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# The Parting Glass

This is my final issue as editor-in-chief of *Zymurgy*. It has been my honor and privilege to proffer AHA members six issues of *Zymurgy* annually for nearly eight years—thank you, readers, for your support and for entrusting me with 48 installments of our venerable publication. Departure is bittersweet, but change is as inevitable as the evening's last call.

I have enjoyed meeting many of you at Homebrew Con™ in Baltimore, Minneapolis, Portland, Providence, Pittsburgh, and San Diego; at the Great American Beer Festival® in Denver; in taprooms far and wide; and at club meetings on-screen and in person. I've met you in cities as far away as Galway, Alsfeld, Cádiz, Reykjavík, and Tijuana. (There are dozens of us. *Dozens!*)

My own clubs notwithstanding, my last opportunity to meet with AHA members during my tenure as editor-in-chief took place at the end of October when I spoke at a meeting of the San Antonio Cerveceros. If ever you find yourself in San Antonio, Texas, on the last Monday of the month, do yourself a favor and have lunch at Mi Tierra. Then, belly full of enchiladas, take an afternoon nap before attending a Cerveceros meeting the very same evening.

San Antonio Cerveceros club members could not have been friendlier or more hospitable and, between you and me, these folks can *brew*. I had the privilege of judging their lager competition the day before the meeting, and the winning helles bock was as rewarding to drink as any commercial example I've tasted.

Another highlight was a hazy IPA shared by two first-time attendees at the people's-choice-style competition held during the meeting. Only after said hazy had taken first place did I learn of the seasonal secret ingredient—candy corn.

You don't need me to tell you that candy corn is the worst of all the candies, one that stretches the very definition of *candy* well beyond its practical limit. But it worked surprisingly well in this hazy IPA, which means there's hope if you still have some of this Halloween abomination taking up space that would be better devoted to peanut butter cups. Prop up some 1318, measure out the NEIPA holy trinity (Galaxy, Mosaic, and Citra, natch), and get to work!

If you do it right, the finished beer should boast an almost unnatural orange glow. It might even win you a prize.

In addition to having given candy corn a higher purpose on at least one occasion, the Cerveceros enjoy a mutually beneficial relationship with the Alzafar Shriners. The Shriners offer resources and a meeting space for the club, and the club supports efforts that benefit the Shriners' charitable causes. Proceeds from the annual Polar Plunge, for example, go to Shriners Hospital Texas and the Alzafar Transportation Fund, which helps cover the cost of transportation, lodging, and meals for patients from South Texas and Northern Mexico who receive treatment at Shriners Hospitals for Children in Texas.

Spending time with the San Antonio Cerveceros was an immensely rewarding way to wrap up my time as *Zymurgy* editor and a reminder of why our association and this publication are so important. The revolution Charlie Papazian and Charlie Matzen set in motion in 1978 remains very much relevant today.

Homebrewers do amazing things. Thank you, homebrewers, for everything you do.

Thank you, homebrewers, for all you've done for me.

Goodnight, and joy be to you all.

*Dave Carpenter was editor-in-chief of Zymurgy from 2016 to 2023. He lives in Fort Collins, Colo., with his wife and cat and is a member of the Weiz Guys and Liquid Poets homebrew clubs.*

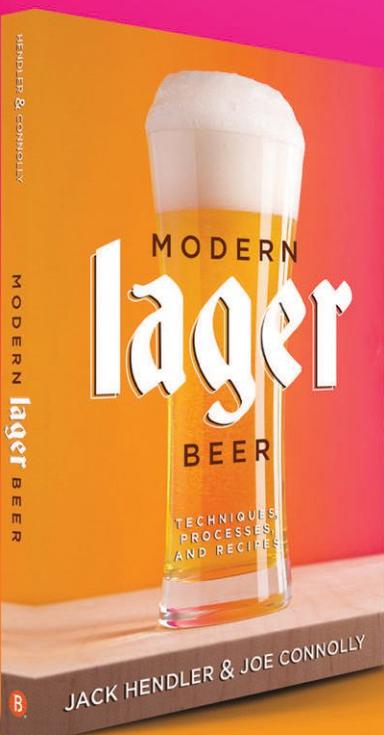




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## LEVELING UP

At the Great American Beer Festival® (GABF) Pro-Am competition, every entry has already medaled at an AHA/BJCP-sanctioned competition. Professionals select these beers to brew commercially in partnership with the homebrewers who created them and compete at the highest level.

By Kristen Kuchar



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## BIERSCAPES

The very best times in the world of beer usually involve great beer, but there's more to it than that. It's also about the company you keep and the environment you are in. If you have those three things, you might just create a great memory.

By Ryan Pachmayer



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## STOWE-AWAYS IN VERMONT

A tiny town in northern Vermont has become the epicenter of a craft beer Mecca, the home of New England IPAs and wunderbar German lagers. At Idletyme, von Trapp, and The Alchemist, Stowe lives up to its reputation for friendliness.

By Mark Pasquinelli



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## MASTER HOMEBREWER PROGRAM

The Master Homebrewer Program (MHP) is changing the competitive brewing landscape in the United States. The program aims to connect brewers from around the country through competition; at the same time, it's reshaping how the nation's top brewers compete.

By Charlie Scudder



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## GADGETS 2024

Today's homebrewers enjoy unprecedented access to purpose-built brewing equipment, but the do-it-yourself spirit remains very much a part of homebrewing culture. Zymurgy's annual gadgets feature is dedicated to that spirit.

By Zymurgy readers

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# zymurgy®

(zī'mərjē) n: the art and science of fermentation, as in brewing.



## ON THE WEB

Find these homebrewing recipes and more on our website @ [HomebrewersAssociation.org/homebrew-recipes](https://HomebrewersAssociation.org/homebrew-recipes)

# NOW ON Tap

## BJCP News

The Beer Judge Certification Program (BJCP) has a new president and vice president. Sandy Cockerham and Gail Milburn, who are also members of the AHA Governing Committee, are the first woman-identifying individuals ever to lead the BJCP as president and vice president, respectively. Then-vice president Sandy Cockerham stepped up to the BJCP president role following outgoing president Dennis Mitchell's resignation on September 1, 2023, to devote more time to his family and career. On September 15, BJCP representatives elected Gail Milburn as vice president. Additionally, Brewers Publications author and longtime AHA member Gordon Strong was named the BJCP's first-ever style director.

The AHA helped start the BJCP in 1985. Today, the organization has more than 8,000 active judges.

Sandy Cockerham



Beer Judge

PROGRAM



Gail Milburn



## SNAFU's Home Fermentation Day 2023 AN ALL-DAY FERMENTATION EXTRAVAGANZA

By Kim Prezbindowski, SNAFU president

It all started when I texted the vice president of the Southern Nevada Ale Fermenters Union (SNAFU):

*Are you available on Saturday, August 5th? And would you be willing to host a Fermentation Day event? Can you teach us how to make fermented hot sauces and vinegars?*

Our VP, Jason Coleman, who knows everything yeast and fermentation, quickly got back to me with an all-day session lineup:

1. Kombucha
2. Cider, wine, and vinegar (which later became just vinegar)
3. Pepper mashes and fermented hot sauce
4. Sourdough

Once things got fleshed out, the first three sessions were allocated two hours, and the fourth session would be given a bit longer, since sourdough included baking time and “sampling the product.” Participants would get to take home

fermentation kits to continue the process at home. Price points and deadlines were set so that everything needed could be ordered in time.

- Kombucha Workshop,**

**9:00 a.m.:**

\$30 fee. In this workshop you will receive a 1-gallon glass container and spigot, a kombucha SCOBY or “mother,” and your choice of tea to make a 1-gallon batch of “running” kombucha. There will also be several kombuchas to taste as we go along.

- Vinegar Workshop,**

**11:00 a.m.:**

\$30 fee. In this workshop you will receive a MOV (mother of vinegar). You will sample several vinegars, and you will help bottle and take home either an apple cider vinegar or red wine vinegar.

- Pepper & Hot Sauce Workshop,**

**1:00 p.m.:**

\$50 fee. In this workshop you will receive a 1-gallon fermenter, lid, and airlock. An assortment of peppers will be available for you to select, prepare a brine, and start a hot sauce/pepper ferment. You will take your ferment home. This will be enough for 15 to 25 bottles of fermented hot sauce.

- Sourdough Workshop,**

**3:00 p.m.:**

\$20 fee. In this workshop you will receive a sourdough starter. You will learn to feed and maintain your starter. We will finish up by taking pre-readied dough and shaping and baking a pizza.

For SNAFU members and other members of the Las Vegas community, Saturday, August 5, 2023, started with a kombucha class led by vice president Jason Coleman at his house. Jason presented participants with their materials and talked about a SCOBY (symbiotic culture of bacteria and yeast), and what it consists of—lactic acid bacteria (LAB), acetic acid bacteria (AAB), and yeast. You can use either sweetened black tea or sweetened green tea to house your SCOBY and produce kombucha, and you can either make your own tea or buy ready-made tea from a store. Jason’s kombucha SCOBY resides in black tea, so the recipe participants used was as follows:

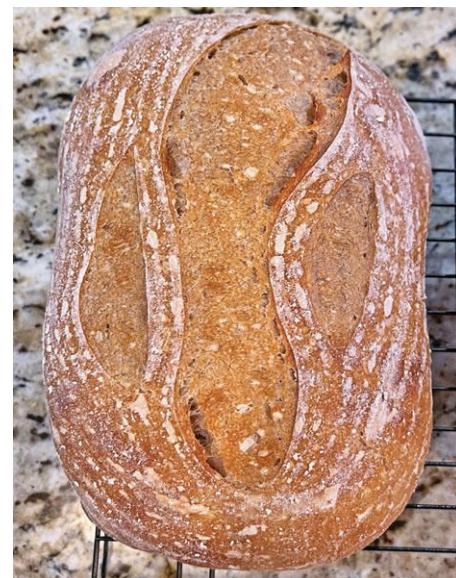
6 tea bags (4 black tea bags, and 2 tea bags of their choice), 1 cup of sugar, 1 cup of backslop (kombucha from an already-

made batch), and a 4 oz SCOBY. Jason provided us all with a SCOBY. But if you don’t have a Kombucha master in your club, you can order a SCOBY (or kombucha starter kit) on Amazon. This recipe was for a 1 gallon fermenter (preferably a gallon jar with a spigot). When it’s done fermenting in about 3-4 weeks, you can bottle and carbonate your kombucha with fruit - 1/4 to 1/3 cup per 16 oz bottle. Or, if you choose not to use fruit, use 1 teaspoon of sugar per 16 oz bottle instead. NO BEER BOTTLES! Beer bottles are too thin, and you will create a bottle bomb. Instead, use a Grolsch-type bottle, or commercial kombucha bottles. After bottling, store 1-2 days on the counter at room temperature, then move them to the fridge.

Session two was a vinegar class. Jason started this session with a menu of vinegar drink options and then proceeded to make what people asked for. He presented us with two options for the vinegar. Option 1 was to start from scratch, while option 2 was to start with homemade wine, beer, or cider to transform into vinegar. Participants were given the option of making a “one and done” product (take home and use what was made that day) or starting a “running vinegar.”

For a running vinegar, you need a porcelain crock with a stainless-steel spigot, which participants ordered on their own after the event. To make vinegar, start with finished wine, mead, or beer. For alcohol over 9% ABV, you need to dilute the ethanol with spring water or filtered water, and you’ll find several online calculators available for this purpose. Add





your MOV (mother of vinegar), cover the jar with a tight-weave towel or coffee filter, and secure with a rubber band. Check the starting pH for your records.

Watching the pH drop shows the progress of acetic acid production. If you prefer to store your MOV, you can put it in a glass jar (place parchment paper between metal lids and jar, as vinegars can be corrosive) or food grade plastic container in just enough vinegar to cover the MOV. This can be stored in the fridge for a year or so between batches. To learn more about the history of vinegars, starting vinegars from scratch, and making vinegar drinks, consult *Homebrewed Vinegar: How to Ferment 60 Delicious Varieties, Including Carrot-Ginger, Beet, Brown Banana, Pineapple, Corncob, Honey, and Apple Cider Vinegar* by Kirsten K. Shockey.

And then there was hot sauce. It's good Jason had a large kitchen island, as the hot sauce class maxed out at 10 jars, and even more participants, all eager to learn. The island was covered in a variety of peppers, onions, and carrots. Participants were given cutting boards, gloves, and knives, and told they could choose their own ingredients. Direction was given as to which peppers were hot and which were milder.

Some participants chose by color, using only red ingredients or only green ingredients. Other participants chose by character of the ingredients. Chopping began, and all that could be heard was the steady chopping sound of knives on cutting boards, and the occasional sniffle or "Whew!" The air filled with hot chile vapors, and everyone present started blinking hard, feeling the burn. Participants threw their chopped ingredients into a 1-gallon fermenter, smashed it down, and added brine.

After fermenting for a couple of weeks, the cloudy veggie water was ready to be blended and turned into hot sauce. You

need an industrial-strength blender, though, as a regular blender will yield something more like salsa. A "Vitamix"-type blender does the trick nicely. And, of course, you need plenty of chips for sampling!

We finished off the day with an introduction to sourdough breads. Jason and fellow SNAFU member Diana Hull, who teaches a culinary class to middle school students, presented four full pages of printed material and spent almost four hours with us. They took us through the process of making sourdough breads and maintaining starters.

Did you know that people who have a gluten sensitivity have a better chance of enjoying sourdough breads? This is because the longer fermentation time involved with naturally fermented bread makes it easier for our systems to digest. Sadly, those who suffer from celiac disease should still avoid sourdough breads. Here are a few other interesting facts we learned in our sourdough workshop:

- You can dehydrate a starter, flake it, and store it in a zip-top bag.
- Gluten provides the structure of baked goods. King Arthur unbleached all-purpose flour, for example, is 11.7 percent protein, which makes for good bread since it provides a good gluten structure.
- Autolyse, according to King Arthur Baking, "is the gentle mixing of the flour and water in a bread recipe, followed by a 20 to 60 minute rest period." Autolyse also helps build flavor.
- Some other great resources include the Puratos Sourdough Library ([questforsourdough.com](http://questforsourdough.com)), the Bread Bakers Guild of America ([bbga.org](http://bbga.org)), the Fresh Loaf ([thefreshloaf.com](http://thefreshloaf.com)), Central Milling Co. ([artisanbakingcenter.com](http://artisanbakingcenter.com)), and King Arthur Baking ([kingarthurbaking.com](http://kingarthurbaking.com)).



I learned so much on Home Fermentation Day, and so did everyone who attended. At the end of the day, people were asking Jason to do it again. It was such a big hit!

In the days that followed, participants started posting pictures on the SNAFU Discord of everything they'd been making since that day. Beautiful breads, bottled hot sauces, and bottled vinegars now have their own channel on our Discord.

At our September meeting, we had a Hot Sauce Showdown, featuring about 20 different bottles of hot sauce, all competing to be declared the winner. We even had hot sauce bottle exchanges happening. Home Fermentation Day 2023 for SNAFU has become the event that keeps on giving.

# Mexico's Ever-Growing Craft Beer Movement

By David J. Schmidt

The most popular beer in the United States is now a Mexican brew, with Modelo Especial having replaced Bud Light in 2023. Unfortunately for millions of American drinkers, all they know of Mexican beer is such bland yellow lagers. In fact, the country is currently in the midst of a modern craft beer revolution.

There are currently more than 900 craft breweries in Mexico. While most are concentrated in a handful of states—Jalisco, Baja California, Nuevo León, and Mexico City stand out—they are spread across the nation, from the northern border to the Yucatán Peninsula.

Some of these craft breweries have been around for decades. Notable are Mexico City's Cosaco, Minerva in the city of Guadalajara, and multiple breweries of the Baja peninsula. For years, Tijuana Brewery has been the proud owner of an authentic German-style beer hall, complete with Old World architecture.

Many others are brand new, having popped up late in this century. According to the Mexican Brewers Association (ACERMEX), 310 new craft breweries opened in Mexico in 2018 alone!

I'm old enough to recall a time when it was not so easy to find local craft beer in Mexico. During my first trip to Mexico City in 2006, I had a hard time finding even commercial beer on tap. Most of my drinking involved bottles of bland commercial beers, while the most "craft" experience I had that year took place in the remote mountains of Oaxaca, where I met a moonshiner who brewed from sugar cane. (See "The Quest for the Moonshiner's Yeast," Sept/Oct 2021.)



Over the following years, local friends introduced me to some of the best beer bars in town. We visited Salón Corona, a no-frills beer hall with locations across the capital. Along with the light and dark draught pourings of their own house beer, they offered delicious *botana* snacks: seafood tostadas, ceviche, and tacos and tortas of crispy *al pastor* pork roasted on a spit.

Another hot spot for craft beer was El Depósito, which served up a rich variety of Mexican brews on tap, alongside a fridge well stocked with a healthy selection of bottles both domestic and foreign, from as far away as Belgium, Russia, and Japan, as well as many California mainstays such as Lagunitas and Stone. Meanwhile, gastro-pub El Zazá offered six or eight domestic beers on draught, alongside a hearty menu that featured wood-fired pizzas, steamy wedges of spiced potato, crisp salads, and Argentine-style empanadas.

Over the past 10 years, as I've lived in Mexico City, I've seen a plethora of new breweries and brewpubs sprout up across the country. In the hipstery neighborhoods

of Roma and Condesa, a new tasting room seems to pop up almost weekly. Meanwhile, the northern border state of Baja California continues to host a thriving craft beer scene. Recently, the *San Diego Reader* magazine featured an article by Matthew Suárez that beautifully showcases several breweries in the region. Suárez focuses on Mexicali, the capital city of Baja California, which is now home to enough breweries to merit a rollicking, Hunter S. Thompson-esque romp through the hot desert town.

Given the rapid growth of the craft beer movement in Mexico, it was only a matter of time until drinkers would get curious about replicating such complex beers at home. Join me in an upcoming issue of *Zymurgy* for a deep dive into the world of homebrewing in Mexico.

Brew  
This!



# Gordon's Alive! G&T Beer

Recipe by Andrew Sanders

To learn more about the inspiration for this beer see Last Drop on page 72 of this issue of *Zymurgy*. Note that dilution from the addition of tonic water at packaging yields an alcohol content of 5.6% by volume, which is lower than what the indicated original and final gravities would otherwise suggest.

**Batch volume:** 4.5 US gal. (17 L)  
(pre-tonic addition)

**Efficiency:** 80%

**Original gravity:** 1.078 (18.9°P)

**Final gravity:** 1.021 (5.3°P)

**Bitterness:** 44 IBU

**Color:** 9 SRM

**Alcohol:** 5.6% by volume  
(7.4% pre-tonic addition)

## MALTS

12 lb. (5.44 kg) Simpsons Maris Otter malt  
1 lb. (454 g) caramel malt, 40°L

## HOPS

0.5 oz. (14 g) Summit, 17.5% a.a. @ 60 min

0.5 oz. (14 g) Summit, 17.5% a.a. @ 10 min

0.6 oz. (17 g) Chinook, 13% a.a. @ 5 min

## YEAST

White Labs WLP002 English Ale

## ADDITIONAL ITEMS

4 oz. (113 g) juniper berries, secondary

0.25 oz. (7 g) coriander, secondary

zest of 1 lime secondary

enough gin to cover the above botanicals

1 gal. (3.8 L) tonic water at packaging

## BREWING NOTES

Mash at 149°F (65°C) for 60 min and 167°F (75°C) for 10 min. Boil 60 minutes, adding hops as indicated. Ferment at 65°F (18°C) for 10 days.

While beer ferments, crack juniper berries and coriander and soak in gin with lime zest during fermentation. The amount of gin required is just enough to cover the botanicals.

After fermentation is complete, add gin tincture to wort and allow to condition for 5 days. Before packaging, let 1 gal. (3.8 L) tonic water go flat and add to finished beer.

Brew  
This!



# BritHop

Recipe by Andrew Sanders

To learn more about the inspiration for this beer see Last Drop on page 72 of this issue of *Zymurgy*.

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

**Efficiency:** 75%

**Original gravity:** 1.040 (10°P)

**Final gravity:** 1.007 (1.8°P)

**Bitterness:** 47 IBU

**Color:** 4 SRM

**Alcohol:** 4.4% by volume

## MALTS

7 lb. (3.18 kg) Muntons Pilsner malt

3 lb. (1.36 kg) Simpsons Maris Otter malt

## HOPS

1 oz. (28 g) Target, 11% a.a., first wort

0.33 oz. (9 g) East Kent Goldings, 5.5% a.a.  
@ 20 min

0.33 oz. (9 g) East Kent Goldings, 5.5% a.a.  
@ 15 min

0.33 oz. (9 g) East Kent Goldings, 5.5% a.a.  
@ 10 min

## YEAST

White Labs WLP830 German Lager

## ADDITIONAL ITEMS

1 tablet Whirlfloc @ 5 min

## BREWING NOTES

Mash at 149°F (65°C) for 60 min and 167°F (75°C) for 10 min. Boil 60 minutes, adding hops and Whirlfloc as indicated. Ferment at 65°F (18°C) for 10 days under 12 psi (0.8 bar) of pressure.



# E-JUDGING

DISCOVER THE ADVANTAGES OF USING A DIGITAL PLATFORM IN YOUR NEXT COMPETITION

**T**he beer world is constantly evolving, with new techniques, ingredients, and styles emerging all the time. This innovative spirit extends to how we judge beer competitions, with electronic judging (e-judging) gaining popularity among beer judges and competition organizers. While some still prefer the traditional method of using paper scoresheets, there are many compelling benefits to embracing the digital age in beer competitions.

The transition from paper to digital interfaces not only simplifies the judging process but also opens up a world of possibilities for both judges and participants. One of the main advantages of e-judging lies in its efficiency. With no more physical limitations, judges can easily navigate between entries, record scores, and provide feedback with just a few taps and clicks.

#### ENHANCED EFFICIENCY AND ACCURACY

With paper scoresheets, judges need to manually enter their scores into a scoresheet or database, which can be time-consuming and prone to errors. E-judging platforms eliminate this step, automatically recording scores and calculating overall rankings. This automation not only saves valuable time for judges but also reduces the risk of human error.

In addition to efficiency, e-judging offers enhanced accuracy. Paper can become blurred or torn, making it difficult to read judges' handwriting—which can be a challenge in itself, even if the integrity of paper is preserved. E-judging platforms ensure that scores are clear and legible, eliminating any potential ambiguity.

#### REAL-TIME FEEDBACK AND INSIGHTS

E-judging platforms provide real-time feedback for both judges and brewers. Organizers can monitor judges' progress and provide assistance if needed. Brewers can also access their scores and feedback as soon as they are published by the organizer, allowing them to identify areas for improvement in future competitions more quickly. This process often took weeks when scoresheets had to be scanned and posted.

Experience e-judging with BAP - Beer Awards Platform, a leading e-judging platform trusted by beer organizations globally. With over four years of experience in more than 900 competitions in 41 countries, the platform offers a user-friendly interface in six different languages, catering to all competition needs.

Augusto Fontes, partner and software engineer at BAP, highlights, "BAP was developed by members of the brewing community, who understand the nuances and needs of this community. Our solutions aim to benefit all actors involved in a beer competition—organizers, judges, and brewers—

contributing to fostering more efficient competitions." We invite you to follow the example of major beer competitions, such as the National Homebrew Competition, and experience the convenience and efficiency of e-judging through the platform in your next beer competition.

Here's to the next chapter of brewing competitions—where the best of tradition and innovation converge in a toast to excellence.

#### ABOUT BAP

Bear Awards Platform (BAP) is a platform crafted by professionals from the brewing industry. Having previously managed events using traditional pen-and-paper methods for years, we have created a user-friendly solution that enhances the experience for organizers, judges, and participants alike. BAP is led by a multidisciplinary team committed to providing beer competition organizers with an optimal solution across all implementation stages.

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DIRECTOR'S

Cut

BY JULIA HERZ



# American Homebrewers Association Turns 45

45

**O**n December 7, 2023, the American Homebrewers Association (AHA) turned 45. That's a lot of beers since 1978. In four-and-a-half decades, the world has changed for the better because of the AHA's existence, with homebrewers around the world setting the stage. →

The AHA has fueled the craft beer movement and, even more relevant, catapulted the modern pastime of homebrewing. Yup, that's what we did. In 1978, *The New York Times* published an article titled "Beer Is Most Popular of U.S. Bar Drinks"<sup>1</sup>, but we know what a dismal time for beer it was. Back then, the United States had fewer than 100 breweries and not many homebrewers.

I'll go on the record and say the two best things about beer in 1978 were the founding of the AHA and the signing of H.R. 1337 into law. H.R. 1337, signed by President Jimmy Carter, was the game-changing act that authorized "the home production of beer and wine without federal taxation."<sup>2</sup>

The AHA's anniversary is also an ode to the staying power of this very publication, *Zymurgy*, the preeminent magazine for homebrewers. Pronounced "zī'm ər jē," the title means "a branch of applied chemistry that deals with fermentation processes (as in wine making or brewing)."<sup>3</sup> Led by homebrewers Dave Carpenter, editor-in-chief for the past eight years (see more in Editor's Desk); associate editor Amahl Turczyn; art director Jason Smith; Duncan Bryant, web editor for HomebrewersAssociation.org; yours truly; and an engaged team of not-for-profit professionals and seasoned contributors, we are your dedicated advocates.

Homebrewers must know that we put the *f* in *fun* when it comes to beer. Yes, you are a part of history, influence, and ongoing innovation. Since anniversaries are about celebrating and offering presents, here are some goodies for you.

- » **Inaugural issue of Zymurgy**—Did you know you can download the first-ever issue of *Zymurgy*? It's a blast from the past and a fascinating read to flip through a digital version of this 12-page stapled pamphlet.<sup>4</sup>
- » **Digital archives**—AHA members enjoy exclusive access to the *Zymurgy* digital archives dating to 2000. Dig in at HomebrewersAssociation.org.
- » **History of the AHA**—This video gem from 2018 explains just how far we've come.<sup>5</sup>
- » **U.S. Senate resolution celebrating the AHA's 40th anniversary**—It's from our 40th birthday, but, hey, a resolution is a resolution.<sup>6</sup>



Inaugural issue of *Zymurgy*.  
December 1978.

- » **Search term trends**—Will fermentation and the pastime of cosmic zymurgists become the broader practice of homebrewers? We are, indeed, hearing a lot from our members about fermenting beyond beer. Check out the history of searches since 2004 (the earliest provided) comparing *homebrewing* and *fermentation*.<sup>7</sup>
- » **Zymurgy Live**—Circa 2023, it was appropriate that the AHA start a new monthly webinar series.<sup>8</sup>
- » **The Smithsonian documents homebrewing**—This Homebrew Con session introduced the research and collecting work of the American Brewing History Initiative at the Smithsonian's National Museum of American History. The initiative, supported by the Brewers Association and the AHA, built a new archive of the histories of American homebrewing and craft beer. Listen in as curator Theresa McCulla, Ph.D., presents new research on early homebrew clubs, computing clubs, and the entrepreneurial and intellectual "ferment" of northern California in the 1970s.<sup>9</sup>

With each anniversary, there is even more meaning, more batches of beer, and more accomplishment under our belts. What about your homebrew anniversary? When did you start brewing, and how do you annually celebrate? Please consider sharing your story by emailing me at [ahaed@brewersassociation.org](mailto:ahaed@brewersassociation.org).

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*Julia Herz is executive director of the American Homebrewers Association. You can follow Julia's homebrew talks and travels on Instagram @ImmaculateFermentation.*



# Where's the Wheat?

Dear Zymurgy,  
I have a quick question regarding Dive Bomb Bee Wheat (Sept/Oct 2023). I'm a bit confused as the recipe does not list any wheat malt. Is the recipe incomplete as printed, is the name misleading, or do I misunderstand what makes a wheat beer? The recipe looks interesting, and I plan to give it a try, minus the bee addition.

Thank you,  
Keith Eisel  
The Villages, Fla.

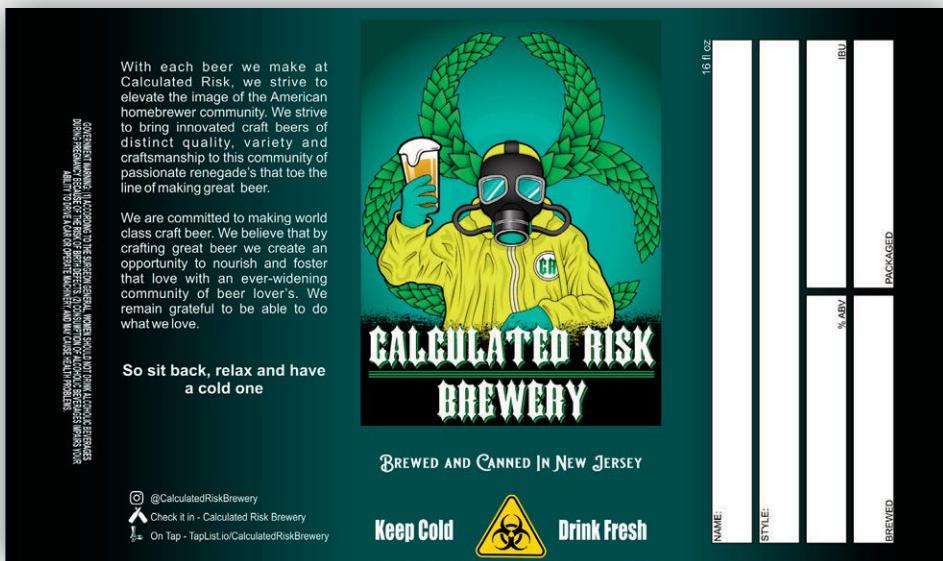
Thanks for pointing this out, Keith.  
Sometimes one gets so focused on recipe minutiae that one loses sight of the bigger picture, which is exactly what happened here! The recipe printed is actually for the author's Dive Bomb blonde ale, which was, indeed, the one Andrew was brewing when the bee met its untimely end. Hope you enjoy it even without the optional addition!



## DEAR ZYMURGY

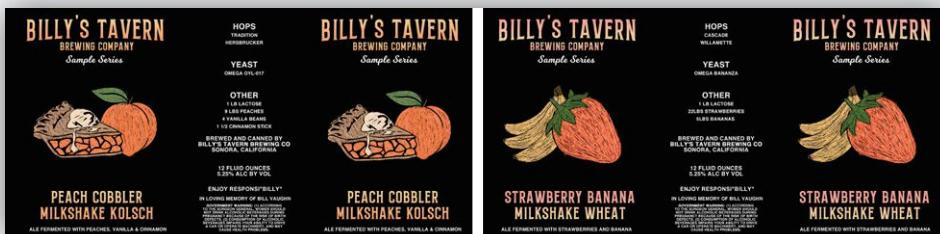
Send your Dear Zymurgy letters to [zymurgy@brewersassociation.org](mailto:zymurgy@brewersassociation.org). Letters may be edited for length and/or clarity.

## YOUR HOMEBREW LABELS



Just wanted to have an awesome all-in-one label that could work with anything I brewed. I had help with the labels from a fellow Instagram brewer @beerandgraffiti, blending my ideas with his ability to work his graphic artistry. Cheers.  
(Homebrewer 5 years, AHA member 5 years)

Christopher Akocs  
Garden State HomeBrewers  
Clifton, N.J.



As a big fan of unique flavors in beers, I made this Strawberry Banana Milkshake Wheat ale with more than 20 pounds of strawberries and five pounds of bananas. It was my first attempt at making a beer like this so I had to make sure I designed a cool label for the can! The beer turned out great. Sweet start with a tart finish. My goal is to brew beers you won't find on shelves! (Maybe one day you will, though.)

I got chastised by other homebrewers in a homebrewing group on Facebook because I added lactose to a Kolsch. They thought I was the devil, but I think the best part about homebrewing is the ability and option to experiment if you want to. Peach Cobbler Milkshake Kolsch (right) turned out to be very tasty with great peach flavor and hints of cinnamon and vanilla. It was a fan favorite among friends and family around Thanksgiving.  
(Homebrewer 2 years, AHA member 2 years)

Jordan Vaughn, Sonora, Calif.



Our homebrewery name is taken from our daughter Isabella's nickname from when she was younger. We used to call her Itchy Belly all the time. I can't quite remember where it came from but I assume she was always snacking. Today, she and her brother, Alex, both help me in the garage on brew day and they also help me make homemade sodas. (Homebrewer 10+ years, AHA member 5 years)

Anthony Palmisano  
Ale and Lager Enjoyment School (ALES)  
Spring Hill, Fla.



### SUBMIT YOUR LABEL

Do you make custom labels for your homebrew? Want it featured here in the pages of Zymurgy for all to see your work?

Upload your label to [HomebrewersAssociation.org/your-homebrew-experience](https://HomebrewersAssociation.org/your-homebrew-experience) and we will take it into consideration!

SCAN ME



## YOUR HOMEBREW EXPERIENCE

Show us your labels, brewing/fermentation day, who you brew with, the ingredients you include, what special processes you use, and how you enjoy the final product of beer and beyond.

Upload photos of your homebrew-related fun at  
[HomebrewersAssociation.org/your-homebrew-experience](https://HomebrewersAssociation.org/your-homebrew-experience)



Poolside brewing in SoCal. Hope (a Labradoodle) is always current when the big pots come out.

**Peter Martins**

(Homebrewer 10 years, AHA member 7 years)  
Murrieta, Calif.



The Rig and Gang of Padawan Brewing. Four friends and neighbors with a passion for great beer.

**David Epley**

(Homebrewer 7 years, AHA member 7 years)  
Woodinville, Wash.



Went all electric and scaled up to 30 gallon kettles to keep up with demand for more homebrew.

**Evan Sherlock**

(Homebrewer 23 years, AHA member 9 years)  
Olde Town Mash Paddlers  
Arvada, Colo.



Harley Barley likes to hang out whenever I'm homebrewing.

**Bryan Lima**

(Homebrewer 16 years, AHA member 15 years)  
Cocoa, Fla.



### SHARE YOUR BEST HOMEBREWING SHOTS!

Homebrewing is all about fun and sharing. We would love to show others in the community what your homebrewing/fermentation experiences look like. Upload photos of your homebrew related fun at [HomebrewersAssociation.org/your-homebrew-experience](https://HomebrewersAssociation.org/your-homebrew-experience) and you may see it in the pages of Zymurgy!

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**Keith Villa, Ph.D.**, is brewmaster and co-founder of Colorado-based CERIA Brewing Company, a trailblazer in the rapidly growing market of non-alcoholic, cannabis-infused beers. After earning his Ph.D. in brewing from the University of Brussels in Belgium, Keith began his 32-year career as founder and head brewmaster at Blue Moon Brewing Company, an operating unit of MillerCoors. Since then, this beer doctor has gone on to brew several award-winning beers and continues to set new standards and push the boundaries of flavor, styles, and ingredients. Keith also is co-founder and head brewer of family business Donavon Brewing Company based in Arvada, Colorado.

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# Kasuzuke

## Japanese Sake Lees Pickles

By Amahl Turczyn

**T**sukemono (漬物) is the ancient Japanese artform of pickling, and it's as essential and ubiquitous to everyday Japanese cuisine as rice and miso soup.

Everyone eats a small dish of pickled vegetables, and the methods of pickling are endless. From the relatively simple techniques of shiozuke (pickling with salt) and satozuke (pickling with sugar) to the complex and nuanced nukazuke (pickling in a carefully maintained, *Lactobacillus*-infused bed of rice bran called a *nukadoko*), most tsukemono require fresh vegetables, time,

and patience, along with the knowledge and experience to preserve the food through fermentation without letting it spoil. For homebrewers who put the time and effort into producing their own version of traditional rice wine or sake, one pickling technique stands out: *kasuzuke*.

Sake *kasu* is what's left of a sake fermentation after the wine has been separated from the solid sediment. It's a valuable food product in its own right, and at places near sake breweries in Japan (and even in the US), it can usually be purchased fresh from



the brewery directly, or it may be packaged and sold at nearby markets. It's mostly rice solids, koji, yeast, and residual alcohol, but it imparts a wonderful umami flavor when paired with other foods, as well as a warming effect from the alcohol.

Kasu generally comes in two forms, depending upon the equipment used to separate the solid sediment from the *jiu*, or “wine” (though sake is technically a fermented grain beverage closer in process and freshness to beer). Large regional sake breweries have a mechanical press that works so efficiently that the resulting kasu is nearly dry; these thin sheets of pressed lees are called *itakasu* and usually need rehydrating before culinary use. They can often be found vacuum-packed or frozen in markets. By contrast, smaller “craft”-style nano producers and home sake breweries using less efficient means of pressing the lees end up with a wetter paste-like product called *namakasu* (or “fresh kasu”) which contains more of the wine and is therefore more flavorful. It is the preferred form for use in the kitchen.

Many culinary options are available including using namakasu as a marinade for chicken or fish—kasu-marinated salmon, for example, is out of this world. The rice starch in kasu lends itself wonderfully to Western-style breads—pizza dough with a moderate addition of kasu bakes up nicely crisp, with an almost rice cracker-like texture, and that mellow, umami flavor makes for a fantastic pairing with other umami-rich pizza toppings such as mushrooms or sausage. When used as a preservative for pickling, you get the delicate sake flavors that infuse light-flavored vegetables such as daikon radish, cucumber, or summer squash.

For pickling, the usual procedure is to blend the namakasu with a few other necessary ingredients to make a marinade

“  
When used as a preservative for pickling, you get the delicate sake flavors that infuse light-flavored vegetables such as daikon radish, cucumber, or summer squash.

called *kasudoko*. These include a slight addition of salt or shoyu (soy sauce), miso (fermented soybean paste), and either sweetened sake or mirin.<sup>1</sup> If you are lucky enough to be able to purchase hon-mirin from a store, or have a supply you've brewed yourself, the sweetened sake addition becomes unnecessary. Since pickling is a form of preserving food—Buddhist monks apparently served *kasuzuke* to samurai warriors during Edo-period war time as a form of nonperishable sustenance<sup>2</sup>—and foods with a lower moisture content resist spoilage, we'll want to add salt to the vegetables to draw out initial moisture before adding them to the *kasudoko* mixture. (It isn't much different from the initial salting of shredded cabbage to make sauerkraut.) Give the vegetables a light sprinkle of sea salt and rub to coat before placing them in a colander for an hour to desiccate and drain.

The ratios of namakasu, mirin, miso, salt, and sugar vary, but for every pound of kasu, plan on using approximately 4 tablespoons of mirin, 3 tablespoons of shiro (white) miso, and 1 tablespoon of sea salt. If mirin is not available, substitute 2 tablespoons of white table sugar and 2 tablespoons of sake. Mix this to an even consistency, and you are now ready to coat your vegetables or proteins. Once blended, it should be a thick paste. If it's too dry and chalky, say closer to the consistency of spackle, add more sake until it's closer to peanut butter. You will find that as you pickle with it (you can reuse it if you are only pickling vegetables and not meat) it will continue to draw moisture from the veggies and become steadily more liquid. Eventually, you will have to discard the *kasudoko* and start over.

Pat them dry with a towel to remove most of the salt solution, and then spread the

Kasuzuke ingredients: homemade miso and namakasu, homegrown summer squash, Korean radish, cucumbers, and carrots.



Vegetable pieces salted with flaked sea salt.



Vegetables submerged in *kasudoko*.



# Kasuzuke

Recipe by Amahl Turczyn.

**Batch size:** 1 lb. (454 g)

## KASUDOKO

- 1 lb. (454 g) namakasu, homemade or from your local sake brewery
- 4 Tbsp. (60 mL) mirin (OR 2 Tbsp. sake plus 2 Tbsp. sugar)
- 3 Tbsp. (44 mL) shiro miso, homemade or from your local Asian store
- 1 Tbsp. (14 g) sea salt, plus more for drawing moisture from the vegetables

## OTHER INGREDIENTS

A colorful assortment of trimmed, washed, and dried vegetables for pickling. Suggestions include whole, peeled carrots; whole cucumbers; sliced daikon or Korean radish; cabbage; summer squash; bell pepper; and mini or sliced eggplant.

Meats to marinate in the kasudoko include boned, skinned fish filet; boned, skinned chicken thighs; pork loin or tenderloin; or boneless pork cutlets.

## EQUIPMENT

Colander

Lidded non-reactive container

## PROCEDURE

For every pound of kasu, blend in 4 Tbsp. mirin, 3 Tbsp. shiro (white) miso, and 1 Tbsp. sea salt. If mirin is not available, substitute 2 Tbsp. white table sugar and 2 Tbsp. sake. Mix this to a thick paste the consistency of peanut butter. Trim, wash, and dry the vegetables. If they are thicker than about an inch, slice them before pickling. Rub them with about a teaspoon of sea salt per pound of vegetables. Place in a colander while the salt draws out moisture, for about an hour. Pat dry. Spread prepared kasudoko into the covered container. Press vegetable pieces in to fully submerge, then top off with more kasudoko and cover. Refrigerate 8 to 12 hours or until crisp and flavorful. Scrape most of the kasudoko off, slice into bite sized pieces, and serve. Kasudoko can be reused for veggies until it gets watery, or until it is used as a marinade for meats.



Finished kasu pickles.

kasudoko in a nonreactive lidded container and press the vegetables into it. You want to make sure the pieces are completely submerged, with no air pockets, maximizing contact with the kasudoko. Then cover the container tightly and store it in the fridge.

Vegetables to pickle might include whole, peeled carrots; whole cucumbers; sliced daikon or Korean radish; cabbage; summer squash; bell pepper; and eggplant. As mentioned, proteins are usually chicken and fish, but boneless pork loin or center cut chops are also excellent, and cook up with a delectable, mellow sweetness after marinating. Katsudon with kasu-marinated pork is something you need to try at least once. Be sure to discard the kasudoko after using it for meat, although it's OK to do a couple of rounds of vegetable pickling in it first, and then reuse it one last time for proteins.

Cover and refrigerate the pickled vegetables for 8 to 12 hours, and then remove one, take a slice, and taste it. It should have a light, mellow sweetness and crisp texture. Larger vegetables may take a few more hours to pickle. When done to your satisfaction, scrape off most of the kasudoko, slice into bite-sized pieces, and serve. The kasudoko can go back into

the fridge until you are ready to make your next batch. Chicken, fish, and pork portions can marinate for up to a day in the fridge before they are ready to go on the grill.

## RESOURCES

1. Mirin is basically a sweet Japanese cooking wine made from rice, itself a rich source of umami, and something the culinary-minded sake brewer should ferment at home at least once. It's easier to make at home than sake, and while you can buy regular mirin at most Asian markets, "hon-mirin" or "true mirin" is more difficult to find. It has much more flavor and is higher in alcohol, usually 8 to 10% ABV. Brewing your own hon-mirin will not only give you a plentiful supply for use in the kitchen (it keeps very well), but you can then press the lees from your batch and use them for kasuzuke.
2. JustOneCookbook.com (blog). Lots of wonderful knowledge here on making various forms of zuke and other Japanese cuisine.

Amahl Turczyn is associate editor of Zymurgy.



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# There's Something in the Water



**B**efore I was born, my parents and my mother's parents went in together and bought a small cottage on the southern bank of the Rappahannock River. And I mean *small*—small footprint, few rooms, and lacking a few modern conveniences common in most 20th-century domiciles. The little cottage had a big reputation, though. Apparently, the head of a local logging crew lived there, and the man liked to have his crew over on Friday nights to pick up their week's pay, get riled up, and raise

By J. K. Bywaters

Cain. The few neighbors down at the end of the road weren't sorry to see the last of him, though they might've wondered what kind of commotion they could expect when my family bought the place and began an extensive renovation. My father designed and built a large L-shaped addition around two sides of the place, doing most of the work himself. He called in a mason to build a fireplace and chimney (and apprenticed himself to the man for the job, so he could learn a little more about the craft), and he called in some men to dig a well.

My mother was proud of the family's good luck and the cooperative, *we're-all-*

*in-this-together* spirit that led them to cast their lots together in the first place. She was proud of my father's skill and his work. But she liked to tell the story of the well not only for the mythic aspects of the tale, but also, I believe, because she was proud of the very water.

When the men who had come to dig the well had finished the job and brought some water up to the surface, they gathered around and sipped it from a special shovel kept clean for the purpose. In my mother's retellings of the moment, this simple implement practically became a silver spade. The first man to raise it to his lips and drink smiled and nodded as he passed it to the next, who took a

draught himself. “Oh, this is sweetwater!” he exclaimed. “You’ve hit sweetwater!” To hear my mother tell it, the little crew of three or four men stood facing one another for several minutes, passing the spade, exclaiming over the water, and congratulating my family on their good fortune and themselves on their part in the play.

Although “sweetwater” is most commonly used as a picturesque synonym for freshwater, these men clearly meant something more by it. They must’ve dug quite a few wells, and must’ve known their business. What they’d hit was something rare and wonderful in their eyes, and they wanted the family to know it.

My mother liked to tell the story, but although she held the water in some esteem, that was as far as it went for her. My grandmother, however, felt strongly enough to save the large half-gallon glass bottles that orange juice came in at the

time, and to carry along four or five of them any time she and Pop went to the cottage. She appreciated the taste, yes—it was the only water she’d drink by itself. She said it made the best iced tea, and she was right. Decades out, and I’ve never had better in my life. She even swore that it kept her “regular.” On the times I went along with my grandparents for a weekend at the cottage, we’d drive home again with the back floorboards of Pop’s LTD filled with capped bottles full of what Grandma called “river water,” with dish towels wrapped around them to keep them from clattering together. Obviously, the “river water” wasn’t drawn from the big river, but from the family’s well.

I had already brewed a batch of ale from snowmelt before I repeated the tried and true “I gotta see it for myself” experiment of brewing the same recipe for an English IPA both with and without the Burton salts. The snow-

melt saison was mostly for the romance of the thing, but my all-other-factors-being-equal IPA comparison was to satisfy my curiosity. How much of a difference does it make?

As a novice brewer, I was learning for myself the truth that *everything* made a difference. It remains a profound simplicity. The difference of no more than a few degrees in the mash or in the ferment. How long you boil and how quickly you cool. Whether or not you make a yeast starter. Sanitation. It shouldn’t be surprising that any of these things can and do make a huge difference in the finished product, given that most of us reliably brew with variations on the same four ingredients.

*I shouldn’t have been surprising, but I was surprised, because I could taste the difference.* I can’t swear that both batches rested at precisely the same temperature, but the strike water for both batches was the same temperature when I mashed in with the same grain bill. It’s conceivable that the fermentation temperature within the two carboys was a degree off, though this seems highly unlikely given that they sat next to one another in the same chef’s pantry under identical light-blocking covers. But my money’s on the salts.

Wondering about the water, and remembering my snowmelt saison, I was keen to go beyond the local municipal water supply. It wasn’t long after that that I recollected the stories of the sweetwater, and it wasn’t long after *that* that I made a trip to the river cottage with as many carboys as would fit under the liftgate. (As an aside: I regret to say that one of the carboys did not survive its inaugural voyage back from the cottage well. Five gallons of water glugging its way at high speed out of a cracked carboy makes a very interesting sound, but the game is not worth the candle.)

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Search “water profiles of US cities,” and six of the top nine results are from websites devoted to brewing. This makes sense. Knowing your water and knowing what’s in there is a good place to start. People in general and serious brewers in particular have paid attention to their water for a very long time. When I started brewing, though, much of the prevailing wisdom in print still advocated for making your water profile match the water profile of a city or region well known for the style of beer you were brewing. Pilsen, Dublin, and Burton-upon-Trent were held up as exemplars of places where the water made the beer. Ergo, if you meant to brew a stout, your first step ought to be synthesizing water that was Dublin-by-design; for an IPA, Burton-upon-

*Although “sweetwater” is most commonly used as a picturesque synonym for freshwater, these men clearly meant something more by it.*



Trent-by-proxy. I don't mean to make it sound like pure contrivance; admittedly, there was a sort of romance in the notion of treating the very water in such a way as to make it more like the water found in aquifers thousands of miles away. Perhaps the alchemical mystique of the operation was intriguing, but it's ultimately a false orthodoxy. It takes for granted that the water profile in any given locale has calcified (*see what I did there?*), never changing over time and remaining constant throughout the region. It also relies on the patently false assumption that the brewers in these regions always took their water as-is, and never treated it in any way. But the nose knows, and so do the taste buds. Water that smelled or tasted off had to be purified or treated in some way to make it palatable. Early brewers the world over must've readily reached the conclusion that the water does make the beer insofar as the taste and/or smell of the water had an obvious impact on the flavor and aroma of the beer. Time and again, through trial and error, they acted accordingly. Even the breweries in Burton upon Trent were known to treat their water, and in fact, had to defend their right to do so against spurious claims that treating the water amounted to adulterating their beer. Hence, holding up the water profile of any particular region as a necessary starting point or as beyond reproach is a false trail in my opinion. For one, the best one can get is a snapshot—accurate data gathered and evaluated at a specific point in time. To take data taken from one point/microregion and apply it to a larger geographic area is extrapolation. To think that this now-generalized profile will remain constant and reliable over time adds assumption to injury, and my father was quick to point out what assumption makes of us all. To avoid any such assumptions, you have three options:

1. Disregard all data. Relax, don't worry, and wing it. This is the "you get what you get" approach.
2. Use exclusively distilled water, either as-is or doctored not to match the myth of a microregion, but to instead fit the bill for your brew day.
3. Get your water tested. Know your baseline and know what you're working with. To take it even further, repeat the test after three to six months and see how much the results change, if at all. Unless the water is so flawed you can't stand the smell or taste of it, you'll still be able to use your baseline water to brew with, but by having real data to work with, you'll also have to

make smaller adjustments than if you continue to start from the "true neutral" alignment of distilled water.

Though all three methods have their appeal, I'd argue in favor of this last one. Along with that, I'd make the case for giving yourself at least a limited working proficiency in Water Science 101. You don't have to be a chemist to know the basics, but knowing the basics of your water—*your* water, I say—will give you the agency to fully customize it each time you brew, just as you do with your malts, hops, and yeast.

So, then—how best to do that? There are three very easy ways: you can contact your county health department, you can contact a state-certified water testing laboratory, or you can do it yourself. If you call your county health department, they ought to be able to provide you with an up-to-date report of recent water testing for the area if you're on a municipal water supply, but keep in mind that in any given city or region, several different water sources are routinely combined to meet the needs of the local population, and what's



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on the water report may reflect an average of annual variations from multiple sources. Additionally, municipal water may be treated with alum (aluminum sulfate), and/or organic polymers as coagulating agents. If so, these are used early in the treatment process, and don't reach the final product. However, other additives such as chlorine or chloramine (a compound of chlorine and ammonia) used to kill bacteria and algae *do* make it to the tap, and can react with the organic compounds present in malt and hops to produce notes of plastic in the finished beer. Of the two, chloramine is the more insidious, as chlorine is readily removed by boiling, and some will even simply off-gas. Boiling will technically reduce the volume of chloramine in water, but the amount of time required to do that is quite a bit longer than the boil time specified by your recipe. Municipal water may also contain added fluoride. Added fluoride levels fall within a specified low range, but fluoride may naturally occur in some water supplies as well. The EPA has set a secondary standard of about 2.0 ppm for fluoride in water. Higher levels of fluoride reportedly contribute a metallic taste to water, and would likely do the same to a beer brewed with water containing higher concentrations of fluoride.

Your county health department may also be able to test a sample of your water (usually for a small fee) if you bring them one, whether you're on municipal water or have a well. If your county doesn't do that (not all counties do), you can find a list of state-certified labs by looking on the

“  
So, test the waters.  
There's something to be said  
for knowing what's in there.

website for the Environmental Protection Agency or by calling the Safe Drinking Water Hotline. If you want to go the DIY route, you can find water testing kits online or in your local homebrewing supply store. They'll run the gamut from barely over 20 bucks to pushing a thousand. Different reports will give different data, and some may give you more than you feel you need. All of them ought to give you enough to go on, and there are several specific details that will help you understand how your water as-is will impact your beer, and what simple steps to take to tweak it to best complement your recipe.

The first thing to look at is **Total Dissolved Solids**, or TDS. This measures the overall level of all minerals found in the water, which is useful in its own right and also because it will enable you

to understand not only the levels of these minerals but their proportions and ratio to one another. Different reports will measure and report on different minerals, but all reports should give you the concentration in parts per million (ppm) of six key ions: calcium, magnesium, sodium, chloride, sulfate, and bicarbonate. For any of these minerals, concentrations in the single digits are more or less insignificant, but levels in the hundreds can alter and overpower the character of your beer. The ideal ranges for each of the six ions are as follows: calcium: 50–150 ppm; magnesium: 10–40 ppm; sodium: 0–150 ppm; chloride: 0–250 ppm; sulfate: 50–250 ppm; and bicarbonate: 0–250 ppm. If your water comes in under the mark, it's a simple matter to add some salts, which can also be readily found at your local homebrewing supply shop. On the other hand, if the concentrations are too high, you may need to dilute your tap water with a measure of distilled water. (Reverse-osmosis water will do the trick, too.) In particular, high levels of calcium and/or magnesium will impart an unpleasant bitterness, and treating with additives won't help.

The report may also note levels of potassium. Your malt will add quite a lot of potassium, but original concentrations of potassium in the water should not exceed 10 ppm. Iron, if noted, should be under 0.3 ppm, and ideally under 0.2 ppm. Higher iron levels can alter the color, interfere with saccharification, exacerbate staling processes, and impart a metallic or even blood-like taste. Manganese, if noted, should only be present in concentrations under 0.05 ppm, according to the EPA. Other ions such as copper, zinc, and even lead and tin, may be beneficial to yeast metabolism at very, very small levels, but these trace amounts will be provided by your malt, and should not be present in



your water. Higher levels of these ions are toxic to yeast—and to people, too. High copper levels may not be inherent to the water itself, but can also indicate corrosion of old copper plumbing.

In short, all levels at the higher end of normal/OK will impart a firmer mineral character, and “softer” water with an overall lower mineral concentration will give your beer a similar soft character. Of course, this is something that you can change.

Next, in addition to the levels of the various ions, you’ll want to have a look at the **ratio of sulfate to chloride**. Besides being within the desirable zone, these two ions in particular ought to be in balance with one another. If one is significantly higher than the other, you’ll notice the imbalance coming through in the taste—not as off-flavors, per se, but more as an off-kilter, top- or bottom-heavy brew. If the chloride levels in your water are considerably higher than the levels of sulfate, you’ll taste that as increased maltiness, and perceive a fuller mouthfeel. On the other hand, if the sulfate levels are notably higher than the levels of chloride, you’ll notice an increased accentuated bitterness and a drier, lighter mouthfeel. Again, these are not necessarily flaws. But knowing

Continued on page 59. >

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**GOLD**

CooperSmith's Pub & Brewing  
Mark Pennick  
Fort Collins, Colorado





# GREAT AMERICAN BEER FESTIVAL®

## PRO-AM COMPETITION

2023 | DENVER, COLORADO

# LEVELING UP

AHA Members Win Big at  
2023 Great American Beer Festival Pro-Am

By Kristen Kuchar

**C**ompetition is a big part of homebrewing. It's an opportunity for critical and valuable feedback from experts that helps homebrewers learn and improve their beloved craft. And, of course, it's fun to win a medal.

But one competition is unlike any other. The Pro-Am competition is a part of the Great American Beer Festival (GABF), one of the largest and best-known beer celebrations and competitions in the world. Every beer competing in the Pro-Am has already medaled at an AHA/BJCP-sanctioned competition; from these winning beers, professional brewers have selected homebrew recipes to brew commercially in partnership with the homebrewers who created them.

"Homebrewers get really excited to team up to create these beers," says Chris Williams, Brewers Association competition director.

Entries are judged in the same manner as all other beers at GABF, Williams explains, by the same expert panel. He points out it is a difficult category to judge because it isn't like others in the competition in which entries go head to head in a single style category. Instead, the Pro-Am is a best-of-show style competition featuring a wide variety of styles. In 2023 there were 50 Pro-Am entries.

Pro-Am beers are available on tap at their respective breweries, which is a fantastic opportunity to showcase homebrewing to customers who likely already have an appreciation of well-made craft beer. But it doesn't stop there. The beers are also available in the festival hall at GABF in Denver, allowing the approximately 40,000 attendees to give them a try and experience the excellence homebrewers are capable of.

The Pro-Am brings more attention to homebrewing and showcases it in a different light, Williams says. He receives positive feedback from participating professional brewers as well, with many appreciating the unique opportunity to engage with the homebrewing community that launched many of their careers.

**<< Left to Right:**

Jimmy Goering  
(CooperSmith's brewer)

Chris McCombs  
(CooperSmith's head brewer)

Mark Pennick  
(homebrewer, The Brew Crew)

Heyward Gualandi  
(Root Shoot Malting, Northern Accts. Mgr.)



## GOLD

### SHE FANCIES HERSELF A LITTLE BIT FRENCH

**CooperSmith's Pub & Brewing | Mark Pennick, Fort Collins, Colorado**

When CooperSmith's Pub & Brewing head brewer Chris McCombs selected this gold-medal beer for the Pro-Am during a blind tasting, he had no idea the recipe was by Mark Pennick—the same homebrewer with whom he won a Pro-Am medal the previous year.

"I guess I shouldn't be surprised since we are both big fans of saisons," McCombs said.

In 2022, McCombs and Pennick collaborated in Fort Collins to brew Sticky Fingers Saison, which won the silver medal in the Pro-Am. The beer-wine hybrid was inspired by Pennick's daughter's love for grapes and her resulting "sticky fingers" from squeezing them.

For the 2023 Pro-Am, when McCombs was sampling beers at the blind tasting, he enjoyed the hop aroma profile of one particular beer, noting, "Sauvignon Blanc grapes, white wine, peaches, honeydew, and green tea." The beer is brewed with Nelson Sauvin, Mandarina Bavaria, and Saaz hops.

McCombs describes the beer as something you'd expect from Belgium—bright, estery, and bubbly. There's warmth from the barely detectable alcohol (9% ABV), a balanced combination of phenols and subtle yeast smokiness, and a pleasant mouthfeel.

"I just love a bubbly, bright saison with a healthy, assertive amount of carbonation," McCombs says.

Pennick set out to make a rosé saison this time around, using orange peel, Sauvignon Blanc grapes, and Pinot Noir grapes. He says the Sauvignon Blanc grapes lend some tropical notes and fruitiness and make it somewhat dry, while the Pinot Noir grapes offer a more wine-forward backbone. There are also some spicy, white pepper notes from the yeast (White Labs WLP568 Belgian Style Saison Ale Yeast Blend) and complementary spicy notes from Czech Saaz hops.

Pennick notes that both of his award-winning beers were keg-conditioned, and the resulting effervescence "dances across the tongue," he adds. When it came to what to call the French-inspired beer, he thought of friend Theresa Schein. When Pennick asked her if she was French, she replied "a little bit" so "She Fancies Herself A Little Bit French" became the name.

McCombs and Pennick have a mutual respect as brewers and genuinely enjoyed working together for both competitions.

"He really likes to hear what I have to say and he trusts me as an expert on the recipe, and I trust him as a brewer," said Pennick, who believes that participating in events such as the Pro-Am has a huge impact on homebrewers and offers invaluable competition feedback.

The Pro-Am experience in general is mutually beneficial, McCombs believes, bringing homebrewers and professional brewers together to share ideas and talk equipment.

"You see a lot of commercial brewers taking inspiration from homebrewing," he said, adding that homebrewers remain on the cutting edge of innovation and creativity, pushing the envelope.



## SHE FANCIES HERSELF A LITTLE BIT FRENCH

### Saison

Recipe by Mark Pennick and Chris McCombs.

**Batch volume:** 6.4 US gal. [24.2 L]

**Original gravity:** 1.074 [18°P]

**Final gravity:** 1.008 [2.1°P]

**Efficiency:** 68.37%

**Color:** 6 SRM

**Bitterness:** 32 IBU

### MALTS & ADJUNCTS

5.5 lb. [2.5 kg] Castle Pilsen malt

5.5 lb. [2.5 kg] Rahr white wheat malt

1.75 lb. [795 g] German Vienna malt

1.5 lb. [680 g] torrefied wheat

0.75 lb. [340 g] American dextrin malt

0.5 ib. [227 g] rice hulls

### HOPS

0.66 oz. [19 g] Magnum, 12.5% a.a.  
@ 60 min

0.75 oz. [21 g] Nelson Sauvin @ 10 min

0.75 oz. [21 g] Mandarina Bavaria @ 10 min

0.75 oz. [21 g] Czech Saaz @ 10 min

0.75 oz. [21 g] Nelson Sauvin @ 2 min

0.75 oz. [21 g] Mandarina Bavaria @ 2 min

0.75 oz. [21 g] Czech Saaz @ 2 min

### ADDITIONAL ITEMS

1 oz. [28 g] sweet orange peel  
@ 15 min

1.75 cups [414 mL] Pinot Noir grape  
concentrate @ flameout

4 cups [947 mL] Sauvignon Blanc grape  
concentrate @ flameout

### YEAST

1.75 L  
starter White Labs WLP568 Belgian Style  
Saison Ale Yeast Blend

### BREWING NOTES

Mash at 148°F [64°C] for 90 minutes. No  
mash out. Recirculate 3 gal., and then  
continuous sparge with 170°F [77°C] water  
to collect 7.25 gal. Boil 75 minutes with pre-  
boil gravity of 1.053, adding hops and grape  
juice concentrates as indicated.

Pitch at least 350 million cells at 72°F  
[22°C] and hold at 72°F [22°C] for 14 days,  
or until beer clears. Keg condition to 2.4 vol.  
[4.8 g/L] CO<sub>2</sub>. Beer peaks at 10–24 weeks.



## SILVER

### NACHT OUT

New Belgium Brewing Co. | Rob Hardisty, Fort Collins, Colorado

Rob Hardisty always appreciated the art behind brewing but never believed he could brew something as good as the high-quality beers around him on the Front Range of Colorado. When he wasn't brewing, he wanted to understand the process so he researched it for several years. Once he had a bit more time available to him and started craving beers that weren't as readily available to him—think coffee blonde ale and cucumber Berliner weisse—he decided to give it a try in 2014.

The inspiration for this silver-medal winning Baltic porter came after developing an interest in lagers the last several years and wanting to embrace some of the traditions of lager brewing in a big, bold, malt-forward beer. The Poetry Slam homebrew competition was held at New Belgium Brewing, and Hardisty's beer won a gold medal for the style as well as best of show that day.

Kelly McKnight, lead research and development brewer at New Belgium Brewing, describes the beer as having a wonderful chocolate aroma and says it drinks like it's 6% ABV despite its 8.5% ABV.

"I knew I wanted to lager it for 12 weeks, which is a long time, especially in a pilot [brewery] where we crank out all sorts of crazy beers," McKnight says.

Not only is it one of McKnight's favorite styles, but customers in the Fort Collins taproom were devouring it, she said. "We don't usually have a ton of dark beer on tap at New Belgium, so people love that." It's also an opportunity to show the community a collaboration between a larger craft brewery and a local homebrewer, added McKnight, who grew up in Fort Collins.

She started homebrewing in the early 2000s, using a little hot plate in her college dorm at the University of Washington where she made a pumpkin hefeweizen to start.

Years later in Boston, while attending Harvard, she needed a break from studying chemistry while pursuing a medical career. So she decided to take a day off to homebrew and soon after made the decision to switch paths and become a professional brewer.

"Kelly truly embraced the recipe I had," Hardisty says. He feels New Belgium approached the whole Pro-Am competition with palpable enthusiasm and a first-class experience. "There is nothing cooler than walking into your local brewery and having your beer on tap for everyone to enjoy," he says.

The Fort Collins brewery supports the homebrew community and often engages with Hardisty's local club, the Liquid Poets. There was a tapping party at the brewery, where a few other local homebrew clubs joined. Hopefully, Hardisty says, it helped fellow homebrewers to understand the Pro-Am and encourage them to get involved. "It's phenomenal that they put the Pro-Am beers on tap at GABF," he says, adding he hopes to see even more promotion of the competition to come.

Brew  
This!



## NACHT OUT

### Baltic Porter

Recipe by Rob Hardisty & Kelly McKnight.

**Batch volume:** 5.3 US gal. (20.25 L)

**Original gravity:** 1.086 (20.8°P)

**Final gravity:** 1.016 (4.1°P)

**Efficiency:** 53%

**Color:** 28 SRM

**Bitterness:** 50 IBU

**Alcohol:** 9.9% by volume

### MALTS & ADJUNCTS

8.3 lb. (3.76 kg) Weyermann Barke Pilsner (36%)

8 lb. (3.65 kg) Weyermann Barke Munich Malt (35%)

3.3 lb. (1.51 kg) Weyermann Barke Vienna Malt (14.5%)

1.29 lb. (584 g) Briess Flaked Oats (5.6%)

0.43 lb. (198 g) Weyermann Caramunich II malt (1.9%)

0.35 lb. (157 g) Weyermann Carafa Special II malt (1.5%)

0.23 lb. (104 g) Briess Chocolate malt (1%)

### HOPS

0.8 oz. (22 g) Pahto, 20% a.a. @ 60 min (45 IBU)

1.1 oz. (30 g) German Tradition, 5.1% a.a. @ 10 min (6 IBU)

### ADDITIONAL ITEMS

1.04 lb. (470 g) light brown sugar, 6.5 °L (4.5%)

### YEAST

White Labs WLP838 Southern German Lager

### BREWING NOTES

Mash at 131°F (55°C) for 10 min., 149°F (65°C) for 40 min., 160°F (71°C) for 40 min., and 167°F (75°C) for 10 min. Pre-boil gravity should be 1.058 (14.3°P). Boil 85 min., adding hops as indicated.

Ferment at 48°F (9°C) for 14 days. Carbonate to 2.35 vol. (4.7 g/L) CO<sub>2</sub>.



Rob Hardisty

“  
**THERE IS NOTHING COOLER THAN  
WALKING INTO YOUR LOCAL BREWERY  
AND HAVING YOUR BEER ON  
TAP FOR EVERYONE  
TO ENJOY.**

— Rob Hardisty



Both McKnight and Hardisty acknowledge the beneficial influence of a robust homebrew scene on commercial brewing. Hardisty credits his homebrew club for such a strong community of learning and camaraderie. In between regular monthly meetings, the club hosts an educational night to learn “the craft behind the

craft,” he says. Members get together to learn about water chemistry, mashing techniques, the pros and cons of electric brewing, and more. “It helps foster a drive to improve their brewing and try things they never thought about themselves,” Hardisty says. It also gives the chance for a club member to teach and share their

knowledge, which in turn, is a great way to learn, he adds.

McKnight says the community of homebrewers in Fort Collins and throughout Colorado has a positive impact on her brewing. “You really get inspired by a lot of the homebrewers,” she says, who really “go all out” with their creative, well-made beers.

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## WHAT IS THAT?

### *Piwo Grodziskie*

Recipe by Joel Miller and Brad Burton.

**Original gravity:** 1.033 (8.3°P)

**Final gravity:** 1.008 (2.1°P)

**Color:** 3 SRM

**Bitterness:** 25 IBU

**Alcohol:** 3.3% by volume

### MALTS

100% Weyermann Oak Smoked Wheat malt

### HOPS

25 IBU Bravo, 16.2% a.a. @ 60 min  
0.06 oz./gal. [0.45 g/L] Saaz, 4.2% a.a., whirlpool

### YEAST

Fermentis SafLager W-34/70

### WATER

Ca 71 ppm, Mg 5 ppm, Na 8 ppm, Cl 83 ppm, SO<sub>4</sub> 68 ppm

### BREWING NOTES

Single infusion mash for 1 hour at 150°F (66°C). Add rice hulls as needed. Boil for 60 minutes, cool to 58°F (14°C) and add yeast. Ferment at 58°F (14°C), then ramp to 65°F (18°C) towards the end of fermentation. Let condition at 65°F (18°C) for 4 days and then cold crash.

Kristen Kuchar has covered the food and beverage industries for the past 14 years. She has written for Brew Your Own, BeerAdvocate, CraftBeer.com, The Beer Connoisseur, DRAFT, All About Beer, VinePair, and many more.





# BIERSCAPES

## CREATING THE PERFECT BEER EXPERIENCE



*By Ryan Pachmayer*

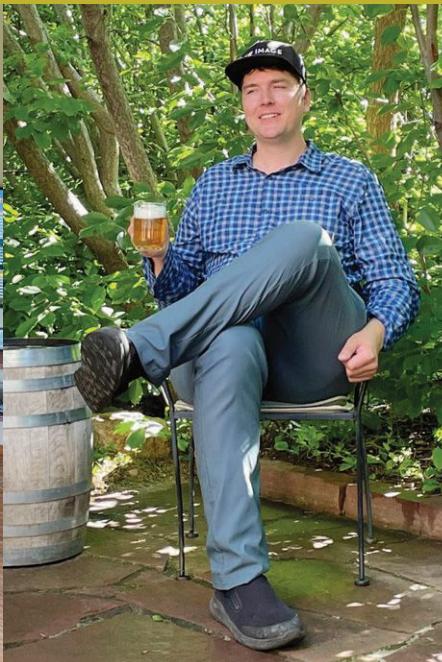
**WHAT'S YOUR FAVORITE BEER EXPERIENCE?** Odds are it didn't take place alone on the couch, or at the bottom of a plastic cup. The very best times in the world of beer usually involve great beer, but there's more to it than that. It's also about the company you keep and the environment you are in. If you have those three things, you might just create a great memory.

Most of us seek out the best beer. In fact, many of us go to great lengths to find the ever-elusive perfect pint. Whether we're trading boxes of beer with people halfway around the country, flying across oceans on beer-centric trips, or tediously adjusting processes and tinkering with recipes to create our ideal beers, it's not uncommon to focus on quality beer.

It's also natural to look for good company with whom to enjoy those fantastic beers. We make friends through brewing and drinking or elevate existing relationships by the addition of beer hobbies.

The third factor, the environment, is often the most neglected. It's understandable, after all, as you can certainly have a great time with good friends and good beers. But there's a sort of holy grail when you combine those two with a special place.





Jim Spaulding decided to do just that. Spaulding had been brewing since the mid 1980s, and his backyard shed had become a sort of de facto gathering place for his closest friends. There, he would throw yearly parties, usually revolving around Oktoberfest and winterfest.

Spaulding has always favored classic Continental European beers and has focused his brewing career on English, Belgian, and German styles specifically. When building his brewhouse, he thought about the rich history of these beers and how some of his favorite commercial producers originally made (and in some cases still do make) them.

"My wife has been pretty damn supportive over the years, but if I were knocking down walls inside of our house, I'm pretty sure she'd want some details on that project first," says Spaulding. So, he focused on the spaces outside of the living quarters.

## THE CELLAR

The first part of Jim's project came about as a practical way to better ferment his lagers. "I'd been hauling glass carboys of fermented beer down into my crawl space, along with packaged beer. It was dusty, dirty, and not the type of environment needed for fermentation," says Spaulding.

Spaulding borrowed a truck with a dump bed and started digging out his crawl space. It was slow, hard work that also required moving a sewer line, as well as some light plumbing and electrical work. Friends helped out along the way, and some of those friendships were even bro-

ken when tempers flared. The completed dig took an estimated 25 truckloads of dirt out from under the house.

Once the dirt had been removed, Spaulding finished the cellar with framing, drywall, electrical, and paint, eventually settling on an epoxy finish on the floor. "The fun part is always when the project gets to the finishing touches," says Spaulding. He added thoughtful extras, including a brewery sink, fixtures, and an exhaust fan.

"It really felt European, an old-world [style]," he says. It didn't take long for him to realize that he enjoyed sipping beers in that space, so he purchased a couple of bar stools and a small LCD TV for watching

Clockwise from top left: The lounge area of the barn. The author enjoying a pale lager in the biergarten. Grains being hoisted up into the loft of the Bier Barn. A band plays in the intimate bierkeller.

sports, and he and his friends would frequently gather in this hand-dug bierkeller.

Years later, when touring the sandstone cellars above Forchheim in Germany, in the famed Kellerwald, Spaulding would have flashbacks to the early days of his own cellar.

## THE BIER BARN IS BORN

The cellar was a great space for a small number of people, and it worked well for



fermenting lagers in the traditional way, but Spaulding still used his small metal shed for larger gatherings. One Oktoberfest in September, Colorado had some unseasonable weather that dipped below freezing. "It was horrible," says Spaulding, "and I decided that the shed needed to be replaced right away. It was nowhere near suitable for large gatherings," he says.

The following spring, Spaulding hired some local laborers to remove the shed, and he began the lengthy process of building the new "Bier Barn," as he calls it. It was akin to a giant Tuff Shed, he says. To visitors, it's become a special place, one that looks similar to an Accessory Dwelling Unit (ADU) in the form of a large barn.

Spaulding's late friend Gehard helped him put in concrete caissons. The barn company, A-Shed, placed the door and window openings exactly where he wanted them. Once the basic structure was up, it was pretty much a plywood shell. Spaulding did all the work except drywall and paint. He installed the electrical and plumbing, and his brother-in-law taught him how to do tile by helping him with the floor and brewhouse walls. A contractor dug a gas line right to the brewing area and capped it with a ball valve so that Spaulding could finish the gas as needed. "I took the day off work and offered to be his gofer," recalls Spaulding, adding "so long as he would take the time to explain what he was doing and how to safely install gas plumbing."



# EDELHELL

*Recipe by Jim Spaulding*

Spaulding has been developing the recipe for his house helles, called Edelhell, for decades now. This is often the first beer shared with guests at the Bier Barn. "No matter what project I'm working on, it always seems to end in a fresh glass of foamy helles," says Spaulding.

The recipe has morphed over the years, but it largely remains the same. Often a small tweak in hopping, a different Pilsner malt, or perhaps a couple degree difference in a mash schedule is the only change year to year.

**Original gravity:** 1.049 (12.2°P)

**Bitterness:** 25 IBU

**Final gravity:** 1.010 (2.6°P)

**Alcohol:** 5% by volume

**Color:** 4 SRM

## MALTS

55% Weyermann Isaria Pilsner Malt

Acidulated malt to reach 5.4 mash pH

45% Weyermann Bohemian Floor Malted

[measured at 80°F/27°C]

Pilsner Malt

## HOPS

14 IBU Hersbrucker, first wort

3 IBU Tettnanger @ 20 min

8 IBU Tettnanger @ 30 min

## YEAST

Fresh starter

White Labs WLP830 German Lager yeast

## BREWING NOTES

Mash at 133°F (56°C) for 10 min, 144°F (62°C) for 30 min, 160°F (71°C) for 40 min, and 168°F (76°C) for 10 min. Bring the entire mash up to a simmer and then simmer for 10 minutes. This is Spaulding's version of a decoction mash.

Spaulding knocks out to 47°F (8°C), then ferments at 48°F (9°C) until primary fermentation is complete, roughly 14 days. Fresh kräusen beer is added, fermentation continues for roughly 48 hours, and the temperature is slowly lowered to 40°F (4°C), where it remains for up to a week to give the yeast a chance to clean up any diacetyl and continue to slowly work. He then slowly lowers the temperature to 33°F (0.6°C), where the beer lagers for many weeks. Spaulding usually brews 10 gallons (37.9 L) of beer, serving the first keg after more than 8 weeks of lagering. The second keg may lager for a couple of months more before being tapped.

Note: Spaulding brews at 5,300 feet (1,615 m) elevation. His 25 IBUs reflect a lowered hop utilization at that altitude. If you brew at a lower elevation, you'll want to scale the IBUs in the recipe down to 18–22 IBUs, depending on where you live.

Spaulding found many challenges along the way, but he overcame them with his desire to build the right gathering place, his way. He also took a page from his preferred lager fermentation profile—low and slow. "I think it's really important to first visualize how you would want the finished space to look," says Spaulding. "People often just jump into stuff without really giving the project the needed dream time."

Spaulding spent considerable time sipping beers and just thinking about how

he wanted the space to look, weeding out some issues and ultimately saving himself a lot of time during the buildout.

Spaulding used natural materials whenever possible: stone, wood, and brick. His aim was for something traditional, though not necessarily old fashioned, with form-following-function principles. "The Bier Barn works in concert with the cellar and the biergarten," he says. "That's not to say I followed a master plan. That would certainly be ideal, but my ideals

Brew  
This!

# JAPANESE RICE LAGER

Recipe by Bradley Janowski, St. Elmo Brewing

Bradley Janowski is the lead brewer at St. Elmo Brewing. This recipe calls back to the first time he and his friend decided to try their hand at brewing with adjuncts. "We were brewing a pre-Prohibition lager with flaked corn, and we spontaneously decided to throw some rice in the mash," says Janowski.

While he admits that they had no idea what they were doing, the beer turned out to be one of the best they had made up to that point. "I vividly recall the day we were brewing," he says. "We were brewing in the backyard with a small firepit going. The whole process of brewing was such a great mystery to us back then."

Janowski has since fine-tuned his adjunct lagers and learned about proper cereal mashing. "That first experience really inspired me to dive deep into the world of brewing with adjuncts," says Janowski.

The recipe provided is a later, improved version of the beer. Janowski notes to cook the rice in a cooker or pot before adding it to the mash.



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

**Original gravity:** 1.049 (12.2°P)

**Final gravity:** 1.012 (3.1°P)

**Efficiency:** 68%

**Color:** 4 SRM

**Bitterness:** 30 IBU

**Alcohol:** 4.9% by volume

## MALTS & ADJUNCTS

8.5 lb. (3.86 kg) BestMalz Pilsen malt (66.3%)	8 oz. (227 g) Weyermann Carahell malt (3.9%)
3.5 lb. (1.59 kg) Kirkland jasmine rice, cooked (27.3%)	5 oz. (142 g) BestMalz Acidulated malt (2.4%)

## HOPS

1 oz. (28 g) Mount Hood, 5.9% a.a. @ 60 min (18 IBU)	2 oz. (57 g) Crystal, 4.37% a.a., 10 min hopstand @ 176°F (80°C) (2 IBU)
2 oz. (57 g) Crystal 4.37% @ 10 min (11 IBU)	

## WATER

Ca 38 ppm, Mg 0 ppm, Na 0 ppm, Cl 43 ppm, SO<sub>4</sub> 53 ppm, HCO<sub>3</sub> 0 ppm

## YEAST

500 mL Weihenstephan 34/70 slurry

## BREWING NOTES

Wash and cook rice in a pot or rice cooker using 14 cups of water; add to mash. Mash at 144°F (62°C) for 20 min, 154°F (68°C) for 20 min, 163°F (73°C) for 20 min, and 170°F (77°C) for 10 min. Collect enough wort to achieve a pre-boil gravity of 1.045 (11.1°P).

Boil 60 minutes, adding hops as indicated. Chill wort to 48°F (9°C) and pitch yeast. Ferment at 48°F (9°C) for 10 days. Over 4 days, chill to 40°F (4°C) and apply 15 psi of top pressure if possible.

Lager at 38°F (3°C) for 60 days, under 15 psi if able. Chill to 36°F (2°C) and hold 4 days at 15 psi to complete carbonation to 2.4 vol (4.8 g/L) CO<sub>2</sub>.

sort of trickled in through the years, as I [continued to add on]."

Spaulding's barn functions similarly to many traditional brewhouses that rely on gravity. Malt is hoisted to the loft, where it is stored and milled. Milled malt is sent down to the brewhouse, which is on the same level as the taproom and biergarten. After brewing, the finished wort flows down into the fermenters in the cellar. Packaged beer is eventually delivered up from the cellar into the taproom.

The biergarten out back is surrounded by foliage on three sides and houses a simple pond with a small waterfall. The space provides intimacy and privacy, and it is frequently a gathering space when the weather cooperates.

Spaulding regularly hosts small groups of like-minded brewers and drinkers, spending hours in the back biergarten and barn, debating mash schedules and the finer details of beers, while sipping some of the best beers around.

## MY HOME BAR

I thought a lot about Spaulding's choices when developing the ideas for my own house bar. This led me to come up with several priorities. I wanted to incorporate barrels into my design—barrel-aged stout is something I enjoy on occasion, usually as a nightcap, but it is a style that has been critical in my development as a brewer. I spent countless hours trying to dissect and recreate some of my favorite big beers over the years, and the results have helped improve my recipe formulation skills, critical tasting abilities, and brewing techniques.

When it came to the barrels, I wanted to go local. Colorado has enjoyed a surge in distilleries, and there are several making excellent spirits that are worth your time.

I also keep a large collection of spirits on hand; when a guest stays over, they often buy a bottle as a thank you. I always have a lot of beer on hand, so the spirits tend to stick around longer. A local cocktail haunt displays them on long wooden shelves, not exactly uncommon in this industry, but I really like that look.

I didn't have a large budget for this build, but I knew where I wanted to put my money: into a pair of LUKR side-pull faucets. While the aesthetic is nice, I really love the soft, drinkable foam that these faucets can create. My typical drinking sessions for decades have always started with lager. These days, they often end with lager too. While these taps aren't relevant to making good lager, they will help accent-

## A Labor Day bluegrass party.

tuate some of the lagers I like to brew in a serving style I really enjoy.

Outside of those faucets, I would spend more time and effort on this project than money. I started with an old white freezer and a basic temperature controller. I built a collar from 2-by-8 wood and increased the height so I could stack 5-gallon and 2.5-gallon Corny kegs. I used appliance spray paint for a more appealing black finish.

I went to the local hardwood store and picked out an attractive wood on sale for my shelving, cut it to size, and put some brackets on the joists to hold them up.

I picked up a Law's Whiskey barrel from the now-shuttered Black Project Brewery for \$50. You can regularly find these types of barrels at the end of their beer lifespan for \$40 to \$75. I screwed the hoops into each stave, cut open a hole on one side of the barrel, and applied several layers of sealant to the top end. This would serve as a table in my bar, an intimate place to gather around stools with two or three good friends, sip beers, and talk the day away. This is the type of drinking I enjoy most.

I also decided I wanted to serve taps out of barrels. I'd seen this at a cocktail bar in Seattle, and really took to the idea. I picked up an Old Elk barrel from Peculier Ales for another \$50.

For the second barrel tap, I needed a barrel from another local distillery. I couldn't find anything with an attractive barrel head, so I contacted Law's Whiskey directly. While they didn't have anything available other than the aqua-blue barrel head that I already had on my table-design, they did agree to stamp a blank barrel head for me. So, I acquired a nondescript barrel, sanded off the small lettering on the head, and brought it over to Law's, where they stamped it for me in red paint.

I used some extra staves from the tap head barrels, sanded those down, and applied chalk paint. This would serve as my tap list.

With my barrel heads configured to serve, and the barrel table set up as a gathering place, I needed a few more finishing touches. I didn't want to put trays below each tap, as I felt it would get messy. I also have a ton of glassware. I searched around Google images, using phrases like "beer dispenser" and "homebrewing draft system," looking for inspiration. I found a few different examples where people built out a wooden floor cabinet and used the top as a space to put bar mats under the faucets.



## KENTUCKY COMMON

Recipe by Evan Sherlock

Years ago, Evan Sherlock began brainstorming a recipe for his annual Labor Day party, a big shindig thrown in the mountains with bluegrass and country rock music. "It needed to be low alcohol, appeal to the masses, while still being a unique beer that would start a conversation," says Sherlock.

Eight iterations later, Sherlock's Kentucky Common has been dialed in, and has become a mainstay not only at the yearly party, but also within the Olde Town Mash Paddlers homebrew club, of which Sherlock is president. The beer was also brewed at a local commercial brewery several times, becoming a favorite of bar regulars there too.

### Batch volume: 6.2 US gal. [23.5 L]

Original gravity: 1.049 [12.2°P]

Final gravity: 1.009 [2.4°P]

Color: 15 SRM

Bitterness: 27 IBU

Alcohol: 5.2% by volume

### MALTS & ADJUNCTS

9 lb. [4.08 kg] US pale malt [69.4%]

6 oz. [170 g] Weyermann Carafa III malt [2.9%]

1.1 lb. [500 g] flaked maize [8.5%]

1 lb. [454 g] Munich malt, 60°L [7.7%]

1.5 lb. [680 g] flaked rye [11.6%]

### HOPS

1.5 oz. [43 g] Cluster, 6.5% a.a. @ 60 min [27 IBU]

### YEAST

White Labs WLP090 San Diego Super Yeast

### BREWING NOTES

Mash at 152°F [67°C] for 60 min. Pre-boil gravity should be 1.043 [10.8°P]. Boil 60 min. Ferment at 66°F [19°C] until fermentation has slowed, and then warm to 68°F [20°C] and hold for several days. Cold condition until ready to serve.



Brew  
This!



## PERSIMMON CREAM ALE

*Recipe by Ryan Carroll*

One of the earliest memories that Ryan Carroll had growing up was helping his great-grandmother pick ripe persimmons from the trees lining the fields in his Southern Indiana hometown. "I was around 5 or 6 years old," says Carroll. "She would make delicious persimmon pudding for dessert. I called it persimmon pie because it was so rich and had a thick consistency," he recalls.

Now a professional brewer in Colorado with experience making beer at breweries such as Sanitas, Crooked Stave, Ratio, and Upslope, Carroll wondered if he could convert some of those flavors into a small-batch recipe. He called up his mom and she was able to find the 100-year-old pudding recipe in his grandmother's cookbook. "I felt honored to revisit this recipe in her memory," says Carroll.

**Batch volume:** 6.5 US gal. (24.6 L)  
**Original gravity:** 1.058 (14.3°P)

**Final gravity:** 1.012 (3.1°P)

### MALTS

7.5 lb. (3.40 kg) Pilsner malt	1 lb. (454 g) Crystal malt, 40°L
2 lb. (907 g) Light Munich malt	1 lb. (454 g) yellow flaked maize

### HOPS

1 oz. (28 g) Mt Hood, 5.2% a.a. @ 60 min	1 oz. (28 g) Spalt, 2.2% a.a. @ 5 min
1 oz. (28 g) Fuggle, 5% a.a. @ 30 min	

### ADDITIONAL ITEMS

8 persimmons @ 10 min	8 g crystalized ginger @ flameout
2 sticks cinnamon @ flameout	6 oz. (170 g) lactose @ flameout

### YEAST

White Labs WLP060 Cream Ale blend

### BREWING NOTES

Mash at 152°F (67°C) for 60 min. Boil 60 min, adding hops and other items as indicated. Smash the persimmons into a pulp and put them in a muslin bag. Drop the bag into the kettle 10 minutes before the end of the boil and leave them in the wort throughout the whirlpool. Ferment at 66°F (19°C). Cold condition until ready to serve.

I wanted the cabinet to be well made. It needed to sit on the floor, against the bar, and it would need two doors that would open as well. I made some rudimentary drawings and brought them over to a friend who has a nice garage-shop and a lot of experience as a hobby-woodworker, and we built it out over a few hours.

The rest of the build was made with a circular saw and drills. I didn't even have a chop saw at the time, let alone a table saw. I'm not a high-level carpenter. This is a very accessible build if you're patient, plan things out, and have the motivation to follow through. It probably took me six weeks, an hour or two here, a half day there, maybe 30 to 40 hours total. I could've borrowed better tools, enlisted the help of more friends, and spent twice the time to create a final product of a higher caliber. Or, I could've moved faster, cut the time by 25 to 40 percent, and had a rougher-looking final product. I made the tradeoffs I felt were worthwhile, landing somewhere between "rough" and "elegant."

You can see imperfections if you're looking, but it's well-built overall. When I think back to some of my favorite bar settings, whether it was the old Selinsgrove brewery in Pennsylvania, the now burned down Maple Tree Inn in the Chicago suburbs, or overseas places like the Augustiner



Above from left: The author removed a cut barrel head that would later be stamped by Laws Whiskey House; The author's nearly completed bar.

Keller, Hofbräuhaus, or the wonderful bars of Belgium, I'm sure there are countless imperfections in the wood, tables, and buildings. I don't remember any of those, though. I remember sitting in inspiring places, drinking fantastic beer with some of the favorite people in my life. And that's the point. A stray nail or a sharp piece of metal could ruin the experience, but an uneven cut, sanded, stained, and finished? It's not a problem. It might even add some character.

In the brief time I've had this bar, I've made some new favorite experiences and memories. The bar is set to host more in the future as well. And while the recipe for the perfect beer requires more than ingredients, the ones provided in this article were all inspired by a special time or place. I hope they can inspire you to create some new beers and experiences with the special people in your life.

**Ryan Pachmayer** is the marketing and events director at New Image Brewing in Wheat Ridge and Arvada, Colo. He's the former head brewer at Yak and Yeti Restaurant and Brewpub in Arvada. He is also a BJCP Certified beer judge. He can be reached at [ryanwritesbeer@gmail.com](mailto:ryanwritesbeer@gmail.com). 



## BLACK RAZZ

*Recipe by Dave Bergen, Joyride Brewing*

Growing up, Dave Bergen's grandparents had a cabin in the Northern Wisconsin town of Manitowish Waters. There, Bergen would spend part of his summer riding in their 1951 Willys army jeep on the old logging trails in the area, picking wild berries and adding them to his cereal.

During the planning phase of Joyride Brewing, Bergen would brew small-scale trial recipes. He knew that he wanted a spring/summer fruit beer. Most of the fruit beers in Wisconsin were very sweet, especially the delicious and intentionally sweet ones from New Glarus. He wanted to depart from that and create a dry, drinkable version.

Inspired by those trips in the Northwoods of Wisconsin, he created Black Razz Blonde, using his favorite berries from those early memories: blackberries and raspberries.

Today, customers can enjoy the beer on the rooftop patio of Joyride Brewing in Edgewater, Colo., just a stone's throw from Denver's western city limits. The beer goes down easy and is a refreshing warm weather beer in Colorado's long, sunny days.

The beer won a silver medal at the 2022 Great American Beer Festival in the Fruit Beer category.

**Original gravity:** 1.050 (12.3°P)  
before fruit addition

**Bitterness:** 15 IBU  
**Alcohol:** 5.2% by volume

**Final gravity:** 1.011 (2.8°P)

### MALTS

95% pale malt  
5% crystal malt, 20°L

### HOPS

15 IBU any high-alpha hop variety @ 60 min

### YEAST

Fermentis SafAle US-05 or other California ale yeast

### ADDITIONAL ITEMS

0.7 lb./gal. blackberries  
0.5 lb./gal. raspberries

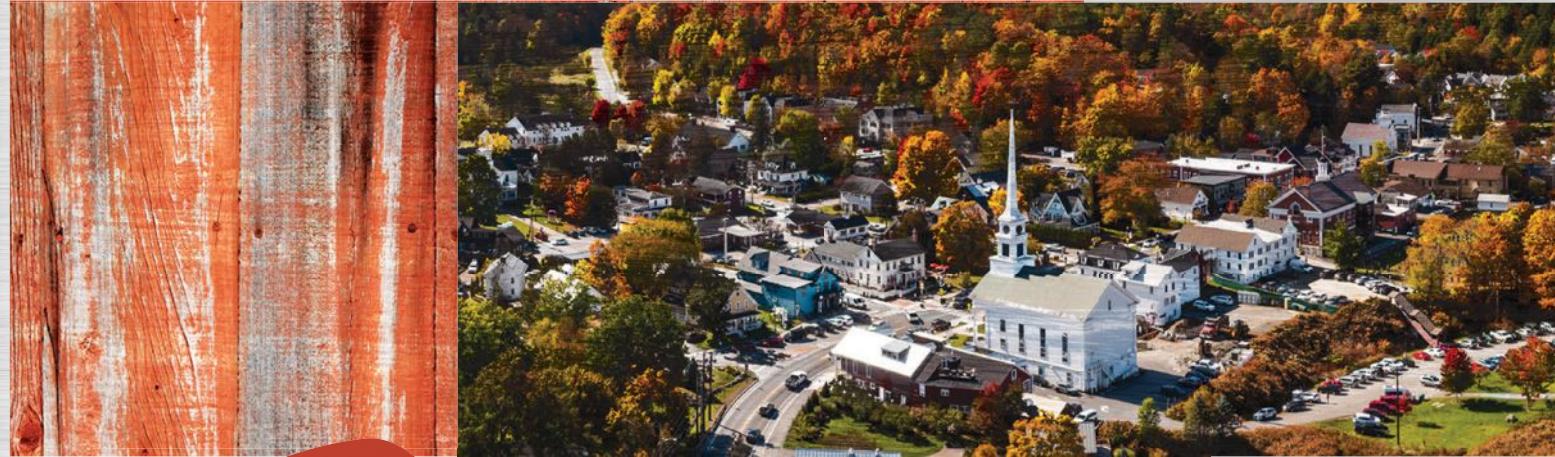
### BREWING NOTES

Mash at 149°F (65°C) for 60 min, targeting a mash pH of 5.1. Use sour wort or acid to reduce to post-boil wort pH to 4.8. Ferment at 67°F (19°C), with a free rise to 70°F (21°C) on day 3. Add fruit at high kräusen, which is usually around day 3.

Bergen has used different regional Chinook varieties of hops, local Nugget hops, as well as Magnum hops. Hops here are for bittering balance, and at 15 IBU, you won't get a lot of flavor to come through, so any high-alpha acid hop should work well.

Bergen and brewmaster Tyler Bies only use real fruit for this beer, no extracts. Pectic enzyme is added to help clarify the beer. He wants the beer to be bright and attractive and notices when one slides down the bar, it garners attention from other patrons.





# Stowe- Aways *in* **VERMONT**





## A HOMEBREWING COUPLE'S ANNIVERSARY ADVENTURE

By Mark Pasquinelli

*My*

wife Karol and I were all-in for an anniversary vacation to Stowe. It would be a much-needed respite from the travails of life—an opportunity to restore our souls. She could do some bird watching in that outdoor wonderland, and, of course, we'd visit the iconic breweries, providing us with a once-in-a-lifetime opportunity to up our homebrewing games.

For us, Stowe holds a curious fascination—a tiny town in northern Vermont that somehow became the epicenter of a craft beer Mecca, the home of New England IPAs and—surprise!—the maker of *wunderbar* German lagers. We planned visits to Idletyme, von Trapp, and The Alchemist to interview the brewers. Karol would assist as my photographer and help with the interviews, posing hard-hitting *60 Minutes*–style questions.

We knew of the town's reputation for friendliness and, sure enough, all three brewers were more than happy to meet with us and share their knowledge.

### SPENDING SOME IDLETYME

Idletyme Brewing was the perfect place to kick off our adventure. With nearly 200 years of history behind it, the site had been the home of a cider mill; Camp Idletyme, a combination gas station and general store; and the Shed Restaurant, which began serving craft beer in 1995, closed in 2011, and ushered in the arrival of brewmaster Will Gilson in 2012.

Gilson, a self-confessed “ski bum” in his younger days, previously brewed in Utah, Wyoming, and New Hampshire. He recounted his introduction to the craft in 1988. A friend whose father brewed asked, “Do you want to make some beer?” Gilson was hooked and developed a love of big, malty brews because of their better bang for the buck.

Of course, those early days presented many challenges to both homebrewers and professionals. There were few sources for information, he said, aside from *Zymurgy*, Charlie Papazian’s *Joy of Homebrewing*, and Greg Noonan’s *Brewing Lager Beer*. Furthermore, everything had to be built from scratch, which necessitated countless trips to junkyards. One of his friends was even banned from a facility for obstructing the workers in his quest for repurpose-worthy items. →



Idletyme's base malts are straightforward: Weyermann and Bestmalz for lagers and high diastatic malts for ales. As for water, Gilson adds nothing to his well water for lagers, saying the softness is just right. Hop-forward brews get a dash of gypsum, while dark beers get both gypsum and a dash of salt to help make the flavors pop.

Referring to his beers as "his children," Gilson gushed like a proud papa when discussing his brewing system, a 10-hectoliter (8.5-barrel), German-made, three-vessel rig that's a combination automated and hands-on hybrid, having the bells and whistles found on much larger systems. Built as one piece, it had to be lowered into his brewery by crane. He laughed when adding, "the brewhouse is copper-clad and so sexy when it's polished."

Using a proprietary recirculation system, his rig routinely produces brew-house efficiencies in excess of 90%. All of Idletyme's lagers are step mashed, and special brews, like his Double Bock, are done by decoction. In English tradition, Idletyme's ales are mashed at a 150°F (66°C) single infusion.

Lautering is slow and takes two hours. Then the wort is boiled by a pressurized, steam-powered calandria, which was once considered a proprietary secret among breweries. His calandria works from the bottom and center—creating the hard, rolling boil that Gilson believes is essential for wort clarity and stability. "When it's rolling," he said, "it sounds just like a jet engine."

In addition to high efficiency, his brewing process delivers exquisite maltiness—perfect for German lagers. But it's sometimes too much of a good thing. Thomas Fawcett's prized Pearl Malt, for example,



produces IPAs that are simply too malty, so Gilson uses domestic malts for his hop-forward ales.

From upstairs, where the measurements are in metric, the wort flows downstairs to a fermentation room, where the volumes are in gallons. Here, the magic continues.

Idletyme is one of the few American breweries to use open fermenters. Gilson believes they're essential to create his unique flavor profiles, and he sees them "as a tribute to the beloved Anchor Brewing's swimming-pool fermenters or the classic open fermenters of England and Belgium."

The day we visited, Helles Brook Lager was fermenting in a glycol-jacketed cube-shaped fermenter, with a removable lid. A slide gate at the tank face lets the kräusen from fermentation spill over, and the yeast can be collected and reused for future brews. Depending upon the strain (weizen yeast can be persnickety), it can be used for up to seven generations. Since the fermentation room is sealed, as a safety precaution, fresh air is vented from the outside to prevent toxic buildups of CO<sub>2</sub>.

Interestingly, Gilson's lagers begin fermentation at 60°F (16°C). Once kräusen



*The* brewhouse  
is copper-clad and so  
sexy when it's polished.”

Will Gilson

begins and the yeast count has doubled, the temperature is lowered to a more commonplace 50°F (10°C), and fermentation continues at that temperature until completion. Starting at a higher temperature in open tanks, he believes, allows sulfur to dissipate. And diacetyl isn't a worry because his yeast strain is a non-producer. Idletyme's ales have a much simpler fermentation regimen: 70°F (21°C), give or take a degree.

Using an old brewer's trick, Gilson ferments his hefewizen at a lower temperature, 60°F (16°C) to 62°F (16°C), and under pitches to accentuate the banana esters and minimize the clove flavors.

All that talk worked up a powerful thirst. Karol and I sampled all 10 of Gilson's creations, starting with the lagers and then shifting to the hop-forward brews. Everything from an unfiltered zwickel to the DIPA (their biggest seller) was solid; no flaws. Two beers really stood out.

Gilson strives for drinkability in his brews, believing the glut of extreme beers has turned people off from many breweries and styles. Thus, he's proud of Helles Brook Lager. I've found sam-



Will Gilson; Idletyme's copper-clad brewhouse.

plings of helles from many other breweries to be wanting—the equivalent of a Germanized, mass-produced light lager. Helles Brook, which he refers to as a “naked” beer, was different: light and refreshing, and also brimming with complex aromas and flavors of malt and just enough hops for balance.

The brewer then looked at me and smiled, stating that tourists from the Fatherland often say to him, quietly, in an admiring whisper, “You could sell this beer in Germany.”

Karol and I also enjoyed Zog's Pale Ale, a classic dry-hopped interpretation of the style. As one of the progenitors of the craft beer movement, pale ale is near and dear to my heart. It, sadly, no longer gets the love it deserves. I made sure to get the recipe.

In addition, Gilson gave us some parting wisdom for homebrewers: “Repeat a recipe and resist the urge to change it every time. When you wing-ding and change it, you lose scientific control. There are so many good brewers who came from homebrewing and got good at their craft by dialing it in.”



## A BIT OF AUSTRIA; A LOT OF VERMONT

Driving past Idletyme the next day, we made a quick left and snaked our way up a serpentine drive. Suddenly, Karol and I were no longer in Stowe. With the mountains in the background, we felt as if we'd been transported to the Austrian Alps—where the hills were alive with the sound of burbling lagers from von Trapp Brewing, music to our ears.

The von Trapps left Austria after the Nazi annexation and toured the world as the Trapp Family Singers, becoming the inspiration for the *Sound of Music*. They eventually settled in Stowe and turned their home into a 30-room ski lodge.

The brewery, the dream of Johannes von Trapp—the son of Maria—opened at the lodge in 2010 with a 15-barrel system,

designed from a retrofitted bakery. A few years later, the family went all in, building a new brewery at a separate location and adding a bierhall. Von Trapp Brewing has won numerous awards and, with the help of director of brewing operations Tom Everett, now produces approximately 16,000 barrels annually, with its lagers available from Maine to Virginia.

When we arrived, Everett, a New Jersey native, was brewing a collaborative festbier with Narragansett Brewing. Starting as a homebrewer, he learned his craft professionally at Magic Hat Brewing. Everett then asked about our visit with Gilson at Idletyme and spoke about the camaraderie that exists between the Stowe brewers.

"Will and I go way back," he said. The two have an ongoing joke, with Gilson ribbing

Von Trapp Brewing produces 16,000 barrels annually.

about von Trapp's automated brewery and its massive 100- and 200-barrel fermenters, saying, "Tom can just put his feet up on the desk and run the show from the control room."

Von Trapp's control room is truly impressive, looking like something out of a sci-fi movie. The brewery itself, designed and set up by German engineers, is spacious, and no expenses were spared. Yet in German tradition, the recipes are simple and decidedly Old World. Starting with three lagers—Helles, Vienna, and Dunkel—the brews were tweaked, and the repertoire was expanded to nearly a dozen.

Keeping with the Reinheitsgebot, the ingredients are also basic. And in what



The Alchemist's Heady Topper took the craft beer industry by storm, ushering in the hazy IPA era.

would become a repeating theme throughout our tours, Everett prefers imported grains, especially Weyermann and Czech Malt for the Bohemian Pilsner. Acidulated malt is added as needed to keep the mash pH in range. Water is used as-is, with no mineral additions. Hopping is kept simple as well. CO<sub>2</sub> extract or Magnum is used for bittering, and noble hops are added for late additions, although Everett occasionally experiments. In a recent collaboration, von Trapp dry hopped its Stowe Style Hopfenweisse hefeweizen with experimental HBC586 for tropical notes to complement the brew's banana flavor.

All von Trapp's lagers are either step mashed or decocted. They're then fermented at 50°F (10°C) with various strains of Wyeast lager yeast, which is reused for up to 10 generations.

Like Idletyme's, the brewhouse is a model of German efficiency, and nothing is wasted. Efficiency exceeds 90% and, to save water, the wort is boiled under pressure at 216°F (102°C). A steam condenser collects the water vapor, which, already hot, is recycled for the next batch, saving untold gallons of water.

The same as for homebrewers, making hefeweizen presents special challenges. Everett ferments his at a lower temperature



with Wyeast 3068, saying, "just a degree change in temperature makes a big difference." Von Trapp doesn't have open fermenters, so by stretching cheesecloth across the tops of the tanks, he's able to simulate them and relieve the pressure from fermentation. In addition, through trial and error, Everett has discovered that minimizing headspace in the fermenters lowers sulfur production and fortuitously allows the top-floating weizen yeast to be easily transferred to another fermenter.

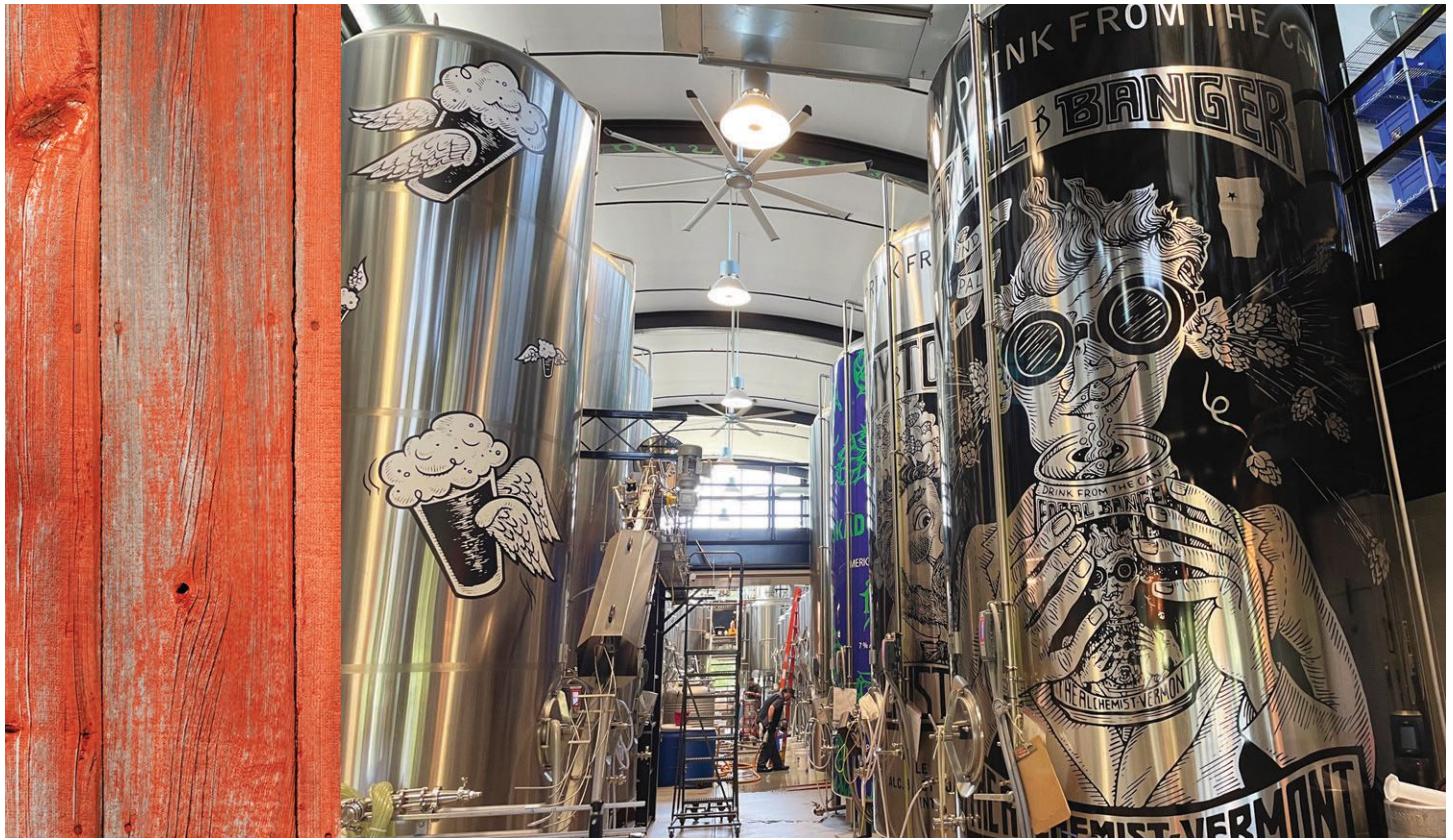
Preferring to keep a low profile, Everett modestly credits much of von Trapp's success to quality manager Jack Van Paepeghem, a Netherlands native, who works to catch problems early, before the beer goes farther down the production line. Thus, every time a brew is moved, there are myriad sensory and quality checks, including polymerase chain reaction (PCR) testing for possible contamination.

Karol and I were able to sample most of von Trapp's brews during our two visits to the biergarten. We especially enjoyed their Vienna, Dunkel, and Kölsch. And for a brewery known for traditional lagers, their grapefruit-infused Radler and Stowe Style Maple Rauch were great change-of-pace brews.

As for advice, Everett ended our chat by suggesting, "Pay attention to the little things, like the grain crush and making sure the sparge temperature is in range," adding, "be careful not to over sparge. Sometimes that can cause a grainy character in your beers—and, above all, repeat your recipes until they're perfect."

## HOME OF THE HAZY

Any homebrewer worth their salt knows the story of The Alchemist Brewery and its transformative Heady Topper—the IPA that took the craft beer industry by storm,



## FOCAL POINT (Inspired by *The Alchemist's Focal Banger*)

Recipe by Amahl Turcyn.

**Batch volume:** 5.5 US gal. (20.8 L)

**Original gravity:** 1.066 (16.1°P)

**Final gravity:** 1.012 (3.2°P)

**Efficiency:** 70%

**Bitterness:** 80 IBU

**Color:** 5 SRM

**Alcohol:** 7% by volume

### MALT

9 lb. (4.08 kg) Thomas Fawcett Pearl malt

4.8 lb. (2.18 kg) Bestmalz Pilsner malt

### HOPS

7 mL Hopshot CO<sub>2</sub> extract, 48.91% a.a. @ 60 min

1 oz. (28 g) Mosaic, 12.25% a.a. @ 10 min

1 oz. (28 g) Mosaic, 12.25% a.a. @ 5 min

1 oz. (28) Mosaic, 12.25% a.a. whirlpool 25 min

4 oz. (113 g) Citra, 12% a.a. dry hop 2–3 days

### YEAST

1.5 L starter Imperial Barbarian Yeast

### BREWING NOTES:

Mash at 150°F (66°C) for 75 minutes, collect wort, and boil for 60 minutes, adding hops and additional items as directed. If you don't have the equipment to conduct a whirlpool, simply conduct a hopstand by steeping the final addition of Mosaic in the hot wort before chilling. When fermentation at 68°F (20°C) is complete, chill to 36°F (2°C), and dry hop for three days. Keg or bottle at 2.5 vol (4.8 g/L) CO<sub>2</sub>.

### EXTRACT VERSION:

Substitute 6.3 lb. (2.86 kg) Maris Otter liquid malt extract and 3.4 lb. (1.54 kg) Pilsner liquid malt extract and follow all-grain directions from boil. If boiling a concentrated wort, you may need to increase the 60-minute addition of hop extract to make up for utilization loss.

ushering in the hazy craze. But Karol and I knew the brewery was about much more than just Heady.

Our experience began the second we arrived. Opening the door, we were practically blown backwards—overwhelmed—by the aromas of tropical hops from ongoing fermentations and a whirlpooling batch of Focal Banger.

Moments later, brewer and co-owner John Kimmich arrived, asking, “Would you like a beer?”

How could we say no? He poured us two large Heady Toppers from the beer engine, deftly whisking off the protruding foam with a knife, and led us on our tour.

Our sensory shock continued as Kimmich pointed out the funky artwork, noting, “Jen and I built this place with the purpose that these blank walls and ceiling panels will eventually become murals—the building becoming a canvas for art that’s going to evolve over time, where this place will look like an acid trip.”

“We want to put people in a different place—a creative and artistic place—that pushes all the garbage of the world away.”

Speaking of garbage, Kimmich seemed almost prouder of The Alchemist’s commitment to sustainability than of his beers. At the Stowe and Waterbury facilities, wastewater containing matter from the brewing process is transported to anaerobic degraders, where it’s composted into energy that’s recycled into the grid. The other brewing water is treated and returned to Stowe’s water supply cleaner than when it arrived. Two-thirds of the brewery’s electricity is generated by solar panels. And almost everything, including grain bags, is recycled—the total net waste of the Stowe facility easily fits into a medium-sized trash can. There are also no CO<sub>2</sub> shortages. The brewery is self-sufficient in that regard, with carbon dioxide being collected during fermentation, then scrubbed, cleaned, and liquified.

In stark contrast to the wonderfully obsessive order of the brewery, Kimmich’s office teemed with the creative clutter of a genius, much like Einstein’s desk at Princeton. We sat down to discuss the details—what makes The Alchemist’s brews so devilishly delicious—and how homebrewers can emulate these amazing beers.

We could have spent the entire session talking about water—proper mash pH and the addition of salts. Kimmich is not concerned about chloride-to-sulfate ratios, saying he’s on “team sulfate.” In fact, he decried the use of excessive chlorides, saying, “All the rage in the world of hazy beers is softer, softer, softer—to the point where



## IDLETYME HELLES BROOK Lager

Recipe courtesy Idletyme Brewing Co., Stowe, Vt.

**Batch volume:** 5 US gal [18.9 L]

**Original gravity:** 1.050 [12.5°P]

**Final gravity:** 1.010 [2.6°P]

**Efficiency:** 75%

**Bitterness:** 19 IBU

**Color:** 3 SRM

**Alcohol:** 5.3% by volume

### MALTS

8 lb. [3.63 kg] Weyermann Pilsner malt

12 oz. [340 g] Weyerman Munich Type I malt

Weyermann Acidulated malt, as needed to adjust mash pH to 5.2

### HOPS

0.55 oz. [16 g] Perle, 8% aa @ 60 min

0.3 oz. [9 g] Hallertauer Mittelfrüh, 4% a.a. @ 10 min

0.6 oz. [17 g] Hallertauer Mittelfrüh, 4% a.a. @ knockout

### YEAST

2 sachets Fermentis SafLager W-34/70

### ADDITIONAL ITEMS

0.5 tsp. Wyeast yeast nutrient @ 10 min

1 tablet Whirlfloc @ 5 min

### BREWING NOTES

Begin mash at 113°F [45°C] for 15 minutes. Heat while stirring and boost to 129°F [54°C] for 20 minutes. Boost to 147°F [64°C] for 25 minutes. Boost to 158°F [70°C] for 30 minutes. Mash out and sparge at 172°F [78°C]. Chill to 60°F [16°C] and ferment until a layer of kräusen forms. Drop temperature to 50°F [10°C] and ferment to completion. Cold crash to 38°F [3°C] and keg or bottle at 2.3 vol [4.6 g/L] CO<sub>2</sub>. Age for at least six weeks.

### EXTRACT VERSION

Substitute 5 lb, 6 oz. [2.44 kg] Briess Pilsen Light DME and 10 oz. [283 g] Munich LME for the grain malts and follow all-grain directions from boil. Top off volume if necessary.

some IPAs are undrinkable, lacking the structure and mineral character that’s so essential for building how the flavors of the barley and hops come together.”

He then referenced Shaun Hill at Hill Farmstead, agreeing with his opinion that IPAs need some “traction on the tongue” and a crispness on the front of the palate and tip of the tongue that can’t be achieved if too many chlorides are added.

Much of The Alchemist’s quality is derived from using imported base malts: Bestmalz Pilsner from Germany and Thomas Fawcett’s Pearl Malt from the UK. Regarding Pearl, he said, “I tried everything under the sun. It’s the best.” Later in the interview, Kimmich shared an amusing anecdote. It wasn’t until a few years ago that he realized his mentor, craft brewing icon Greg Noonan, was instrumental in getting Pearl Malt to the United States. Unknowingly, Kimmich was brew-

ing with those first shipments to Noonan’s Vermont Pub & Brewery—only to come full circle years later and choose the same malt via trial and error.

I had to ask if The Alchemist used adjuncts in its hazy. “No,” Kimmich scoffed. “Oats don’t belong in an IPA. Wheat doesn’t belong in an IPA.”

The brewery’s success can’t be discussed without mentioning its legendary yeast. Noonan first procured the strain from England in the ‘90s and used it at his Waterbury brewery, naming it Conan because it was a beast. Like Papazian’s signature Cry Havoc yeast, Conan is versatile—able to ferment clean lager-like ales, such as Kölsch, at low temperatures, or Belgian-inspired brews, starting low and allowing them to free rise to higher temperatures.

Noonan gifted Conan to Kimmich, who’s tight-lipped about its use. “There’s a lot of

Brew  
This!



## IDLETYME ZOG

### Pale Ale

Recipe courtesy Idletyme Brewing Co., Stowe, Vt.

**Batch volume:** 5 US gal. (18.9 L)  
**Original gravity:** 1.050 (12.5°P)  
**Final gravity:** 1.011 (2.8°P)  
**Efficiency:** 75%

**Bitterness:** 43 IBU  
**Color:** 5 SRM  
**Alcohol:** 5.1% by volume

#### MALT

9.0 lb. (4.08 kg) Briess 2-Row malt  
Weyermann Acidulated malt, as needed to adjust mash pH to 5.2

#### HOPS

0.65 oz. (18 g) Chinook, 13% a.a. @ 60 min  
1 oz. (28 g) Centennial, 10% a.a. @ 10 min  
1.5 oz. (43 g) Centennial, 10% a.a. @ knockout  
2 oz. (57 g) Mosaic, 11.6% aa dry hop  
0.5 oz. (14 g) Simcoe, 13% aa dry hop

#### YEAST

1L starter White Labs WLP001 California Ale

#### ADDITIONAL ITEMS

0.5 tsp. Wyeast yeast nutrient @ 10 min  
1 tablet Whirlfloc @ 5 min

#### BREWING NOTES

If brewing with soft water, add 1 tsp. gypsum to mash and an additional teaspoon 15 minutes before end of boil. Mash at 150°F (66°C) for 60 minutes and sparge to collect 6 gal. wort (22.7 L). Boil for 60 minutes, adding hops and additional items as directed. Chill and ferment at 70°F (21°C) until fermentation is complete. Cold crash to 36°F (2°C) and dry hop for three days. Keg and bottle at 2.3 vol (4.6 g/L) CO<sub>2</sub>.

#### EXTRACT VERSION

Substitute 5.75 lb. (2.61 kg) light DME for 2-row and follow all-grain directions from boil. Top off volume if necessary.

people who just want to glean information, and they don't want to find out the hard way, which is through trial and error and hard work."

In light of that, I still asked about his fermentation temperature for Conan. He stressed that one has to experiment to find the individual sweet-spot temperature to generate the yeast's nuances, like the luscious apricot ester notes found in Heady Topper. Little things, such as one's fermenter size and shape, can affect these flavors.

The answer to what makes his IPAs hazy was a bit more complex. It's about the process, and, surprisingly, not so much the yeast, although Kimmich attributes some of the haziness found at other breweries to less flocculant mutations of Conan. Some of Heady's haze is due to the beta-glucans in the barley—but mostly it's from something he's passionate about: hops.

But even though Kimmich is all about the lupulins, he has concerns about the direction of hop-forward beers—for example, zero-IBU IPAs. "It's hop water, not an IPA," he said. "I don't need to try it." In addition, he derided the brewing industry's pervading "macho bros" mentality about adding hops, which I confessed to being guilty of.

"More is just more, not better," Kimmich continued, pointing out that the 12 to 14 pounds per barrel of dry hops some breweries brag about actually creates a diminishing returns scenario. "We hop 4 to 5 pounds per barrel [2 to 2.6 oz./gal. or 15 to 20 g/L]. In the modern scheme, that's unheard of, but, please...try our beers. Put them up next to the others. I don't want an IPA that smells and tastes like everyone else's. My goal is for them to smell like a freshly opened bag of hops." He sighed wistfully. "It smells like heaven on Earth."

*Get* a grasp of what good beer actually is. Educate yourself. When brewing, pay attention to detail. Change one factor and brew the same beer again and again to learn what the changes are doing. Don't be pulled into losing track of basics. Poorly made beer is poorly made beer."

—John Kimmich

For most of his IPAs, Kimmich uses CO<sub>2</sub> extract for the bittering hop charge. He's also experimented with liquid products such as Spectrum—liking them, but finding the resulting brews can lack complexity. "To get the chewy hoppiness that's required, a certain percentage of ground hops is necessary."

One of the biggest faults he finds in IPAs is the overbearing, grassy chlorophyll flavor that can result when beer is over-hopped or if it rests on the dry hops for too long. There's a short window, he believes, between when the hops stop delivering wonderful aromas and flavors and when they switch to imparting undrinkable green flavors. Thus, The Alchemist dry hops for no longer than 48 to 60 hours.

When I asked how he's able to extract the dry hops from the fermenter so quickly (mine are a runny "hop gravy" at that stage), he smiled, saying, "that's a secret learned from trial and error."

Afterward, I did some research and posed the same question again (remember, you gotta earn it). Only then did he reveal that The Alchemist dry hops at 36°F (2°C), after fermentation has completed.

Dissolved oxygen is a big bugaboo for IPAs, and Kimmich is proud of The Alchemist's ability to keep it out—telling me that a salesman once thought his oxygen meter was broken because the O<sub>2</sub> levels at his brewery were so low. Therefore, it's no surprise that Heady Topper and his other IPAs age delightfully in cans. The haze may drop, but the beer still retains a wonderful, crisp hoppiness, even after several months.

As expected, he declined to give me a recipe for Heady Topper. Hoping he'd divulge something, Kimmich reviewed a Heady clone recipe from a supposedly reliable source, saying, "It's pretty inaccurate. People like to guess."

He was more forthcoming regarding Focal Banger, vetting a clone recipe he'd provided for the AHA several years ago (*Zymurgy*, May/June 2017). "It's an immensely simple recipe: Pilsner malt to cut the Pearl malt." Kimmich uses CO<sub>2</sub> extract for bittering and finishes hopping on the hot side with Mosaic, whirlpooling at knockout temperature to get the proper IBUs (The Alchemist whirlpools at lower temperatures to lighten the hop edge on its more bitter brews) and then dry hopping with Citra.

When our session segued to the beer café, Karol and I enjoyed, among others, the classic Focal Banger; Zomerbier, a Mosaic dry hopped summer saison; and Luscious, a British-style imperial stout that instantly became Karol's favorite.

As expected, Kimmich had lots of advice about how to make better beer. "Get a grasp of what good beer actually is. Educate yourself. When brewing, pay attention to detail. Change one factor and brew the same beer again and again to learn what the changes are doing. Don't be pulled into losing track of basics. Poorly made beer is poorly made beer."

Our anniversary beer-cation to Stowe ended far too soon. We shouldn't have been surprised that all three brewers, without consulting each other, preached the same common threads: quality ingredients, attention to detail, and brewing the same recipe until it's perfect.

Karol and I would be remiss in our reporting to not mention the friendliness of the Stowe community and the hospitality and passion for their craft displayed by Will Gilson at Idletyme, Tom Everett at von Trapp, and John Kimmich at The Alchemist.

Lastly, upon reflection, I also realized that our anniversary trip had become a personal affirmation—a renewal of my homebrewing vows. And it's why I still love this hobby after over 25 years.

*Mark Pasquinelli is a regular contributor to *Zymurgy*. He resides in the bucolic town of Elysburg, Pa., where he spends his time in varying degrees as a husband, writer, homebrewer, microbiologist, and manservant for seven felines.*



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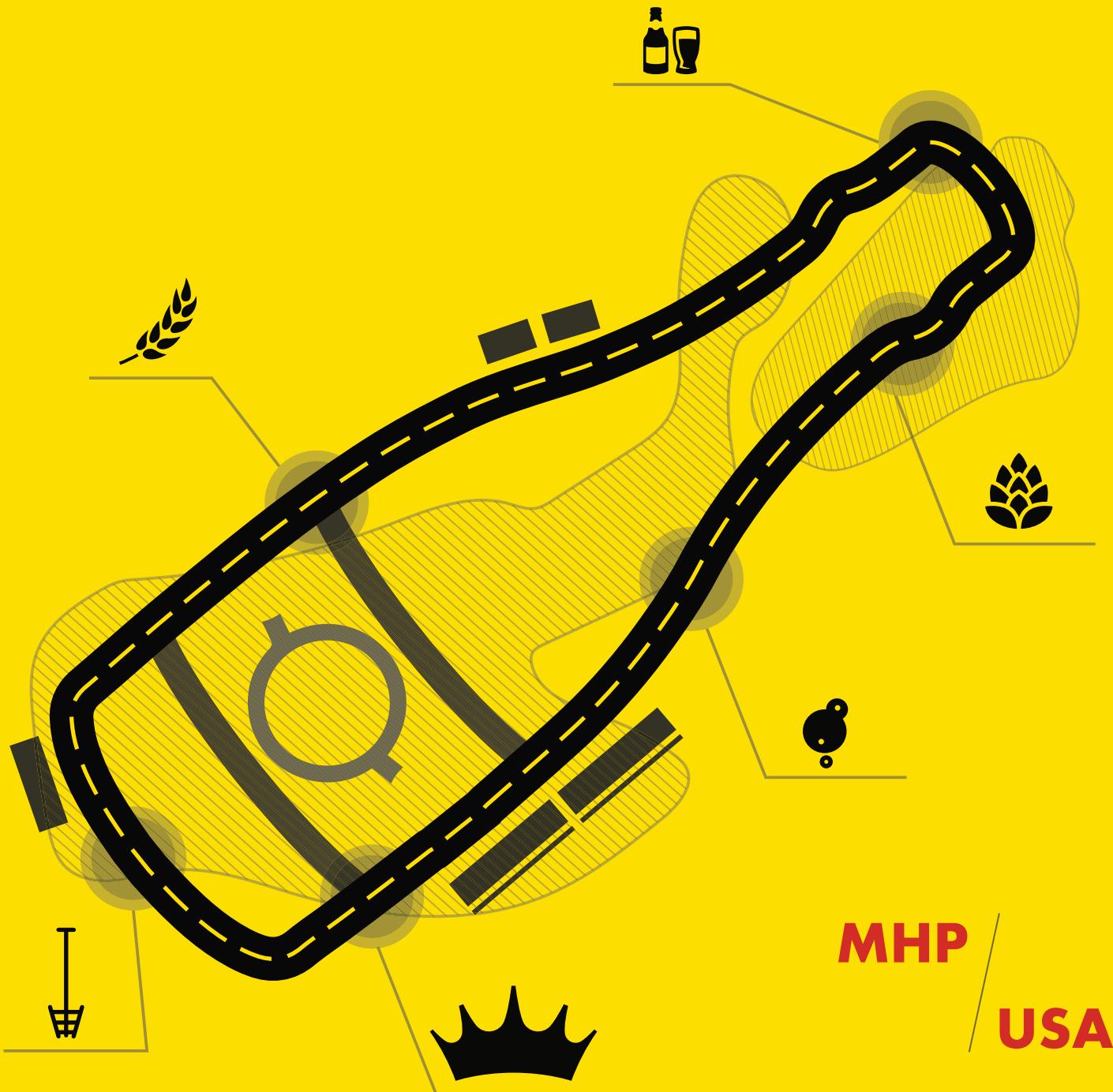
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# MASTER HOMEBREWER PROGRAM

*By Charlie Scudder*

**C**arl Teachey had set out on a mission to brew every BJCP style. Soon, he had too much extra beer in his cellar and didn't know what to do with it. Stephanie Butler is an experienced homebrewer who has won National Homebrew Competition gold, but wanted a new goal to reach for. Chris Daily wanted to revamp his local homebrew competition and hoped to make it one of the best in the country.

They all found the Master Homebrewer Program (MHP), a new grassroots initiative that's dramatically changing the competitive brewing landscape in the United States. The program aims to connect brewers from around the country through competition; at the same time, it's reshaping how the nation's top brewers compete.

"It's really stretched our community," says Matthew Herrold, founder and president of the Master Homebrewer Program. "We have this camaraderie that we never really had before nationally."

Think of it like Pokémon meets Boy Scouts or Girl Scouts. Brewers compete to catch 'em all—all 122 BJCP styles, that is—and earn badges based on competition scores to celebrate their success along the way.

"Everybody's aiming for the medals, of course, but this gives us something to all reach for and be able to be recognized," Daily says. "It's getting to the point where I'm looking for those scores almost more than the medals."



Here's how it works.

My homebrew club in Fort Worth, Texas—the Horsemen of the Hopocalypse—has a club membership, which means I get the perks of an MHP membership with my annual dues. The program is free for anyone to join, but a \$25 individual membership entitles one to commemorative badges. For \$125, an entire club can join.

When I get a BJCP scoresheet back from a competition, I upload it to the MHP's website. A team of volunteers behind the program then add that score—a 40 for a kellerbier I recently brewed, for example—to a personalized dashboard that tracks my top scores for each category. Were I to earn a 35 for that same beer in another competition, it wouldn't count for MHP—only the top score for each style matters.

That dashboard also tracks how many scores over a certain level I have in all the

categories. That's where the badges come in. I know that if I brew two more lagers that score 30 or higher, I'll rank up from Proficient to Recognized, but I'll need 15 total scoresheets with a score over 38 to then jump to Distinguished.

Each rank comes with a metal badge that is becoming more recognizable at homebrewing competitions and events.

"It's a way to keep retention in the competitive homebrewing world and make people feel like there's a next carrot out in front of them," Herrold says. "How can I stretch myself, to keep myself from burning out, and to keep challenging myself to do something different, learn something new, and just keep at the hobby?"

Herrold started the program in 2019, looking for a way to recognize competitive brewers who had mastered multiple styles. He launched it first within his own homebrew club, the Cane Island Alers in Katy, Texas. Herrold says plans for expansion

stalled in 2020 with the COVID-19 pandemic but relaunched in 2021.

That's when he came up with the program's other invention: the Circuit of America. Herrold identified the largest homebrew competition in each state and awarded points for top finishers. The brewer at the end of the year with the most points would win the circuit.

"We've definitely been paying attention to which competitions are on the circuit," says Butler, whose Kansas City Bier Meisters club won the circuit last year, "especially paying attention to some of the larger ones where you might get really good judging feedback, or just getting a medal in a different state that we've never entered."

## CIRCUIT TRAINING

That push for circuit points has put a pinch on some local and regional competitions, now inundated with national entrants that push local brewers off the medal stand.

## MASTER HOMEBREWER PROGRAM LEVELS

	Min Score	Min Scoresheets	Min Categories	Min Lagers	Min Sours	Min Meads	Min Ciders
Novice	21	5	4	None Required			
Apprentice		10	7	1 of any			
Proficient	30	10	7	2 of any			
Recognized		15	10	3 of any			
Distinguished	38	15	11	2 of any			
Master		20	15	4 of any			
Grand Master I	43	10	5	3 of any			
Grand Master II		15	7	4 of any			
Grand Master III		20	9	5 of any			
Grand Master IV		25	11	6 of any			
Grand Master V		30	13	7 of any			
Grand Master VI		35	15	5	1	1	1
Grand Master VII		40	17	5	1	2	1
Grand Master VIII		45	19	6	2*	2	2
Grand Master IX		50	21	6	2*	3	3
Grand Master X		55	23	7	3*	3	3
Legendary Master	1 scoresheet per BEER/MEAD/CIDER category 43+						
Supreme Master of Brewing	1 scoresheet per BEER/MEAD/CIDER Sub-category 43+						

\* One sour shall be of a mixed fermentation category, i.e. 23B-F, or 28 B-C



In the Master Homebrewer Program, brewers compete to earn badges based on competition scores.

Herrold says some of the competitions reached out asking to be removed from his Circuit of America after the first few years, but others have reached out wanting to improve their level of competition. Among them was Daily's club, the San Antonio Cerveceros.

Daily pushed his club to launch a new competition, the Alamo City Brew Battle, and turned to the Master Homebrewer Program's Circuit of America for a model.

"They have helped create a standard of these competitions," Daily says. "Competitions now are pushing better quality stuff because they want to meet standards of the Master Homebrewer Program."

Members of the MHP are encouraged to fill out a survey on the program's website after every competition, rating the organizers of the competition on measures such as quality of judging feedback, promptness of scoresheet returns, and quality

of awards or medals. For example, the top competition in the country, according to the MHP's ranking system, is the Hoppy Halloween Challenge organized by the Prairie Homebrewing Companions in Fargo, N.D. That competition scores 85.7 out of 100 possible points on the MHP's scale. (Comparatively, the American Homebrewers Association's National Homebrew Competition ranks 16th overall with a score of 75.3.)

So, Daily and his club knew the bar was high when organizing the Alamo City Brew Battle—and now they had a blueprint to see what entrants wanted from a medium-sized competition. They made sure it was easy to register for the competition and that the results would be broadcast live online. They secured custom die-cast medals with the competition's logo for each category, and high-quality wood trophies for second- and third-place best-of-show winners. And for



“Competitions now are pushing better quality stuff because they want to meet standards of the MHP.

— Chris Daily

the top prize: to go with the Alamo theme, an engraved Bowie knife with a wooden display base for overall best-of-show.

"The Master Homebrewer Program has these criteria they're looking for," Daily says. "We needed to come out with some pretty cool stuff, pretty cool medals, because that's what people are looking for."

With those high-quality awards, Daily says his goal was to break even, or even be a little in the red overall. But the Alamo Brew Battle sold out at 200 entries in its first year, thanks in part to his promotion through the MHP, and ultimately turned a \$2,000 profit for the club, Daily says. Next year, he hopes to double the size of the competition.

Daily also says the MHP's badge program has impacted the guidance he gave to judges in the competition. According to the BJCP scoresheet, beers that score from 38 to 44 are "excellent." MHP brewers need a minimum score of 38 on their beers to get

to the Distinguished or Master ranking, but at least a 43 for scoresheets to count toward the Grand Master ranking. Daily says he encouraged his judges to carefully consider if a beer was near that 43 level to help give brewers possible MHP credit.

"I think now we have a standardization," Daily says. "Everybody is trying their best to win at some of the best competitions on that ranking list. Now you really get to see where your skills lie against some of the better people in the United States."

## COMPETITIVE PERSONALITIES

Some of those top brewers say that the MHP's new standards of excellence have created exciting goals for them to reach for. It helps get longtime brewers out of a rut and adds incentive to try new styles and aim for higher scores, even if the beers don't medal. It has brewers digging through old scoresheets—there's no statute of limitations for MHP entries—to find their highest-scoring entry from years past.

Butler says that she and her husband are known for scoring well with their IPAs and other hoppy beers, but their first-ever medal was for a Belgian style. Lately, however, those styles haven't scored as well for the brewing pair. With MHP, she is motivated to dive in and find out how to improve. When we spoke in August, for example, she had just finished fermenting a split batch of Belgian dubbel at several different temperatures to see how to dial in their competition process for that beer.

"MHP adds another whole layer of goals and things that you can try to reach as a brewer that makes it kind of fun, keeps things interesting," she says. Butler is also a National-level BJCP judge and said that the MHP has helped her evaluate under-represented styles. "It really makes you broaden and be interested in learning about different styles. It also helps you learn more about those different styles and it makes you a better judge."

Both the circuit and badge-rank system of the MHP benefit high-quality competitive brewers most. Homebrewers who do not enter competitions, or whose beers do not score well at competition, will not succeed. Herrold says relying on BJCP standards for quality beers helps brewers in the MHP dial in their recipes with blind feedback.

"The feedback that you get from entering the same beer in multiple competitions, you can really see and tweak to make the best beer possible," Herrold says. "If you're really itching to jump out of just brewing for yourself and really taking this hobby to



MHP adds another  
whole layer of goals  
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that makes it kind of fun,  
keeps things interesting.

— Stephanie Butler

the next level, competing is where it's at."

MHP is also creating a grassroots network of nationally competitive homebrewers like never before. The program's private Facebook group is a forum where brewers share recipes, critique and promote competitions, and chat with other advanced-level hobbyists. Now, MHP members from coast to coast can connect names on medal stands with virtual friends and co-competitors in the MHP. Herrold has also organized happy hour-style meetups at the AHA's Homebrew Con for the past two years.

"Seeing people in person that you've been chatting with online for the last year, it's really cool to actually meet them and have a beer together and just talk about brewing," Butler says. "It's nice to find a community of people that are as passionate and geeky about it as we are."



## EXTERNAL VALIDATION

Carl Teachey is new to that passionate, geeky competitive community. He had brewed a few small batches starting in graduate school, but, like many brewers, decided to up his game when the COVID-19 pandemic forced at-home lockdowns.

He set a goal to brew every BJCP style, just as a personal challenge. His homebrew club, the Winston-Salem Wort Hawgs in North Carolina, wasn't particularly competitive, Teachey says, so he had planned to brew the batches just for himself.

But as anyone who has brewed multiple batches in a row soon learns, Teachey was quickly overwhelmed with bottles of his various brews.

"There's no way I'm gonna drink all this," he remembers thinking. "If I want to keep on moving through the style guidelines, I need a better outlet."

The first night he started looking for competitions for his excess beer, he found the MHP. He used it as a guide not only to find competitions, but as an added benefit of his style guide challenge. Less than a year after he started entering homebrew competitions, he



Individuals or homebrew clubs can join the Master Homebrewer Program.

Photos courtesy of Matthew Herold

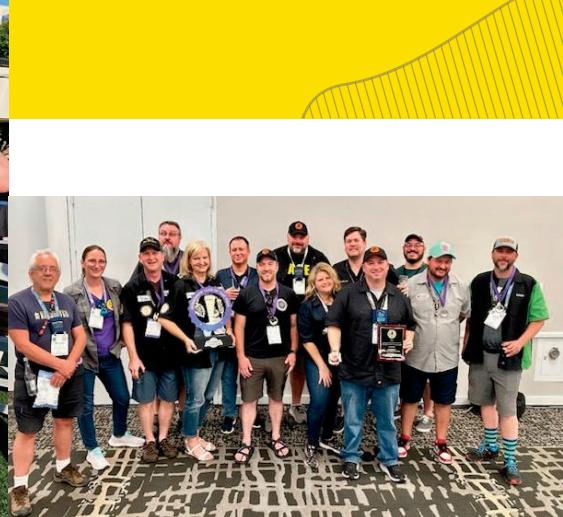
earned Grand Master status in the program.

Teachey also says the MHP's competitive pressure has helped him dial in his brewing. No longer is he brewing just for his own enjoyment, but specifically to earn points and climb the ranks of the MHP.

"As far as evaluating my own stuff, that was the big missing piece. I could brew it, and I feel like I've got a decent palate," Teachey says. "[But] when I picked up

my brewing and started brewing more frequently, it just felt like a waste of my efforts to do it without any sort of external validation."

Teachey is still focusing on his all-style challenge and was recently working his way through the Scottish ales. He says that now that he's started brewing competitively through the MHP, he trusts his technique to pull off better batches every time.



"Instead of accidentally making something good," Teachey says, "I can do good on purpose."

**Charlie Scudder** is a freelance writer and editor based in North Texas and a professor of practice in Southern Methodist University's division of journalism. He is an officer in the Horsemen of the Hopocalypse homebrew club in Fort Worth, Texas, and is a BJCP Certified judge.

< Continued from page 29.

what you're working with will let you plan accordingly, and keep you from scratching your head and wrinkling your brow when you get a taste of the finished product.

There's no way to lower the levels of either one of these ions other than diluting your water with distilled or reverse osmosis water, which, of course, will dilute the concentration of all ions present. But if you need to raise the level of one or the other, you have a few options. There's nothing that I know of that will raise sulfate by itself, but you could add either gypsum or Epsom salts. Gypsum is calcium sulfate, so adding gypsum will also add calcium along with sulfate; adding Epsom salts will add magnesium in addition to sulfate. If, on the other hand, you need to raise your chloride levels, you could add a small amount of table salt (which is sodium chloride, so of course, you're also adding sodium) or calcium chloride, which will also lower your pH. More on that later.

A third factor to consider is your water's **residual alkalinity, or RA**. This measures how resistant the pH of your water is to change, and it's important because it will tell you, the brewer, how alkaline the water will be in the mash. However, residual alkalinity is not shown on water reports, as

it is a brewing-specific value. Fortunately, though, if you know the levels of calcium, magnesium, and alkalinity (commonly reported as calcium carbonate equivalent, or mg of  $\text{CaCO}_3/\text{L}$  equivalent), then you can perform a simple calculation on your own to determine your RA. Also keep in mind that residual alkalinity, alkalinity, pH, and hardness are all different values. Think of it like this: the water's alkalinity is effectively reduced by its hardness; the interaction or ratio of these two values is expressed by residual alkalinity, and knowing your residual alkalinity will allow you to more accurately estimate and adjust the pH of your mash. So let's circle back to the fourth and final factor: **pH**.

You may remember from your eighth grade science class that pH stands for "potential of hydrogen." The important takeaway, though, is that pH measures how acidic or basic a substance is. (You might've heard the term "alkaline" used synonymously with the word "basic" to denote the opposite of acidic, but this isn't entirely accurate.) Water is commonly thought to have a pH value of 7.0—in other words, the exact midpoint of the 14-point scale, making it true neutral. This is a sweeping generalization, though. It isn't just so-called "mineral waters" that have a higher

pH value. The pH of your water is important because the pH of your mash is important, and that pH is determined not solely by your grain bill, but also by your water. The ideal pH of your mash is within the range of 5.2–5.6. A mash within this range will mean greater flavor stability, better hop extraction rates, and improved color and clarity. You can use a pH meter or test strips to find out what yours is, or software to give you a pretty accurate estimate, but keep in mind that your pH measurement should be taken from a sample cooled to room temperature.

Knowing the pH of your water in advance will help you better calculate the likely pH of your mash, and plan ahead in case you need to raise or lower it to get "in the zone." Lighter beers in particular risk a higher pH. If you need to lower your pH, you can do it with lactic acid or by adding an acid rest to your mash schedule. If, on the other hand, you need to raise the pH, this can be done with any of several readily available additives. Calcium carbonate is a solid choice, but simple baking soda (soda, mind you, not powder) will do the trick, too. In short, whatever the pH value of your water is, it isn't a dealbreaker. You can control the pH of your mash during

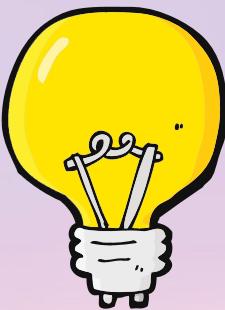
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# GADGET

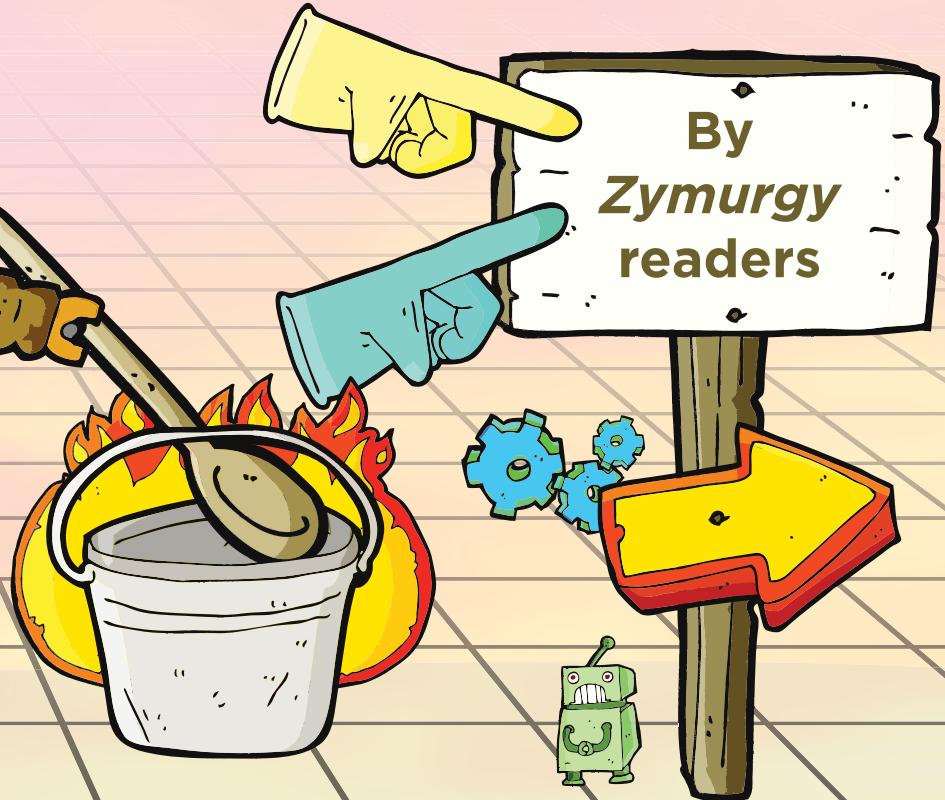
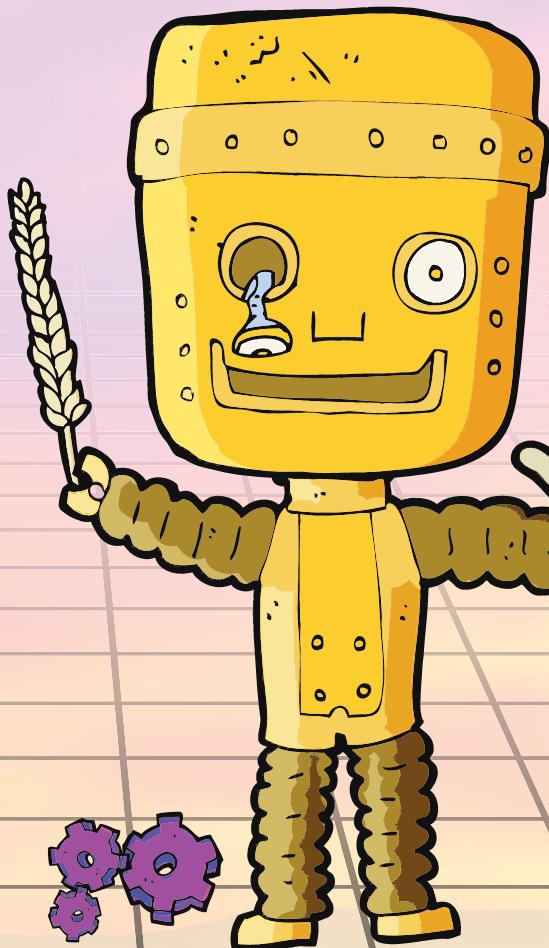


# LET'S

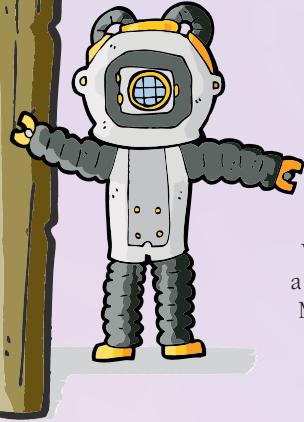
2023



**H**omebrewers enjoy a rich heritage of creative, thrifty, do-it-yourself solutions to life's beermaking problems. Although today's hobbyists enjoy unprecedented access to purpose-built brewing equipment, that DIY spirit remains very much a part of homebrewing culture. Zymurgy's annual gadgets feature is dedicated to that spirit. Read on to discover how today's homebrewers continue to solve everyday problems with innovative gadgets.



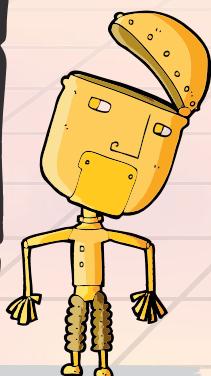
## RECIRCULATION ARM



Inspired by Blichmann's Direct Deposit recirculation arm, I constructed a gadget from a WineEasy racking cane, a Simpson Strong-Tie mending plate, a couple of grommets, and a SharkBite end cap fitting. I use it when mashing with my Anvil Foundry brewing system. My mash efficiency has improved significantly using this device, going from 68% to 78%.

**John Gale**  
*Shelton, Conn.*

## WATER-CHILLED FERMENTERS



I got a free water dispensing chiller and replaced the thermostat with a digital controller. Then I connected it to my conical fermenter's cooling jacket.

**Bradley Baugher**  
*Orland, Calif.*

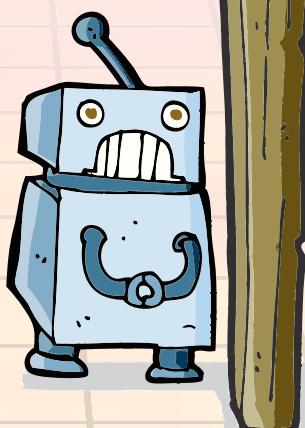
## FERMENTATION BALLOON



I joined together an air lock and blow off tube with a tee and a needle valve to isolate the airlock when fermentation is too vigorous. Toward the end of fermentation, I install a Mylar balloon to the blow off hose to have a reservoir of CO<sub>2</sub> for cold crashing. I added four brass clamps to the lid so I can use about 3 psi of CO<sub>2</sub> pressure to transfer to a keg.

**Robb Stewart**  
Maltose Falcons  
*Santa Clarita, Calif.*

## RINSER/WASHER



I made this high-pressure rinser/washer in 1987 and only replaced one hose clamp a few years ago. It works for bottles, carboys, kegs, hoses, and many other brewery items, and it's especially good for knocking dried kräusen from the sides of carboys and fermenters.

**Jay Thomas**  
*Lakewood, Colo.*



I finally got a grain mill last year for Christmas and intended to set it up with a motor driving it with a belt. Thinking of the motors and pulleys I had around or needed to purchase, I was concerned about the precious floor space it would take. It would have to store on a shelf. Then I got to thinking of other electric motor-driven devices I already had that I might adapt it to, and I came up with a way to attach it to my band saw.

The existing drive shaft had enough room for another pulley, so I calculated the diameter it should be to remain within the speed range specified by the manufacturer. The  $\frac{1}{2}$ -inch rods slide into holes that I drilled into the saw base and apply just enough weight to the belt to tension it properly. The mill easily stows on a shelf, and the band saw is on wheels and can always be moved out of my way for brewing.

**Robb Stewart**  
Maltose Falcons  
*Santa Clarita, Calif.*



This is my Uri Geller Sparge Arm Diffuser. I found the cheapest quality stainless-steel spoon in the breakroom drawer at work, bent it using the power of my mind (cheap spoons are easy to bend, whether you use your mind or your hands), and attached it with a couple of hose clamps to my Locline sparge arm. I position the Locline just above the grain bed and don't have to worry about the sparge drilling through the grain as I recirculate my wort.

**Cameron LiDestri**  
*Stratford, Conn.*

## KETTLE/KEG RINSER



I got tired of trying to hold my 20-gallon kettles upside down while using a garden hose to rinse out trub and crud before a proper clean. I found a sink step switch on Allie Express, sourced a PVC X+1 on Amazon, and got the rest from Home Depot. It works great, and since the kettles rest on the PVC, the rims do not get scratched. I also find it useful for keg cleaning to do a good quick rinse before deep cleaning with my homemade keg cleaner.

Steve Windhorn  
Tualatin, Ore.



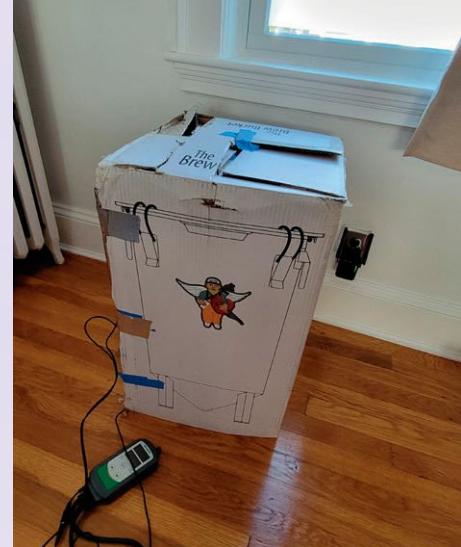
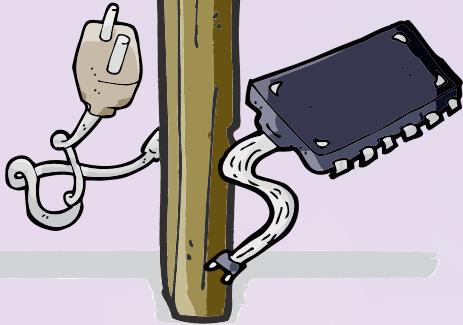
## SPARGE ARM DIFFUSER



My hop spider used to sit in the wort when I hung it on the side of the kettle to drain. So, I cobbled together a few pieces of scrap wood to create a holder that hangs from the immersion chiller. This keeps the spider above the surface of the wort for complete draining.

Robert Resetar  
Roswell, Ga.

## INSULATED FERMENTATION BOX



This insulated box for fermentation vessels is made from upcycled materials, an idea that hatched in the summer of 2020.

I began with the original brew bucket box and lined the interior of the box with bubble wrap bags from delivered foods. I used silver plumber's tape to affix the bubble wrap to the interior. Then, using the cardboard packing pieces from the original brew bucket box, I double walled all of the interior walls and sides except the top. The top flaps stay on but are custom cut to allow the airlock or blow-off tube to be situated correctly during the ferment.

When the fermenter is inside the box, it is less susceptible to ambient room or closet temperature fluctuations. For example, I fermented a kveik pale ale and maintained a high temperature throughout fermentation more consistently than if it had been sitting out. Recently, I kept a consistent 92°F (33°C) for three days through a heat wave that caused my house to reach 87°F (31°C).

Using the box in the basement works well, too. When I want a cooler ambient temperature, say 60–65°F (16–18°C), I just leave the box door open. When I need to start warming it up again, I close the door and set my warming sleeve to the required temperature.

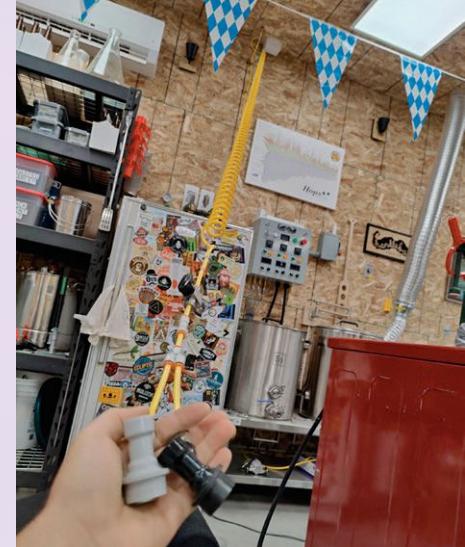
Mark Slater | Braukline | Quincy, Mass.

## BREW GEAR ORGANIZER

I built this wall-mounted organizer from scrap metal left over from another project.

Peter Rowe  
Susquehanna, Pa.





I have CO<sub>2</sub> lines that run up to my attic, where I keep the tank. Distribution lines flow into my cold room, bottle fill station, and fermenter for purging and kegging. This gadget is very handy for purging kegs prior to filling or for pressurizing with CO<sub>2</sub> before placing in the cold room. It's a retractable coil of tubing with a shutoff valve, one-way check valve, and gas/liquid ball-lock connectors. The retraction system is an old laundry line retractor that I tied to the tubing with Oetiker clamps. It extends quite far and attaches to the wall with a magnet when not in use.

**Greg Paterson**  
Saskatoon Headhunters Brewing Club  
Saskatoon, SK, Canada



A 6-quart slow cooker with temperature probe (Hamilton Beach, \$70) is the heart of my 2-gallon, all-grain system. I have used this mash system more than 70 times to conduct multiple-step mashes, mostly using grains other than barley malt. The lauter tun was made from two nesting 1-gallon plastic buckets (note the rubber band gaskets) and lots of drilling. Springy silicon tubing combined with a screw clamp (called a Hoffman clamp) allows for fine-tuning of the lauter flow. Fermentation takes place in a 3-gallon plastic cylindroconical vessel from Brew Demon or in a 3-gallon glass carboy. An INKBIRD thermostat-controlled beverage refrigerator with a heating pad offers fermentation temperature flexibility.

**Luther Leake**  
Waterbury Center, Vt.



# Fermenting In A Pumpkin

By Nelson Crowle

**A**hhh, yes, pumpkin beers. They go through phases—great reputation, bad rap. Sometimes there are too many of them. Sometimes they appear too early in the season and dilute the importance of the Halloween-to-Thanksgiving period in which they are most relevant. Early US settlers made pumpkin beer out of necessity because pumpkin was much more available than malt. George Washington and his contemporaries made beer from pumpkins, molasses, and other sugar sources (including malt). Of course, “pumpkin beer” often is really “pumpkin spice” beer unless you use flavorful gourds (see “The Return of the Great Pumpkin”, *Zymurgy* Sept/Oct 2023).



“Leave your pumpkin fermenter on display during your next dinner party—a great lead into talking about beer and homebrewing!”

I wanted to make a pumpkin beer in a pumpkin, using the pumpkin as the fermenter. There were some questions, including one very important one: are there contamination issues with raw pumpkin? I solved this by pouring boiling wort straight into the pumpkin for instant pasteurization. Second question: would the pumpkin explode with the immediate temperature change of boiling wort? No, it didn't. Third question: could a pumpkin hold wort without leaking? Yes, it did.

With the show-stopper questions out of the way, it was time to dig into the details. First, how to select the pumpkin? I wanted a large pumpkin that was close to perfectly round and without any gashes or significant blemishes. Also, it had to be able to sit upright on its own without leaning or tipping over. The one I found was 12 inches in diameter. I cut out the “lid” of the pumpkin on an inward slant so that it would close back up and not fall through, and then I scooped out the seeds and strings.

The next step was to determine how much wort to make. Opening the lid of the pumpkin, I measured the pumpkin flesh thickness at about 1 inch, so I needed to calculate the volume of a 10-inch diameter (5-inch radius) sphere (that's 12 inches outer diameter minus two thicknesses of 1-inch pumpkin flesh). The formula for volume of a sphere is  $(4/3) \times \pi r^3$  so with a radius of 5 inches, the volume is about 524 cubic inches. There are 231 cubic inches in a US gallon, so the total volume should be about 2.27 gallons. (See Table 1.)

With this small volume easily doable on the kitchen stove, I went with a simple 4-gallon one-pot concept and calculated the

Photo courtesy of Nelson Crowle



## Pumpkin Fermenter

Recipe by Nelson Crowle

This recipe assumes you are fermenting in a 12-inch-diameter pumpkin having a volume of approximately 2.25 gallons. If you use a different-sized pumpkin, you may wish to adjust the recipe to fill the gourd. Adjust spices to taste. If you conduct a 60-minute boil on wort instead of making a hop tea, increase the hop addition to 0.16 oz. (4.5 g).

**Batch volume:** 2.25 US gal. [8.52 L]

**Original Gravity:** 1.080 [19.3°P]

**Final Gravity:** 1.017 [4.3°P]

**Bitterness:** 16 IBU

**Color:** Deep copper

**Alcohol:** 8.2% by volume

### YEAST

1 sachet Fermentis SafAle S-04

### BREWING NOTES

Boil hops in 0.5 gal. (1.9 L) water for 45 minutes to create a hop tea. Stir in malt extract and brown sugar to dissolve, and then boil 15 minutes more. Add spices and agave, stir, and turn off the heat.

Immediately open the pumpkin and pour the hot wort, including spices, directly inside, leaving a couple of inches of headspace for kräusen. If you have extra wort, you can add it in after high kräusen. Return pumpkin lid to the pumpkin and let wort naturally cool.

When wort is cool, open the pumpkin lid and pitch the yeast. Ferment until kräusen falls, and then remove the spices and optionally top up with reserved wort, if any. Age the beer in the pumpkin a couple of weeks more before kegging or bottling with 2.5 vol. (5 g/L) CO<sub>2</sub>.

### ALL-GRAIN OPTION

Replace the DME with 4.5 lb. (2.04 kg) of your favorite pale malt and 0.3 lb. (136 g) of Weyermann Carafla I. Mash at 152°F.

### MALTS & ADJUNCTS

3 lb. (1.36 kg) Briess CBW Traditional Dark DME

0.75 lb. (340 g) characterful brown sugar (panela, muscovado, etc.)

0.75 lb. (340 g) agave syrup

### HOPS

0.1 oz. (3 g) Magnum, 14% a.a. @ 60 min

### FLAME-OUT SPICES

8 allspice berries, whole

½ tsp. powdered ginger

½ tsp. mace

½ tsp. nutmeg

2 small sticks cinnamon

¼ tsp. vanilla extract

recipe using dried malt extract (DME). For an all-grain recipe, replace the DME with 4.5 pounds of Root Shoot Pale Genie malt or your favorite pale malt and 0.3 pounds of Weyermann Carafa I for color, and then mash at 152°F (assuming 70% mash efficiency). I did not want any hop flavor or aroma, so I started with a half-gallon of water in the pot and boiled a hop tea for 45 minutes. I added the malt extract and brown sugar, stirred to dissolve, then boiled for 15 more minutes, added the spices and agave, stirred, and turned off the heat.

Immediately after turning off the heat, I opened the pumpkin and poured the very hot wort, including spices, directly into the pumpkin, leaving a couple of inches of airspace at the top for the kräusen during fermentation. If you have extra wort, you can add it in after high kräusen. After that, I put the pumpkin lid back on and waited overnight for the wort to cool. I opened the pumpkin lid and pitched the yeast, which I rehydrated, but sprinkling the dried yeast on the wort is just fine, too. I poked a vertical hole into the top of the pumpkin and pushed the airlock through until it just barely stuck out inside the

**TABLE 1: PUMPKIN DIAMETER VS. VOLUME**

Pumpkin inner diameter in inches	Pumpkin volume in gallons
8	1.16
10	2.27
12	3.92
14	6.22
16	9.28
18	13.22
20	18.13

pumpkin (but not into the wort). The airlock probe end should be tight in the hole to seal well.

After four days when the kräusen had fallen, I removed the spices and topped up the pumpkin with the extra wort that didn't fit, then let the beer sit for a couple of weeks to stabilize and, hopefully, absorb more pumpkin flavor. I transferred to a keg and carbonated to 2.5 volumes. You can keg or bottle according to your usual process.

This was a fun and unique experience. It will allow you to make a small, simple

batch of beer using minimal equipment while exploring the possibilities of alternative fermentation vessels. If you leave your pumpkin fermenter on display during your next dinner party, you are sure to get lots of "What the heck is that?" questions—a great lead into talking about beer and homebrewing!

*Nelson Crowle is a National BJCP beer judge with Mead and Cider endorsements and creator of the Reggie competition and judging platform.*

< Continued from page 59.

conversion—and knowing what your water is bringing to the table (or to the mash tun) lets you plan accordingly.

If memory serves, I drove back from the river house that night with five carboys of sweetwater—one of which, yes, burst en route and dumped five gallons of water into the back of the vehicle—and one carboy of wort in fine trim and already in vigorous ferment. A friend and brewing buddy had requested my take on a recipe for a no-frills dry stout, perhaps as a challenge in the face of some of my more complex grain bills, penchant for vorlaufing (don't knock it 'til you've tried it), and fanciful concept brews. A simple, straightforward recipe like that struck me as a perfect way to get out of the way of the water and see what it could do. Brewing on my own back porch or back patio was always a good time, but brewing out on the front patio of the family's river cottage on a gorgeous day in early autumn with a convocation of sunrays gathering on the Rappahannock had taken it to the next level. I had high hopes for the stout even before I pitched the yeast and lifted the carboy up to the back hatch for the drive into the west. The drive did wonders for its aeration, truly, and by the time I was home again I had to swap the airlock for a blowoff tube. Fermentation always produces a fond

impatience, but even though this one got off to a fast start and I was more impatient than usual, I gave it its due time in the carboy. Point of fact, given that this was my second time brewing this recipe and I'd kept notes on my first, I gave it exactly the same amount of time that I'd given that first batch.

Once it was done, bottled, and given its last long rest, I requested help to conduct a blind tasting of the first batch—brewed with filtered municipal water—versus the batch featuring water from the well, with all other factors being absolutely as equal as I could make them. I'll admit my bias: I wanted there to be a difference. I was rooting for the water—the water from the well, the sweetwater, had become the *real* water, in my mind, water unadulterated and beyond reproach, water that didn't require correction. Admittedly, I was rooting for the mystic, and for the mystique of the water. I was rooting for the memories and stories of my childhood, the drops of truth within the legend, the mythic quality of the story of men drinking from a silver spade. That was what I wanted to brew with. That was the story I wanted the stout to tell.

The truth is, they were both fine beers. And the truth, too, is that I did taste a difference. It was subtle, but it was real, and not just some fancy based on wishful

thinking. They were both fine beers, but of the two, one was ever-so-slightly more fulsome, more nuanced, more balanced between the roast of the dark grains and a familiar mineral note that I recognized. It was both bright and earthy, like petrichor after a rain. It's impossible to say whether I appreciated it more for its own sake or because I recognized it—and really, that's the point. I recognized the taste, and if I recognized the taste, then I had my proof: the water mattered, and it mattered in a very real and sensory way.

So, test the waters. There's something to be said for knowing what's in there, and having your water tested is never a bad idea. Knowing your terroir is knowing the land and waters of your environment—your home—in a very real and sensory way.

*J. K. Bywaters is an award-winning storyteller, author, and brewer. His work has appeared in print in publications ranging from Holistic Healing magazine to the anthologies of Bibliotheca Alexandrina; recently online at resolutegent.com; and on the judging tables of central Virginia's Dominion Cup. He has been telling tales, brewing ales, and tramping about in the woods for some time now, and cordially invites you to follow him on Facebook and X.*

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# Tunes & Brews

can't tell you the first music I ever listened to, but I can tell you the exact moment I fell in love with music: five years old, seeing the band Queen performing on the back of a train in their music video for the song "Breakthru." I became musically obsessed. Listening to everything and anything, thanks to this eclectic band, I developed an eclectic music taste.

It's the same story for beer, I can't tell you the first beer I had ever had, but I can tell you the beer that made me obsessed with trying every style: Stone's Arrogant Bastard. Brash, boozy, hoppy; I had just moved to Colorado from the UK, and this beer was different from anything I'd tasted before. This was in '08, when the Colorado brewery scene was scaling new heights, perfect timing for a new beer geek to begin their journey. I began homebrewing a few years later.

Beer and music are intertwined in my life. Listening to an album on vinyl, hanging with friends, seeing a live show, I like the music loud and a cold beer in my hand. However, there is no other time when the two truly come together than on a brew day.

My brew days always begin with the same first step, and that's selecting the soundtrack for the day. While I have certain favorite songs to base a radio station off of, sometimes I find it really fun to match the music to the beer I'm making. If I'm making a West Coast IPA, then SoCal punk rock from the '90/00s is perfect (tip: begin the station with Lit's "My Own Worst Enemy"). If I'm making an American blonde, a recent addition to my vinyl collection, the *Barbie* movie soundtrack provides the perfect vibe.

One of the reasons music and beer go so well together is that both are so personal to the listener and brewer. What is

amazing to me might not be your taste, but we might both appreciate a singer in a different genre, or a different style of beer. And if we don't share any of the same tastes, that's cool, too; there's a lot of great stuff out there to be discovered.

When I had the idea for this article I put out a question on social media asking what everyone listened to while brewing, and there wasn't one prevalent genre. Hip hop, metal, blues, jazz, pirate-themed punk rock—this is an amazingly small sample of the responses (to the guy who said "Zoom meetings," respect to you for not letting work get in the way of the truly important things in life!).

What came out of some of the responses, however, were the whys for the music choices. For some, it was their favorite

style of music; for others, it was the music of choice of departed friends and family they used to brew with, and for even others it was music that inspired their beers. Because of French pop, one responder was inspired to brew a bière de garde, listening to *pop à la Française* on the brew day (for some solid French pop music, check out Vendredi Sur Mer).

Similarly, I once wanted to make a beer inspired by the guitar-driven genre of my school days: Britpop. A beer to honor Oasis, Blur, Pulp, and the lagers that accompanied their music. Lager was the official drink of the nationally proud lad and ladettes in '90s Britain, the irony lost on them that the beer they were drinking originated in the German state of Bavaria. Using a grain bill of German Pilsner and Maris Otter, British hops of Target and Goldings, fermenting with German lager yeast, I filled my brew day with distorted guitars, chord sequences ripped off from The Beatles, and lyrics that poked fun at the humdrum of everyday life. Named BritHop, this was a big hit at summer parties because it's refreshing with the earthy British hops providing a unique tasting lager. (Recommend album pairing is *Do It Yourself* by The Seahorses).

*Side note to bring this all full circle: My neighbors appreciated the BritHop brew day way more than when I played the '80s synth heavy, semi-experimental Flash Gordon soundtrack by Queen on repeat for my Gordon's Alive! Gin & Tonic beer. [See recipes for BritHop and Gordon's Alive! G&T beer on page 12.]*

Music and beer have always been partners in crime. From Bavarian drinking songs to beer-sponsored music festivals, this intrinsic connection often goes unnoticed, but it's always appreciated. So, whatever your music of choice, crank the volume up to max, raise your beer of choice with me, and yell "Cheers!" before we all start singing Bon Jovi's "Livin' on a Prayer," perhaps the finest drinking song there is.

A homebrewer for 10 years, Andrew likes to think he's introduced his neighbors to a lot of great music over the years.





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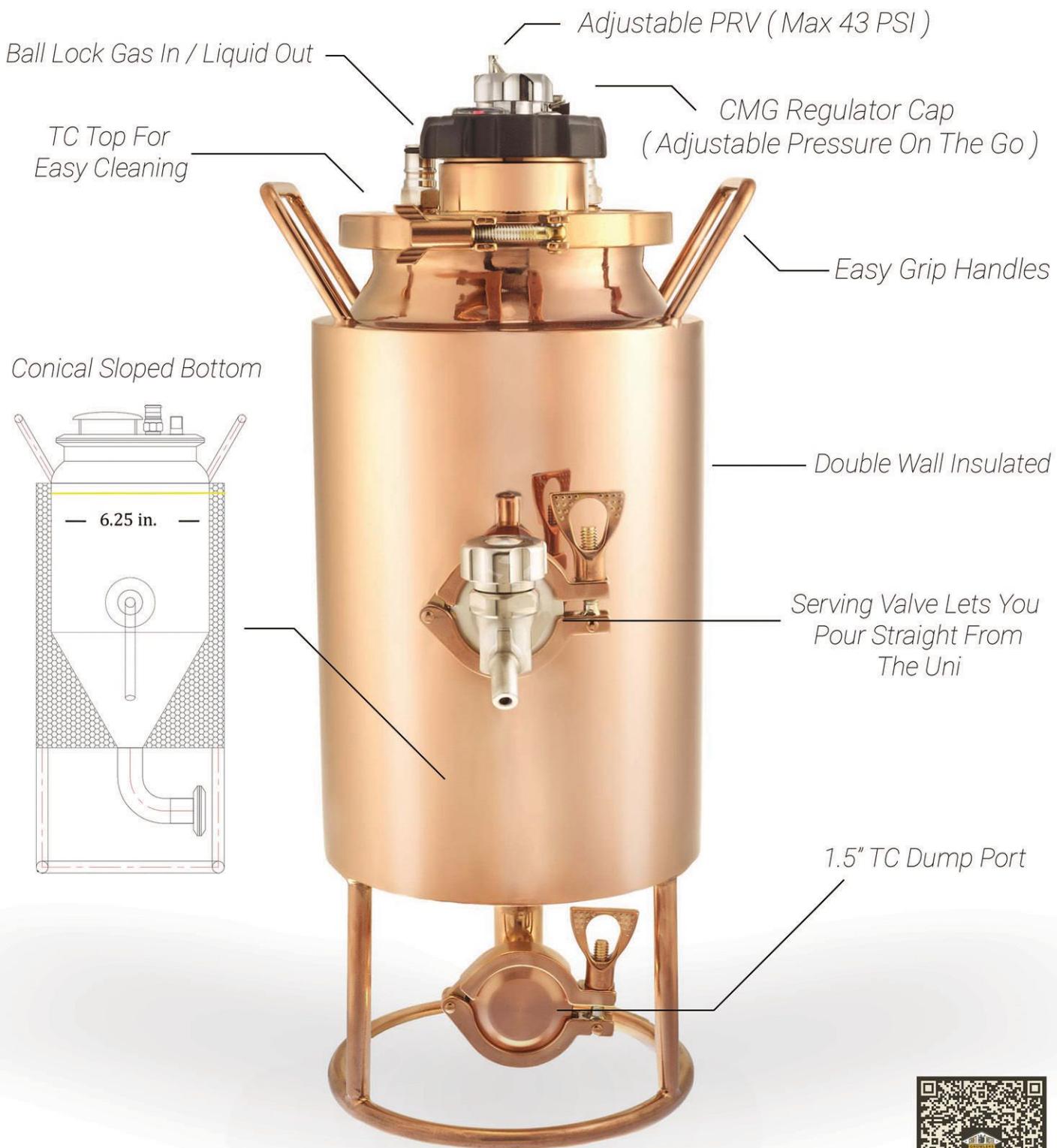
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