgh, PA*

Manitowoc County Fair Blue Ribbon Brew  
Competition, 68 entries  
*Alex Hartlaub, Manitowoc, WI*

Righteous Brewers of Townsville Annual  
Competition, 25 entries  
*Nigel Hassell, Thuringowa Central, Australia*

McHenry Rotary Blues Brews and BBQ, 17 entries  
*Christopher Van Eynde, Villa Park, IL*

Hard Redz Summer Brew-Off, 25 entries  
*Danze Nickle, Hutchinson, KS*

HHCBC Last Brewer Standing, 32 entries  
*Ken Dalton, Garden City, NY*

2018 Maryland State Fair Homebrew Competition,  
104 entries  
*Michael Heitt, Lutherville, MD*

SD Bomberos - 5th Annual Firefighter Homebrew  
Competition, 36 entries  
*Brian Trout and Doug Brown, San Diego, CA*

Red Brick Roads HomeBrew Competition, 33 entries  
*Brad Bassett, Pearl, MS*

Hogtown End of Summer 2018 Intraclub  
Competition, 13 entries  
*Joaquin Baralt, Gainesville, FL*

Summer Beer Dabbler Home Brew Contest,  
45 entries  
*Daniel Connelly, Plymouth, MN*

Malt Madness XII, 372 entries  
*Dan Copper, Glenolden, PA*

## SEPTEMBER 2018

Campeonato Chilebruers 2<sup>a</sup> Etapa, 44 entries  
*Johann Renner, Chillán, Chile*

Mboyere Beer Cup 2018, 102 entries  
*Alain Bloos & Alejandro Gonzalez, Posadas, Argentina*

Albion Area Fair, 12 entries  
*David Lesher, Albion, PA*

Delco Fest, 139 entries  
*Josh Aune, Alton, MO*

The Great Frederick Fair Homebrew Competition,  
114 entries  
*Tiffany Makowski, Frederick, MD*

Mevashlim 2018, 45 entries  
*Or Dahan, Beer-Sheva, Israel*

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**X04190**

Alpha-Acid %: 3.0 – 5.0  
Beta-Acid %: 5.0 – 7.4  
Total Oils (ml/100g): 0.8 – 1.9  
Aroma: green tea, floral, light pear



**X06297**

Alpha-Acid %: 13.0 – 17.0  
Beta-Acid %: 5.5 – 6.0  
Total Oils (ml/100g): 2.0 – 2.5  
Aroma: orange, vanilla, berry,  
tropical fruits



**X07270**

Alpha-Acid %: 15.0 – 18.5  
Beta-Acid %: 4.0 – 5.2  
Total Oils (ml/100g): 3.0 – 4.4  
Aroma: spicy, resinous, tangerine



**X09326**

Alpha-Acid %: 3.9 – 7.0  
Beta-Acid %: 4.5 – 7.0  
Total Oils (ml/100g): 2.0 – 2.6  
Aroma: berry, tropical fruit,  
grapefruit, herbal



**X10416**

Alpha-Acid %: 14.0 – 16.4  
Beta-Acid %: 4.6 – 5.7  
Total Oils (ml/100g): 2.0 – 4.5  
Aroma: orange, citrus, pine,  
mint, tropical fruits

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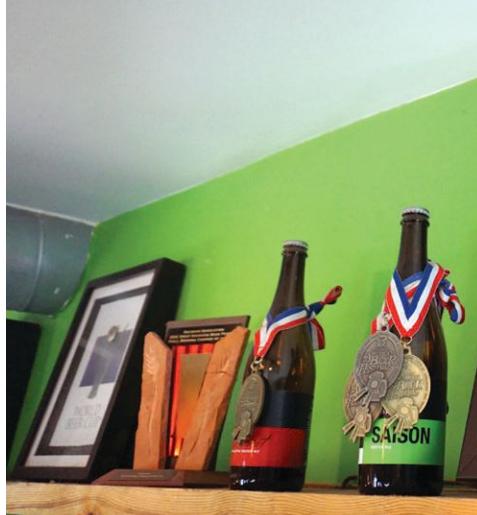
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# Gordon Schuck, Funkwerks

**A**t the 2017 Homebrew Con in Minneapolis-Saint Paul, Funkwerks cofounder and head brewer Gordon Schuck was serving Funkwerks beer and reminiscing about the gold medal he had won for his saison at the National Homebrew Competition (NHC) a decade prior. "I realized it had been almost ten years to the day when that happened," he recalls. Receiving that gold medal was, quite literally, a life-changing event for Schuck. "It was a milestone for me. It threw me into a whole new career."





Schuck had a degree in electrical engineering, but his involvement in bike racing had led to a job building titanium bikes for Moots, a high-end bike manufacturer based in Steamboat Springs, Colo. It wouldn't be the last time his hobby led to a career. Around 2003, he mentioned to a coworker that homebrewing sounded like it would be fun. The coworker, it turned out, had an unused homebrew kit sitting

around, which he gave to Schuck. He was quickly hooked. After "having a ball" with extract recipes, Schuck's first all-grain batch was a Celis White clone, "because it was one of the first beers that got me into craft beer." As an all-grain brewer, his engineering skills were put to good use. "Being an engineer, I wanted to have all the functionality of a commercial system." So he pieced together a heat exchange recirculating mash system (HERMS) with a programmable logic controller (PLC), "so I could basically hit a button in the morning and it would go through all its mash rests and do it all automatically."

Homebrewing wasn't a popular pastime in northwest Colorado at that time, so getting assessments of his beer was difficult. There were no active homebrew clubs in the area and Schuck didn't know any other homebrewers. In hopes of getting useful feedback, he entered some beers in the county fair and won best of show. The next year, he entered the state fair and won a pair of medals.

As his homebrewing abilities grew, so did his appreciation for different beer styles, particularly Belgian-style beers such as saison. "It was a style that really intrigued me because it was really hard to pin down," he explains. "You try different saisons and they're all completely different. I liked it because it enabled me to experiment and do a wide range of things with it."

Schuck had two favorite commercial saisons: Ommegang Hennepin and a saison produced by New Belgium Brewing at that time. He created a homebrew saison recipe that was "kind of a morph between the two of them. It had the common elements I liked in both." He entered the beer in the 2007 NHC and won a gold medal (see the Sept/Oct 2007 issue



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**“**  
I liked it  
[saisons]  
because it  
enabled me  
to experiment  
and do a  
wide range of  
things with it.

of Zymurgy for Gordon's NHC gold-medal-winning saison recipe).

With an NHC gold medal in hand, he began to entertain thoughts of pursuing a career as a professional brewer. To that end, he sold his house and entered the Siebel Institute brewing program. It was there that he met his future business partner, Brad Lincoln. Together, they put together plans for a unique, saison-focused brewery.

They decided to locate their business in Fort Collins, Colo., even though there were six breweries already operating in the town at that time. They reasoned that with their niche concept, they would do best in a location with a population that understood craft beer. By the end of 2010, Funkwerks was up and running.

"I didn't know how we'd be accepted, but it's worked out really well. The brewing community here was so open and receptive. I remember meeting Peter Bouckaert (New Belgium's Belgium-born former head brewer) for the first time. He was so excited that a saison brewery was opening in Fort Collins. When we had our soft opening, the tap room was packed with New Belgium people wishing us luck."

For some brewers, the transition from homebrewing to commercial brewing involves a steep learning curve. Not so with

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# Funkwerks Saison

## Classic Saison

Recipe courtesy Gordon Schuck, Funkwerks, Fort Collins, Colo.

<b>Batch size:</b>	5.5 US gallons (18.9 L)
<b>Original gravity:</b>	1.056 (13.8°P)
<b>Final gravity:</b>	1.006 (1.5°P)
<b>Efficiency:</b>	74%
<b>Color:</b>	4 SRM
<b>Bitterness:</b>	20 IBU
<b>Alcohol:</b>	6.8% ABV

### MALTS AND ADJUNCTS

8 lb.	(3.62 kg) Rahr Premium Pilsner
2 lb.	(907 g) Weyermann Pale Wheat
1 lb.	(454 g) Weyermann Munich I
8 oz.	corn sugar (optional; use if you don't have tight fermentation temperature control)

### HOPS

0.5 oz.	(14 g) Opal, 9% a.a. @ 60 min
0.5 oz.	(14 g) Opal, 9% a.a. @ 10 min
0.5 oz.	(14 g) Opal, 9% a.a. @ flameout
0.5 oz.	(14 g) US Crystal, 3.5% a.a. @ flameout
0.25 oz.	(7 g) Opal, dry hop 2 days
0.25 oz.	(7 g) US Crystal, dry hop 2 days

### YEAST

Wyeast 3726 Farmhouse Ale

### ADDITIONAL ITEMS

Add calcium chloride to the mash if necessary to target 50 ppm.

### BREWING NOTES

Mash in at 122°F (50°C) and hold for 20 minutes. Raise temperature to 149°F (65°C) and hold for 60 minutes. Raise temperature to 158°F (70°C) and begin runoff. If you're unable to step mash, mash grains at 149°F (65°C) for 90 minutes. Boil for 60 minutes, adding hops as indicated. Chill to 65°F (18°C), transfer to fermenter, pitch yeast, and oxygenate. Slowly raise temperature to 80°F (27°C) over 24–30 hours. Primary fermentation should take 5–7 days. Dry hop when activity subsides. Rack off dry hops after 2 days but don't crash. The yeast will continue to break down dextrins over the next week or so.

### EXTRACT VERSION

Replace malts with 6 lb. (2.72 kg) Pilsner liquid malt extract, 1 lb. (454 g) wheat liquid malt extract, and 0.5 lb. (227 g) Munich liquid malt extract. Dissolve malt extract in hot water, top up to desired boil volume, and proceed with the boil as above.

## GORDON SCHUCK'S TIPS FOR BREWING A CLASSIC SAISON

As a homebrewer, Gordon Schuck learned a lot about brewing saisons, earning him a gold medal in the 2007 National Homebrew Competition. His techniques translated well to brewing on a commercial scale. As cofounder and head brewer of Colorado's Funkwerks, his commercial saison has been awarded two gold medals and a silver at the Great American Beer Festival. Below, Schuck describes a variety of techniques for creating authentic saison.

### MALT

German Pilsner malt makes a great base layer. Use some wheat malt to get your protein levels up. I add wheat to just about everything. I also like a little Munich malt.

### HOPS AND SPICES

It's about subtlety. It's easy to go too far on a beer that ends up that dry. Hop at the end of the boil. We use German Opal, German Saphir and Crystal. We do a little bit of New Zealand hops because they tend to accentuate that tropical fruity character. We dry hop at a half ounce per 5-gallon level [0.75 g/L] with noble hops for aromatics.

If you do spice, keep it subtle. If you can taste the spice, it's too much.

### MASH

Start with a protein rest at 122°F (50°C) for 20 minutes. Bring it up to 149°F (65°C) for about an hour or so. From there, don't bother mashing out. Bring it up to 158°F (70°C) and start your runoff so you're still converting all the way to the kettle.

### ATTENUATION

The name of the game with saisons is bone dry: 1.004 (1°P) final gravity or lower is good. A little higher tends to be too full-bodied. I use different techniques to get the final gravity down. I use some sugar in the recipe but also make sure I bump up the oxygen. Sometimes I blend yeast at the start or add a second yeast after primary to dry it out. I also experiment with some wine yeasts.

French Saison yeast (Wyeast 3711 or similar) will chew through just about everything. Don't add sugar to it. If you're using another strain like Farmhouse (Wyeast 3726 or similar) which is less attenuative, you might want to bump up the sugar addition to 5 or 10 percent depending on the yeast strain and how attenuative it is. I use dextrose (corn sugar).

### FERMENTATION

It's really yeast dependent. Get to know your yeast and what it's going to put off at different temperatures. Just because it's a saison doesn't mean you need to go to 80 or 90°F (27 or 32°C). If you're using the Dupont strain (Wyeast 3724 or similar), Farmhouse (Wyeast 3726 or similar) or French Saison (Wyeast 3711 or similar), you can go that high.

My caveat is to start low, around 65 to 67°F (18 to 19°C). A lot of the precursors for fusel alcohols get produced at higher temperatures early, so keep the temperature low at first, then ramp up. Back when I was homebrewing, I had a heater I'd turn on after 24 hours. Don't come up too fast.

### CARBONATION

You really want it to be effervescent to accentuate the dryness. Shoot for 3.5 to 4 volumes of CO<sub>2</sub> (7 to 8 g/L) if you're bottling. Use Champagne-style bottles or something that can handle higher pressures. When I was a homebrewer, I bottled everything. I didn't have a kegging setup. I was old school.

Schuck. He used the techniques he had fine-tuned as a homebrewer to create Funkwerks Saison which, initially, was the only beer the fledgling brewery produced. In 2011, Funkwerks Saison earned a silver medal at the Great American Beer Festival (GABF). The next year it won gold, a feat it repeated in 2017.

While Funkwerks focused on saisons early on, Schuck returned to his early admiration of Belgian-style beers as well as sours when it came time to broaden Funkwerks' beer portfolio. If Funkwerks Saison put the brewery on the map, other medal winners have kept the spotlight on the Colorado brewery. In its eight-year history, Funkwerks has amassed a collection of eight total GABF and World Beer Cup medals, of which five are gold. In 2012, Funkwerks was named Small Brewing Company of the Year at GABF.

An early addition to the Funkwerks lineup was Tropic King, an 8% ABV imperial saison brewed with fruity New Zealand hops. It was intended to be a very pale beer, but when it was first brewed, a few extra bags of Munich malt were unintentionally milled in. "It turned out awesome," says Schuck. "The Munich malt provided a backbone for the New Zealand hops that wouldn't have been there otherwise. It was kind of a happy mistake."

Over the years, Funkwerks has ramped up its production of sour beers. "With a name like Funkwerks, we always knew we wanted to do some sour stuff. It took us a few years to get that off the ground. Our first kettle sour had no fruit in it. It wasn't terribly successful. We had one batch that didn't hit the gravity we wanted so we decided to add some raspberries and serve it in the taproom. People just went crazy for it." Raspberry Provincial is now the brewery's best-selling beer and was a 2014 GABF gold-medal winner.

A more recent addition to the Funkwerks sour beer lineup is Oud Bruin, a traditional Flemish-style sour brown ale. The beer is a blend of barrel-aged sour beers of different ages. Funkwerks Oud Bruin was a 2018 World Beer Cup gold-medal winner. A beer currently under development has its roots in Schuck's early homebrewing days. "We have a white beer in the works right now. I've been trying to recreate that first taste of the Celis White that I had way back when. It brings me full circle."

Dan Rabin is an award-winning beer and travel writer, author of the guidebook Colorado Breweries, and longtime homebrewer. He enjoys the active lifestyle in Boulder, Colo., his home of 30 years, and has recently taken up clarinet.



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**B**elgian beers enjoy something of a fierce reputation. It's certainly possible to find highly drinkable ales brewed in Belgium or in the Belgian style, but it's the high-gravity rock stars and sour celebrities that often command the most attention. Fortunately, there are plenty of subtler beers that offer great Belgian flavor in an approachable package.

In this installment of Commercial Calibration, our panel of judges examines two golden Belgian-style ales that deliver great flavor with two very different levels of alcoholic potency. →

# Judges' Score

## VICTORY GOLDEN MONKEY

Victory Brewing Co., Downingtown, Pa.

BJCP Category: 26C Belgian Tripel



GORDON STRONG



BETH ZANGARI

→ Golden Monkey is an iconic Belgian-style tripel from Victory Brewing Co. in Downingtown, Pa. Simple ingredients—Pilsner malt, dextrose, and Tettnang and Mittelfrüh hops—set up a clean canvas upon which the Belgian-style yeast strain can paint its signature esters and phenols.

Golden Monkey's tremendous drinkability and relatively light body, combined with 9.5% ABV, make it famously dangerous. In fact, Victory invites drinkers to submit Monkey-fueled stories at [respectthemonkeyvictorybeer.com](http://respectthemonkeyvictorybeer.com). Available year-round in bottles, in cans, and on draught, please drink responsibly when creating your own Monkey Tale.

San Marcos, California's The Lost Abbey crafts its hop-driven Devotion blonde ale with a dry finish and a modest 6% ABV. Inspired by monastic Belgian single ales (sometimes called *enkel* or *patersbier*), it has touches of rustic farmhouse character, clove and pepper phenols, with hay, honey, and earthy overtones.

Full- to medium-gold, it sports a rocky white topping of foam and is served year-round at the brewery tasting room. The Lost Abbey suggests that Devotion's dry finish and yeast-derived spice profile make it well-suited to pairings with spicy dishes, from fish tacos to Thai food.

### AROMA

Pils malt aroma with a sugary sweetness—moderately strong. Light spice of hops and/or phenols plus a soft alcohol warmth. Very light esters. Pils malt dominates the other aromatics. **(9/12)**

### APPEARANCE

Tall, frothy white head, retained well. Somewhat cloudy, which detracts from the visual impact. Medium yellow color. **(2/3)**

### FLAVOR

Sweet, clean Pils malt, finishing medium-dry. Medium bitterness is lower than most Belgian examples but may be more suitable for American palates. Spicy flavor; moderate hop flavor with yeasty phenols. Fresh. Light alcohol flavor. Yeast complexity is restrained. Very light esters. **(15/20)**

### MOUTHFEEL

Highly carbonated with mouth-filling bubbles. Medium-light body, but seems a little fuller with all those bubbles. Warming but not burning. **(4/5)**

### OVERALL IMPRESSION

Better than most American versions but falls short of the dry bitterness and complexity of the best Belgian examples. However, it is very deceptive in its 9.5% ABV strength—that is certainly true to the classic Belgian character. **(7/10)**

**TOTAL SCORE 37/50**

### AROMA

Sweet orange and lightly acidic lemony esters; biscuity malt, with some grassy notes and an expression of clove spice phenols. No overt hop aroma. **(8/12)**

### APPEARANCE

Brilliant golden, fine foam forms biscuity, persistent head with a pearly off-white surface. Fine bubbles continually rise; foam leaves lace on sides of the glass. **(3/3)**

### FLAVOR

Complex, with lots of citrus, pear, banana and Bubble Bubble gum, with allspice phenols mid-palate. Light, crisp malt flavor is dominated by fruit and spice. Alcohol flavor is present with some acetate notes in the finish. No hop flavor, but balancing bitterness lingers at the end. **(16/20)**

### MOUTHFEEL

Alcoholic warmth, medium light body with effervescent, prickly carbonation, and clean, crisp finish. **(5/5)**

### OVERALL IMPRESSION

Billed as a Belgian Tripel, the higher, more evident alcohol and more pronounced fruit and spice are more appropriate to a Belgian golden strong ale in my humble opinion. Lots of fruit and spice up front. Aromas of citrus, but banana and pear in the flavor give greater complexity than is suggested by the initial impression. This is a wonderful fruit and cheese after-dinner drink, or a favored replacement for Champagne at a Sunday brunch. Refreshing, but not light in the modern sense. **(7/10)**

**TOTAL SCORE 39/50**



# Judges' Score DEVOTION BLONDE ALE

Port Brewing Co./The Lost Abbey, San Marcos, Calif.

BJCP Category: 25A Belgian Blond Ale



DAVE HOUSEMAN



SCOTT BICKHAM

## AROMA

Spicy hops and yeast-derived phenols dominate. Little in the way of fruity esters. Malt backbone is subtle with just a hint of Pils malt. No overt alcohol, DMS, or diacetyl. Clean and inviting. **(10/12)**

## APPEARANCE

Rich gold color. Brilliant clarity. Big, dense, rocky white head with excellent retention. Well carbonated. **(3/3)**

## FLAVOR

The spicy hop flavor, yeast-derived pepper and clove, sweet Pils malt, and noticeable alcohol yield a balanced, flavorful beer with a bit of sweetness and lingering bitterness. Hop bitterness is, however, quite assertive. Alcohol is subtle and not hot. Esters are quite low and miss an opportunity to showcase that side of the style. No DMS. No diacetyl. **(16/20)**

## MOUTHFEEL

Medium body. Lingering bitterness. Smooth, not creamy. Good carbonation yields a spritzy character. Some alcohol warming. **(4/5)**

## OVERALL IMPRESSION

Clean, well-balanced. Yeast phenols are right on, but more perfumy esters would really nail the style. The spiciness from hops and yeast is there, with the hop bitterness a little heavy and hop aromatics a little light. This beer went exceptionally well with a charcuterie board of country pâté and funky soft cheeses. **(9/10)**

**TOTAL SCORE 42/50**

## AROMA

Moderately spicy and peppery phenols are mainly from the yeast, but hops contribute. Low alcohol notes with a very light solvent element join low levels of citrus and banana. Bready malt and a little honey-like sweetness. **(9/12)**

## APPEARANCE

Gold color, moderately high carbonation. Excellent clarity. Foam has uniform texture and excellent retention. **(3/3)**

## FLAVOR

Emphasis is again on yeast phenols, including low clove and higher spicy, peppery notes. Light bready and honey-like malt lingers into a medium-dry finish. Light herbal hops provide a moderately low bitterness. Very low citrus and banana and some alcohol. **(16/20)**

## MOUTHFEEL

Medium body combined with moderately high carbonation provides pleasant creaminess. There is some alcohol warmth, but at the low end for a Belgian blond. A little astringency from yeast phenols lingers a little too noticeably after swallowing. **(4/5)**

## OVERALL IMPRESSION

This was an enjoyable and interesting beer to judge. Balance leans a little too strongly towards the spicy phenols. Malt, hops, and alcohol play appropriate supporting roles, but the finish could be a little crisper and slightly better attenuated. Great job with carbonation and conditioning, which were both spot-on for a Belgian ale. **(7/10)**

**TOTAL SCORE 39/50**



## JUDGING

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 commercial beers (or meads or ciders) using the BJCP scoresheet. We invite you to download your own scoresheets at bjcp.org, pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration.

## OUR EXPERT PANEL

Includes Dave Houseman, a Grand Master VI level judge and competition director for the BJCP from Chester Springs, Pa.; Sandy Cockerham, a Grand Master IV level judge from Indianapolis, Ind. and an associate exam director and Midwest Representative for the BJCP; 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 IX judge, principal author of the BJCP Style Guidelines, and president of the BJCP board who lives in Beavercreek, Ohio. This installment of Commercial Calibration features a guest review by Beth Zangari, a Grand Master level judge from Placerville, Calif.



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# A Zymurgist Abroad



**S**ome readers might know that I currently live in Berlin, Germany. When my wife was offered a two-year overseas work opportunity in mid-2017, AHA leadership were kind enough to let me continue editing *Zymurgy* remotely. As soon as I left Colorado, National Homebrew Competition coordinator John Moorhead took my office because that's how we roll at AHA HQ. It's the smallest office in the AHA's Boulder suite, but the breathtaking view of the back alley more than compensates.

Thanks to modern technology, I can manage every aspect of the magazine using barely more computational power than is needed to land a 747. I videoconference

with coworkers several times a week, sometimes green-screening the background with festive space cats and dramatic fireballs. The eight-hour time difference means I'm often enjoying my first sips of evening helles just as Boulder is polishing off its second cup of coffee.

That time difference also means conducting some meetings and phone calls at unholly hours when I would much rather be sleeping. For example, I join the monthly AHA Governing Committee teleconference at 3:00 a.m., during which I practice a strict no-beer policy. A bit of Scotch, yes, but no beer.

But speaking of beer...

Everything necessary to edit an issue of *Zymurgy* (not pictured: coffee, beer).

## BREWING IN BERLIN

When we moved to Berlin, I imagined that being surrounded by great German beer might mean taking a little break from homebrewing. I entertained this delusion for about four months, after which time I picked up a secondhand electric countertop rig and a couple of fermenters. Thus began the inevitable trips to the hardware store to make any number of "improvements." Once bitten, never cured, I suppose.

My processes and equipment have necessarily changed to fit inside a small Berlin apartment. I mash and boil in the same vessel, which, thanks to Germany's 230-volt circuits, can bring 20 liters (5.28 gallons) to a rolling boil in about the same time it takes to say *Geschwindigkeitsüberschreitung*. Lacking a threaded water spigot, I found a way to attach a garden hose to the bathroom sink for wort chilling. And I've become more practiced with water adjustment to deal with hard water that graces all it touches with a generous deposit of limescale.

I've long preferred kilograms and liters to pounds and gallons because math problems in school were much easier that way. It's futile to design metric recipes in the US, though, where hops are sold in 1-ounce increments and malts are weighed by the pound. It just inflicts a lot of additional math, and if one is going to bother with inconvenient reckoning anyway, one might as well just deal with units of measure that were based on the king's left forearm (I don't know).

My inner metric junkie has flourished in Europe, though. Bottling day calculations are a piece of cake. Crates of German beer conveniently hold 20 half-liter bottles, so packaging a 20-liter batch requires exactly two crates. None of this multiplying by 128 and dividing by 12—but 22 for the big bottles!—imperial nonsense.

Living in a small apartment has forced me to re-engineer bottling day, and I've learned space-saving lessons that I will take back with me to Colorado. Plastic crates stack nicely, and what is a bathtub if not a large sink? I'll probably always prefer kegging, but I won't hesitate as much when I want to bottle a batch to save for later.

## SPREADING THE AHA LOVE

I've also used my time in Europe to represent the AHA at homebrewing events and meet homebrewers from across the Continent and beyond. In November 2017, I attended the first annual Brew Con London (see Editor's Desk, Jan/Feb 2018), where I highlighted the history of the AHA, described trends in the American homebrew scene, and encouraged attendees to experiment with their beer.

This grassroots event was organized by passionate homebrewers looking to build a tighter community of British beermakers, and I'm pleased to say they held their second annual Brew Con this past November, just before this issue went to press.

In April 2018, I attended the annual meeting of the Asociación de Cerveceros Caseros Españoles (ACCE)—the national homebrew club of Spain—in Cádiz, a seaside town south of Sevilla. I gave a talk on

brewing historical beer styles for competition, which was translated in real time from English to Spanish. John Palmer was there, too, and he's just as much a homebrew celebrity in Spain as he is in America.

Right: Official logo of the 2018 Congreso ACCE.

Below: Just four of the 166 beers available on tap during the three-day Congreso ACCE.



CERVEZA	ESTILO	IBU	ABV	ID	AUTOR
1 GARABATO TALE ALE	PALE ALE	5%	4.8	38	CABURRAS
2 BLACK NZ IPA	BLACK IPA	6.9%	6.1	59	CESARTOR
3 ECO-KK	DOUBLE IPA			75	MARYSCOURT
4 SANABRIA	AMERICAN BROWN ALE			81	VIRYATOFI

Andalucía's relaxed pace of life meant conference attendees enjoyed dinner around 9:00 p.m., with homebrew taps not really flowing until 11. Conference organizers kept the beer going until 3:00 in the morning or later, and more than a bit of scheduling was necessary to make it through the 166 kegs and nearly 300 bottles awaiting consumption. For those eager for a drink earlier in the day, a self-serve "24-hour corner" dispensed beer at all hours.



Zymurgy's sober-as-a-judge editor-in-chief at the Irish National Homebrew Club's 2018 BrewCon in Dublin.

The American Homebrewers Association and Ireland's National Homebrew Club have enjoyed a close relationship for several years (see Sept/Oct 2016 for Richard

Lubell's "Homebrew in the Jar" and Chip Walton's "An American in Dublin") and attending the Club's 2018 gathering in Dublin was a highlight of my year. Mitch Steele presented a great talk on IPA, and I talked about the history of lager beer. The Irish club also organized a brew day at Galway Bay Brewery, where I personally witnessed the fervor with which Mitch dumps hops into a kettle.

Closer to home, I made it to a great community event at Stone Brewing Berlin last May, but I'll let another AHA member tell you more about that. See Aaron Brussat's article on page 54 of this issue of Zymurgy to learn more about the Berlin homebrew scene and the Slosch! competition held at Stone Brewing World Bistro & Gardens – Berlin, Marienpark.



Stone Brewing World Bistro & Gardens – Berlin is housed in an old gasworks facility.

Germany's national homebrew club, the Vereinigung der Haus- und Hobbybrauer in Deutschland e.V., held its annual meeting last October in Lüneburg, a town of about 75,000 people in Lower Saxony. The small but enthusiastic gathering included a nifty homebrew marketplace where several German supply shops had set out piles of tempting ingredients and equipment. There, I met Jan Brücklmeier, a BJCP judge and AHA member whose recently published volume *Bier Brauen* ("Beer Brewing") could be considered the German-language sibling of Palmer's *How To Brew*. Look for an article from Brücklmeier in an upcoming issue of Zymurgy.

I've tasted many great beers in the last year and a half, but a strong porter in Cádiz kept me coming back for more. I contacted homebrewers Rafa and Sergio at the ACCE, and they kindly shared their recipe, which

Brew  
This!



# Black Hole Sun

## Baltic Porter

Recipe courtesy Rafa Palacios and Sergio Medina, Cádiz, Spain.

**Batch volume:** 5 US gal. (18.9 L)

**Original gravity:** 1.099 (23.6°P)

**Final gravity:** 1.030 (7.6°P)

**Color:** 53 SRM

**Bitterness:** 43 IBU

**Alcohol:** 9.3% by volume

### MALTS AND ADJUNCTS

13.4 lb.	(6.08 kg) UK pale malt
1 lb.	(454 g) Simpsons Brown Malt
1 lb.	(454 g) Castle Malting Château Abbey Malt
1 lb.	(454 g) dextrin malt
1 lb.	(454 g) flaked oats
1 lb.	(454 g) flaked wheat
0.5 lb.	(227 g) Weyermann Carafla III malt

### HOPS

0.5 oz.	(14 g) Chinook, 13% a.a. @ 60 min
0.5 oz.	(14 g) Simcoe, 13% a.a. @ 15 min
0.75 oz.	(21 g) Chinook, 13% a.a. @ 10 min
1 oz.	(28 g) Simcoe, 13% a.a. @ 5 min

### YEAST

White Labs WLP830 German Lager Yeast, Wyeast 2124 Bohemian Lager Yeast, or Fermentis SafLager W-34/70 (starter or multiple packs)

### BREWING NOTES

Mash at 156°F (68.9°C) for 45 minutes, followed by a 10-minute mash-out at 168°F (75.6°C). Lauter, sparge, and collect enough wort to achieve a 5-gallon (18.9-liter) batch post-boil. Boil 60 minutes, adding hops as indicated. Chill wort to 50°F (10°C) and pitch yeast. Ferment to completion, conducting a 2- to 3-day diacetyl rest at 60°F (15.6°C) near the end of fermentation if needed. Lager near freezing for at least 4 weeks before packaging.

### PARTIAL-MASH VERSION

Reduce the UK pale malt to 4 lb. (1.81 kg) and mash with the remaining malts and adjuncts for one hour at 152°F (66.7°C). Drain wort from grains, fully dissolve 6.25 lb. (2.83 kg) Maris Otter malt extract, and top up with reverse osmosis water to desired boil volume. Proceed with boil and continue as above.



Heideschinken paired with Mälzer-Märzen from the Mälzer Brau- und Tafelhaus in Lüneburg, Germany

I'm now sharing with you. Lace up your Docs and brew a batch of Black Hole Sun today. You won't regret it.

Dave Carpenter is editor-in-chief of Zymurgy.

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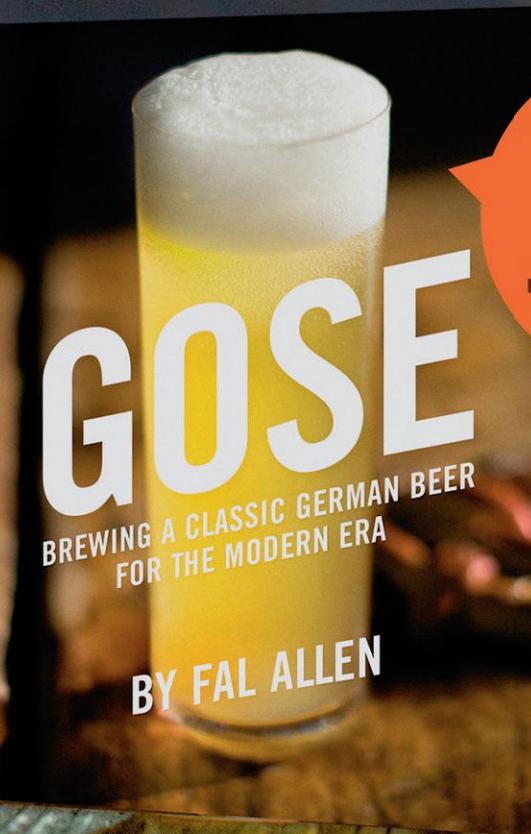


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**Zymurgy** (ISSN 0196-5921, USPS 018-212) is published bi-monthly by the American Homebrewers Association, a division of the Brewers Association, with headquarters at 1327 Spruce Street; Boulder, Colorado 80302. The Editor is Dave Carpenter with address same as above. The annual subscription price is \$38.00 and \$43.00 with a membership to the American Homebrewers Association. The publication is wholly owned by the Brewers Association, a not-for-profit corporation. The purpose, function and not-for-profit status has not changed during the preceding twelve months, and the average number of copies of each issue during the preceding twelve and the actual number of copies published nearest to the filing date (September/October 2018 issue) are noted below.

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# Collective Brewing on Long Island

**O**n July 14, 2018, the Association of Long Island Homebrew Clubs, with the help of John LaPolla of Brooklyn homebrew shop Bitter & Esters, organized a book talk and brew day with homebrew guru John Palmer at The Brewers Collective in Bay Shore, N.Y. John's talk was in conjunction with the newly updated and revised fourth edition of his seminal homebrew book *How To Brew*.

## A COLLABORATIVE BEER CULTURE

Three clubs make up the Association of Long Island Homebrew Clubs: Brewers East End Revival (BEER), Long Island Beer and Malt Enthusiasts (LIBME), and Handgrenades Homebrew Club (HHBC). Our association was formed specifically for Homebrew Con 2016 in Baltimore but has since blossomed into the largest regional collection of craft beer enthusiasts. Collectively, our clubs have between 250 and 300 dues-paying members, in addition to thousands of others who subscribe to our social media outlets.

Long Island boasts more than 35 breweries, not including Queens and Brooklyn—yes, they're on the same island, but don't ask—with Suffolk County serving up more breweries than any other county in the state. That's impressive given the size of Suffolk compared to other New York counties.

I mention this because almost half the

breweries on Long Island have come from former members of these three clubs. If you include sales reps, head and assistant brewers, and the myriad other positions associated with craft beer, club membership provided a stepping stone for many of those responsible for the amazing craft beer we enjoy on Long Island.

The Brewers Collective is one such innovative local beer company. Formerly a small homebrew club of just nine people, members used their dues and group meetings to lay the foundation for a collectively owned commercial brewery. They were easily recognized by their large coffin jockey box and unique tap handles built from military shovels and rifle stocks.

The new brewery expanded quickly but has maintained ties to local homebrewers and craft beer enthusiasts, strengthening its experimental, adventurous ethos. Its motto is "Collectively owned. Fiercely independent.", with a logo that features a sickle-crossed beer bottle in a not-too-subtle nod to the former Soviet Union.

## COLLECTIVE DECISIONS

The Brewers Collective graciously lent us their ingredient inventory and pilot system to brew on our day with Palmer. We created our recipe on the fly, using only what was available from the Collective's inventory. Anyone who has taken part in a group

brew session knows that some of the best (and worst) beers result from spontaneous decisions, especially after a few homebrews. At the very least, they're always memorable.

After scouting the inventory, Palmer and our members assembled a grain bill that was closest in style to a Vienna lager. We went with Amarillo hops instead of German varieties and selected a Kolsch-style yeast. It was incredible to stand next to Palmer and discuss what we would brew (see the recipe for Strength in Numbers on page 14).

Almost everyone I know who takes craft beer seriously owns a copy of *How To Brew*. In fact, many in our club became interested in brewing and craft beer by reading books from Randy Mosher, Ray Daniels, Gordon Strong, Stan Hieronymus, George Fix—the list goes on. These authors helped build a thriving craft beer scene in many places across America, including a rather excellent one here on Long Island.

The brew day went well, and I will always fondly remember standing with Palmer and dozens of fellow club members, in a brewery that was once a homebrew club, as we collectively decided what to brew.

*Andrew Luberto is a frequent contributor to Zymurgy and a member of the Long Island Beer and Malt Enthusiasts homebrew club.*



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