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Pet Projects

If you were of a certain age around the turn of the 21st century, you might remember the Tamagotchi. A portmanteau of the Japanese words for egg (*tamago*) and watch (*uotchi* or *watchi*), a Tamagotchi was (and still is) a virtual pet. Tama-guardians were responsible for feeding, training, and caring for their digital charges.

I never owned a Tamagotchi, but I do think about them with some frequency as I nurture my own litter of fermentative pets at home.

Some members of my microbe menagerie are always at work. These include a culture that ensures an ongoing supply of yogurt and a sourdough starter for making bread in the cooler months of the year. I don't bake in summer, but I do still feed the starter, biding time until the return of oven-worthy weather.

Other projects are one-offs. I usually have sauerkraut sitting around at some stage of development, but each batch starts anew—heads of cabbage thankfully come preloaded with all the *Lactobacillus* needed to self convert. Occasionally I'll steal some 'kraut brine to kickstart another fermentation, mustard for example. As I write this, I'm just putting up some giardiniera in anticipation of summer sandwiches in the backyard Biergarten. I didn't grow up eating giardiniera, but now I can't stop.

And then there are, of course, the beer cultures. I mostly stick to dry yeast these days, but I do like to keep a few liquid strains around for hefeweizen, monastic-style Belgian ales, and kellerbier. I'm currently propagating up an English ale yeast from a slant I cultured from a bottle of St. Austell Proper Job Cornish IPA on my last trip to the UK.

I also have an ongoing solera-ish thing living in a carboy into which I periodically toss microbes. At present, it's a mélange of Wyeast 3278 Lambic Blend, Bootleg Biology OB Belgian Ale, and Inland Island INIS-491 French Saison, augmented by bottle dregs from Jester King, Brasserie Cantillon, and Purpose Brewing & Cellars, to name a few. When I enjoy a mixed-fermentation beer, the dregs go in.

Don't ask me to classify it. I intend to pull part of it to age with Montmorency cherry juice for a few months to make something you might call a kriek, but I have no way of dictating what it will ultimately be. I don't have quite enough space to maintain parallel lambic-y things, so blending isn't really an option. What's there is there, and I'm the one who has to adapt. In some ways, that is reassuring.

Then there are the occasional non-fermentation-related things. Despite my perennially bad track record with gardening, I'm once again attempting to grow *Neomexicanus* hops and a few heritage chiles and tomatoes this year. The latter will surprise those who know me well, as I sincerely abhor most tomatoes on the grounds that they are somehow watery and mealy at the same time. But I do like a good fresh tomato in season, which is why I keep trying. Also because I am stubborn.

All of these projects are personal, but my latest is more personal than most. I started writing this column a couple of weeks before I had to say goodbye to Biscuit, my black cat of 19 years. This issue of *Zymurgy* went to press very shortly after my wife and I lost him to old age.

Biscuit was never much for brew sessions, but he occupied my lap on the vast majority of the days that I edited this pub-

lication. His contributions to *Zymurgy* were less immediately obvious than those of the writers and artists we hire for interesting stories and compelling covers, but they were no less significant to me.

He was impossibly patient, lying in my lap as I worked until one of my legs fell asleep or I needed a bathroom break. I would lift him from my lap, his cat-bun pose remaining intact, and lay him on my chair, where he would continue napping and wait for me to finish making coffee, sniffing the yeast starter, or whatever it was I had to do. When I returned to my desk, I would pick the cat bun back up, sit myself down, put him back in my lap, and continue working. He was remarkably malleable. May/June 2023 is the final issue of *Zymurgy* to which he directly contributed. Readers might not notice the difference. But I do.

Biscuit possessed a refined palate for dairy products of all kinds and was a particularly gifted judge of yogurt. When I first started making yogurt, he turned up his nose at my homemade attempts, though he still enjoyed commercial brands. Among his final acts was approving of my latest attempt at Greek-style yogurt.

So, four days before this issue went to press, I pulled a couple of tablespoons from the batch he liked and stirred it into two liters of warm milk. I intend to keep it going as long as I can. It's a pet project to honor a pet who gave me much more than I can adequately articulate.

Cheers to all of your pets—please keep sending us photos of them, and please squeeze them tightly. Unless your pet is a fish. Please do not squeeze your fish.

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



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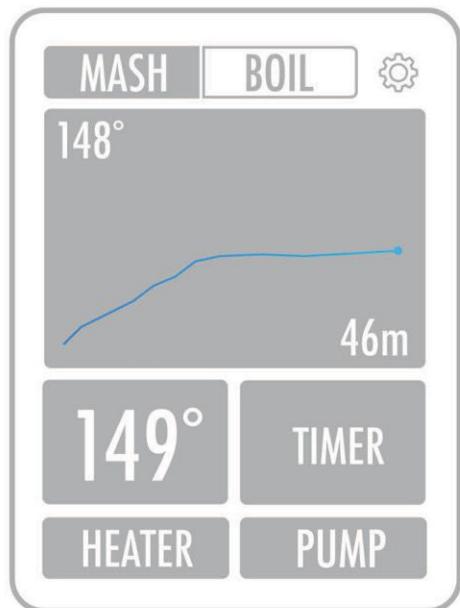
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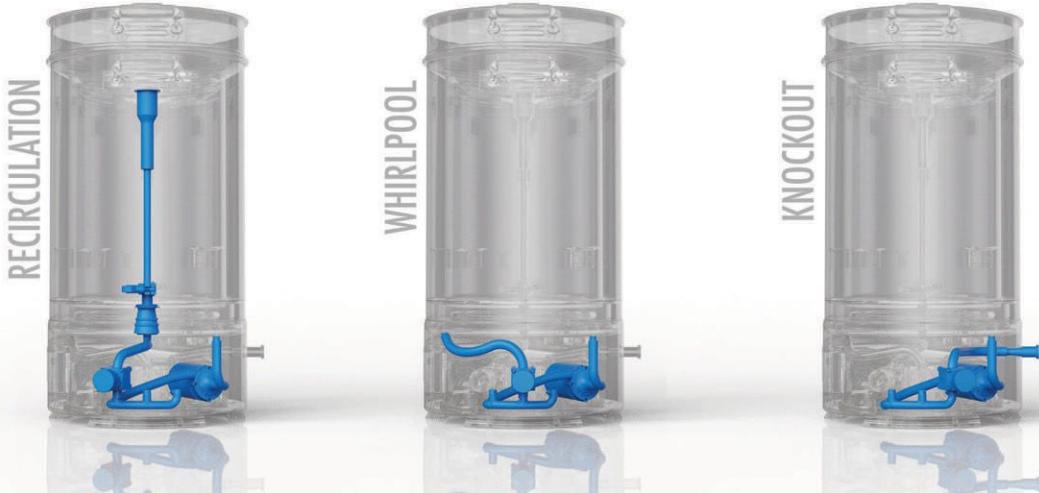
The SVBS has become one of the most elusive products in Ss Brewtech history, but we're excited to announce it is finally here. With a clear vision of what we wanted, we had to bend a few rules.

Countless design revisions, and one or two complete restarts, and we now have a product we feel will one day be as iconic as our original Brew Bucket. An all-in-one brewhouse that draws inspiration from every facet of Ss Brewtech, a true passion project for our entire the team, the SVBS.
— Ss Brewtech



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Features



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CZECH AMBER LAGER

Polotmavý means half-dark, and, simply speaking, Czech amber lager is just that: amber-colored beer. But when you consider the ingredients and techniques used, a sense of the style begins to emerge. Brewing *polotmavý* at home starts with choosing a path.

By Ryan Pachmayer



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BEERS OF THE VOLGADEUTSCH

Is it possible to reconstruct a traditional Volga German beer? Have enough records and folk memories survived to do so? Travel back to the dusty old villages along the Volga River, to a unique culture not exactly German and not exactly Russian, but something all its own.

By David J. Schmidt



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TRADITIONAL INNOVATION

Brauerei Kundmüller produces around 30 different beers in the small village of Weiher, 10 minutes west of Bamberg, Germany. Kundmüller embraces green technologies and emerging craft beer styles while maintaining the classic look, feel, and core beers of a traditional Franconian brewery.

By Ryan Pachmayer



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CIDER, SIDRA, SAGARDOA

Nothing quite compares to traditional cider from the Asturias and Basque regions of Northern Spain, where cider is a way of life. Various described as tart, earthy, dry, funky, flat, and cloudy, Spanish-style cider is gaining traction among American cidemakers and importers.

By Kristen Kuchar



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CHRISTMAS IN JUNE

Homebrew Con is that lovely, glorious, beautiful event around which the entire homebrewing year revolves. In the Expo, vendors show off the latest in gear and ingredients, and swag is the order of the day. But can you brew a beer using only what you forage in the expo hall? Indeed, you can brew several of them.

By Mark Pasquinelli



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BIG BREW GEAR GUIDE

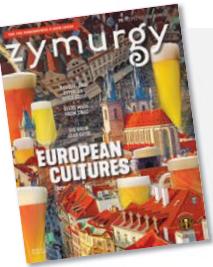
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Vol 46 • No. 3
May/June 2023**zymurgy®**

(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

NOW ON Tap



Tested Products

ANTON PAAR SmartRef



Homebrewers have long relied on hydrometer and refractometer readings to measure and/or infer original and final gravities and, ergo, alcohol by volume. But sometimes we forget to take an original gravity measurement, and without an original gravity, estimating ABV gets a lot harder. Enter SmartRef, the latest high-tech homebrew device from Anton Paar.

SmartRef is a precision digital refractometer that on its own measures the refractive index and, by extension, the extract content of a sample of beer. By pairing SmartRef with the company's EasyDens density meter, which measures density, homebrewers can directly calculate a sample's ABV, even without having first measured original gravity.

The method is detailed in MEBAK (Mitteleuropäische Brautechnische Analysenkommission) B-590.10.070, "Original Gravity, Extract and Alcohol – Refractometric Method," which we suspect not many of you keep on your bedside tables. But a simple explanation of the general idea is available in Petr Novotny's article "Revisiting the Refractometer" in the Jul/Aug 2017 issue of *Zymurgy*.

Having tested Anton Paar's updated EasyDens a while back (see Now on Tap in the Nov/Dec 2021 issue of *Zymurgy*), we were pretty excited to get our hands on SmartRef to see what it can do.

Pairing a device with SmartRef is a piece of cake, requiring only that you download the Brew Meister app and have Bluetooth enabled. Brew Meister is free for one-off measurements, but subscribing to the unrestricted version (\$24.99 per year) lets you assign measurements to individual batches and track them over time.

On its own, SmartRef can tell you the refractive index of your sample, from which it infers extract content in Brix, Plato, or other unit of your choice. The built-in thermometer also shows the temperature of your sample and compensates the measured quantities therefor. But it's the combo of EasyDens and SmartRef that gives you a commercial-grade laboratory in the palm of your hands...well, palms of your hands. Using the Brew Meister app, you can measure virtually everything you'd ever care to know about your beer, wine, mead, or cider, pH notwithstanding.

On its own, SmartRef retails for \$269, but if you bundle it with EasyDens for \$649, you save \$23 off the price of purchasing them separately. AHA members can save another 10 percent off the bundle by using the code in the Big Brew Gear Guide in this issue of *Zymurgy*. See page 70 for details.



What we love:

- The required sample size is even smaller than the already small amount needed for EasyDens. You only need a drop or two, less than half a milliliter.
- As with EasyDens, SmartRef's response time is wicked fast, taking less than two seconds.
- Automatic temperature compensation lets you measure samples over a wide range, from 50° to 212°F (10° to 100°C).
- Homebrewers who are also into aquariums can use SmartRef to measure salinity.

What could be better:

- Lager brewers might prefer that the lower bound of the temperature range be cooler than 50°F (10°C), but this is incredibly nitpicky considering the amount of time it takes to warm such a ridiculously small sample.
- Like EasyDens, SmartRef is a spendy piece of gear. That said, it's definitely a buy-once, cry-once kind of situation. Homebrewers might be a harder sell, but it's a no-brainer for commercial operations.

Tested Products

STILL SPIRITS AIR STILL PRO



First things first, let's get this out of the way. Distillation of beverage alcohol is federally illegal, so you shouldn't do it. Neither Zymurgy, nor the American Homebrewers Association, nor our parent organization the Brewers Association endorses federally illegal activities.

Although it's illegal to distill beverage alcohol, it is entirely legal in many states (check your local statutes) to own a still and use it to distill water, essential oils, and, with a permit, fuel ethanol. We rarely find ourselves in situations that would be improved by essential oils, but distilled water is something every homebrewer can appreciate.

With a 4-liter capacity, the Still Spirits Air Still Pro is too small to practically distill all the water you would need to brew 5 gallons of beer, assuming you start with a blank watery canvas. But it's just the right size to make enough pure H₂O to whip up a crystal-clear batch of Star San (see "Homebrew Quick-Tip Concentrate" in the May/June 2022 issue of Zymurgy). Distilled water is also the preferred wet medium for rinsing and cleaning high-performance instruments such as Anton Paar's EasyDens and SmartRef (see facing page).

If you're lucky enough to live in Kentucky or Tennessee, you can distill your water in a shady holler. The rest of us will have to make do with the kitchen counter. Wherever you are, put on your favorite SteelDrivers album, pour yourself a Mason jar of commercial water, and get ready to distill.

Distilling with the Air Still Pro is as simple as filling the boiler, attaching the still head, hitting go, and sitting back as pure distilled water drip, drip, drips out of the unit and into your collection vessel. Thanks to the internal high-flow fan, there's no need for a complex working-fluid loop to cool and condense the distillate. The whole thing is self-contained, and the Air Still Pro can turn over 4 liters of water in about 8 hours.



Now, let's hypothetically imagine you live in New Zealand, where distillation of beverage alcohol is legal. Law-abiding Kiwis can run the Air Still Pro as a pot still or as a reflux still, the latter of which is what makes this the "Pro" version. In fact, customers who already own the standard Air Still (pot still only) can convert it to an Air Still Pro by swapping out the head unit with an upgraded model.

In reflux mode, typically used for gin and vodka, the Air Still Pro can yield a distillate of 90% ABV, or 180 proof, taking a couple of hours to do so. Working as a pot still, which is more common for rum and whiskey, one can complete a stripping run in under two hours, with the spirit run taking an hour or so. Again, hypothetically.

The Air Still Pro's column comes pre-packed with a mix of stainless and copper saddles to improve condensation activity in reflux mode and remove sulfur compounds from the vapor. An included botanical basket is handy for the kinds of infusions needed for making gin and absinthe...if you have a distiller's license.

The Air Still Pro retails for \$579 and is available from your favorite homebrew retailer. See the Big Brew Gear Guide on page 69 of this issue of Zymurgy for a link.

What we love:

- An included foreshots collector automatically separates the first 50 milliliters of distillate for safe disposal.
- The Air Still Pro is about the size of a large coffeemaker and can easily complement other stainless appliances on your kitchen counter.
- Users (rightfully) concerned about the flammability of ethanol vapor can feel reassured in using a purpose-built still and not some cobbled-together system of questionable safety.

What could be better:

- Changing between pot still and reflux still modes requires swapping out the distillation tip, which is easily over-tightened. Be sure to carefully follow the instructions.
- Reflux mode has an auto-shutoff, but ending a pot still run requires unplugging the unit. An on/off switch would be nice.
- The quick-start manual is adequate, but most of the documentation is online. This will bother some generations of users more than others.



Other New Products

WHITE LABS DRY YEAST

White Labs has launched WLP001 California Ale Yeast in an active dry format, the company's first foray into dried yeast.

"While liquid yeast will always be our leading product for the best-quality beer, we wanted to ensure that brewers around the world had access to White Labs quality yeast, and specifically WLP001," says Chris White, founder and CEO of White Labs.

White Labs WLP001 California Ale Yeast is available in professional-size 500-gram packages, and 11-gram homebrew sachets. At least two additional strains are expected to launch as dry products this summer.



Free Big Brew 2023
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Big Brew

The 26th annual AHA Big Brew takes place Saturday, May 6, 2023. Homebrewers worldwide can participate by firing up their kettles and raising a glass to the greatest hobby there is—homebrewing!

This year's official Big Brew recipe is Nearly Nirvana Pale Ale. To download the recipe to your phone and more Big Brew information to your noggin, visit HomebrewersAssociation.org.

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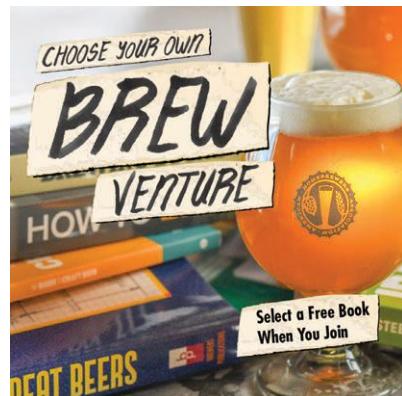
There's still time to register for Homebrew Con™ 2023, taking place June 22–24 at the Town & Country Resort in San Diego. It's the AHA's 45th National Homebrew Conference, and we're expecting more than 1,500 of you to join us for 35 educational sessions

and plenty of social time. Of course, Club Night is everyone's favorite, and with more than 40 homebrew clubs currently scheduled to represent, it's guaranteed to be a memorable evening. Visit HomebrewCon.org for the latest and to snag your tickets.

Free Book with AHA Membership Purchase or Renewal

Buy a membership (or renew an existing one) with the American Homebrewers Association for one year and receive your choice of a free brewing book! All Brewers Publications books under \$24.95 qualify for this special offer, including *How To Brew* by John Palmer and new releases featuring beer styles, ingredients, methods, and more.

Just purchase a one-year new membership or renewal to receive a unique code redeemable for one book on BrewersPublications.com priced at \$24.95 or less. Purchasers are responsible for shipping, and codes do not have a cash value. This offer is valid to new and renewing AHA members through December 31, 2023.



Rediscover Your AHA Home on the Web

How long has it been since you logged into HomebrewersAssociation.org? If you haven't visited the AHA's website in a while, you're missing out on your digital membership card, online issues of Zymurgy dating back to Jan/Feb 2000 (remember, you can download the PDFs for offline reading), members-only exclusive homebrew recipes, the AHA Forum, and much more.

The AHA moved its member database to a new platform in 2022. If you haven't logged in since the data migration and you encounter any challenges doing so, our membership team stands ready to help you reconnect with your digital account. So, head over to HomebrewersAssociation.org today and start making the most of your membership.



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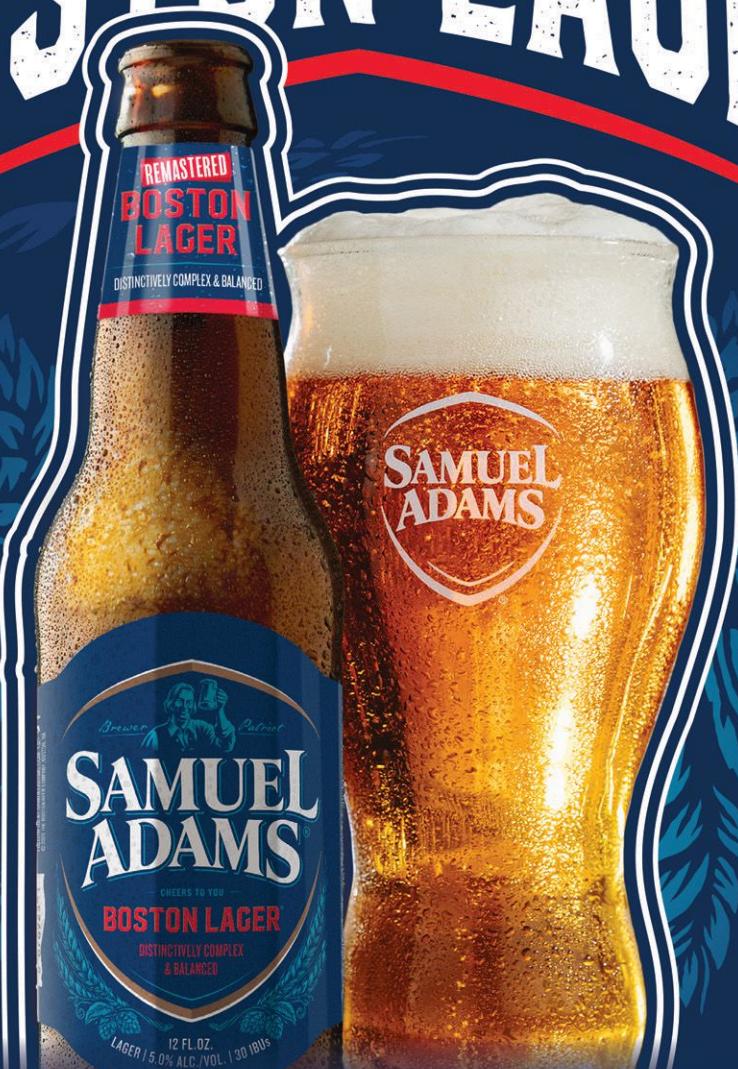
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TEAM HOMEBREWING UPS YOUR GAME

If asked to count the number of days I've homebrewed alone versus with somebody else, I'm not sure which number would be higher. I can say the number of days I've transferred or bottled has been more solo. Regardless, when people ask about my preferred way to brew or package beer, the answer easily is "I prefer to brew with others."

Sure, a solo brew day allows for the ultimate in control, focus, and go-at-your-own-pace, but my learning, third-eye view, and new ways of looking at things expand exponentially when I'm partner- or team-brewing. The big-picture benefits make me a better brewer just by the sheer fact that others are present, ask questions, point out how they do things, and share tips and insights.





CHAOS

The Chicago Homebrew Alchemists of Suds (CHAOS) is a coalition of homebrewers, beer aficionados, and enthusiasts in the Chicago, Ill., area that strives to cultivate appreciation of the science and culture of beer through education, exploration, and community. As a club, CHAOS is unique in that it also offers a permanent space that allows members the ability to hone their craft in a community setting.

The brew house is set up so that the only items members must provide for themselves are a fermenter and ingredients. Everything else includes a temperature-controlled fermentation room, filtered water, kettles, mash tuns, industrial-style sinks, a grain mill, and more. The brew house provides the space to brew and also the opportunity to share techniques, socialize, and learn from one another. The brew house also hosts seasonal events where club members can share their homebrews.

Source: chaosbrewclub.net

CHAOS HOMEBREW CLUB

Nowhere was team homebrewing more on display than in January, when I traveled to Chicago to speak at CiderCon, the American Cider Association's annual conference. A major bonus of the trip was being invited to brew with Jim Vondracek and the CHAOS (Chicago Homebrew Alchemists of Suds) Homebrew Club. About eight club members and I spent a Wednesday afternoon in the club's shared space, where they house collective equipment and brew together. Most of them had taken the day off to share their brew day. What a valued gift.

We brewed a Mexican lager, a barley-wine, and a Belgian dark strong ale. We also assisted with several batches-in-process: back-sweetening a chile beer, carbonating a finished sour, and assessing whether a barrel-aged stout was ready to keg. It was a blast during which I could observe three different brewing approaches at once: a three-vessel system with pump, an all-in-one electric system, and an old-school, gravity-fed boil kettle and mash tun. CHAOS members share a 2,000-square-foot community brewhouse in Chicago and manage to keep membership dues reasonable. Pretty flipping cool.



Instagramming the brew day with CHAOS.



FISHBOWL BREWING COLLECTIVE

In December 2022, during the American Homebrewers Association's Capitol Hill Staff Homebrew Competition (where the AHA hosts and judges a competition for any hill staffer with a .gov email address), I visited Fishbowl Brewing Collective. AHA members Andy Oetman and Chris O'Brien use Chriss's detached garage as a shared homebrewing space with shared equipment and a bar. My colleague Marc Preo and I visited on a cold winter night when Andy was only too happy to give us a tour of the area and allow us to sample some of the club's beers. Using a garage as a shared brew space makes so much sense, and once I toured it, I fully understood why.



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immaculatefermentation Join me on a tour of a one-of-a-kind co-op homebrewery in Chicago. Way to go @chaosbrewclub. Today we brew in prep for National Homebrew Competition (entry until Feb 12), beer to be served at Homebrew Con in San Diego in June, and...other 2023 events. Cheers. #homebrewing

4w

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FEBRUARY 1

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Post



Julia in San Diego brewing the 2022 Learn to Homebrew Day recipe.

SHARED MAKER SPACES ARE EVERYWHERE

The notion of a shared artists' "maker spaces," or collectives with group equipment and resources, is nothing new. Think woodworking sheds, gardening groups, artists' studios, and more. In many ways, brew-on-premises breweries and some homebrew shops,

where legally allowed, are prime examples of shared brewing spaces.

Take Citizen Brewing in San Diego, owned by Judd McGhee (also an AHA member!). Citizen is a licensed brewery that sells beer, so yes, very different than

Search the American Homebrewers Association's (AHA) worldwide database of over 2,200 AHA-registered homebrew clubs.

HOMEBREW CLUBS

In our fall 2022 survey of AHA members, 48 percent of respondents said they were members of a local or online homebrew club. The AHA proudly supports 2,000 homebrew clubs—see the world's largest database of clubs on HomebrewersAssociation.org.

I encourage you to work brewing with others into your regular practice of homebrewing. Of course, brew where you are most comfortable, and if brewing solo is your jam, then more power to ya. If you're open to more than homebrew clubs, seek out your local homebrew shop and brew-on-premises brewery. On the flip side, inviting others to your home to brew, bottle, or keg can often make for the best of brew days.

QUAFF

QUAFF Homebrew Club is a group of men and women dedicated to the enjoyment and promotion of homebrewing and beer evaluation in the greater San Diego area. We share knowledge, methods, new brewpub and microbrewery discoveries, and good homebrew at monthly meetings and special events.

CHAOS and Fishbowl, but homebrew clubs sometimes use the space to brew. In November 2022, Judd allowed Joaquin Quiroz of QUAFF to organize a brew day to make two versions of the AHA's Hoppy Amber Ale in honor of our annual homebrew holiday, Learn to Homebrew Day. We made a 1-gallon hot-plate brew and a 13-gallon version in parallel. The vibe during the brew was one of collaboration, fun, and mutual learning.



HOMEBREW CON: JUNE 22–24 IN SAN DIEGO

Speaking of team, partner, and community, I sure hope you have Homebrew Con on your radar. The sooner you register, the more you save. We are in San Diego this year, and WOW, it will be off the charts. The theme is fermentation vacation. Expect to walk away having attended the most prolific, educational, fun, and exclusive AHA gathering ever, with homebrew and breweries galore. Pro tip: Take a big suitcase. You'll need it for all the fresh beer and giveaways you'll bring home. Here's a preview of what to expect.

- 2023 marks Homebrew Con's 45th year and includes educational sessions, meet-and-greet gatherings, workshops, a Homebrew Expo showcasing the world's leading suppliers and homebrew retailers, daily Social Club to ensure you never go thirsty, outdoor events, and exclusive off-site outings, too.
- Homebrew Con attracts amateur and pro brewers, as well as the world's leading beer educators. We welcome homebrewers of all levels and emphasize education, with topics from beginner to advanced. And we embrace fermentation arts beyond just brewing beer.
- We also judge the Final Round of the National Homebrew Competition (NHC) in concert with Beer Judge Certification Program leadership. Attendees get to sample NHC entries during the Knockout Party on June 24.

• New for 2023 will be a Homebrew Club Officer Boot Camp (Wednesday night and exclusive to club officers) plus a Homebrew Industry Coalition meeting bringing together marketplace leaders to discuss the state of homebrewing and how we can collectively grow the hobby. Sound great? Register today at HomebrewCon.org.

Since 1978, as the national organization on behalf of homebrewing, we welcome this annual chance to gather a global group of fermentation explorers, including you. Here is to connecting, protecting homebrewers, brewing together (sometimes at least), and learning from each other. Hope to see you there.

Cheers, Julia

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

NEW
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HomebrewersAssociation.org/zymurgy-live

Catch episodes in real time or watch the recordings at your convenience.



Your Feedback

Dear Zymurgy,

I have been an AHA member for a long time, and I always enjoy the magazine. The recent article on INCOGNITO hops was spot on (Mar/Apr 2023). When I used INCOGNITO recently, I was a little nervous about the oil pooling on top of my batch, and now I know why. Regardless, the hop character in my beer was amazing, and I will be using this again.

One mistake I made that Dr. Bockisch was probably too wise to make was tasting INCOGNITO. I tried a very small dab, and my palate was completely wrecked for an hour. It was just too much. Great in beer, super overwhelming on the tongue. I won't be doing that again.

Thanks for all of the knowledge over the years!

Michael Burdick
Burlington, Vt.

Zymurgy editor-in-chief Dave Carpenter responds: This is absolutely something I would do and go on to regret. Thank you for the warning, Michael. →



Dear Zymurgy,

I really appreciated Dan Jablow's overview of small-batch brewing (Jan/Feb 2023). I started out almost 12 years ago brewing 1-gallon all-grain batches. Like Dan and most brewers, I moved on to larger batches, but I still keep the gear around for 1-gallon quickies or experiments.

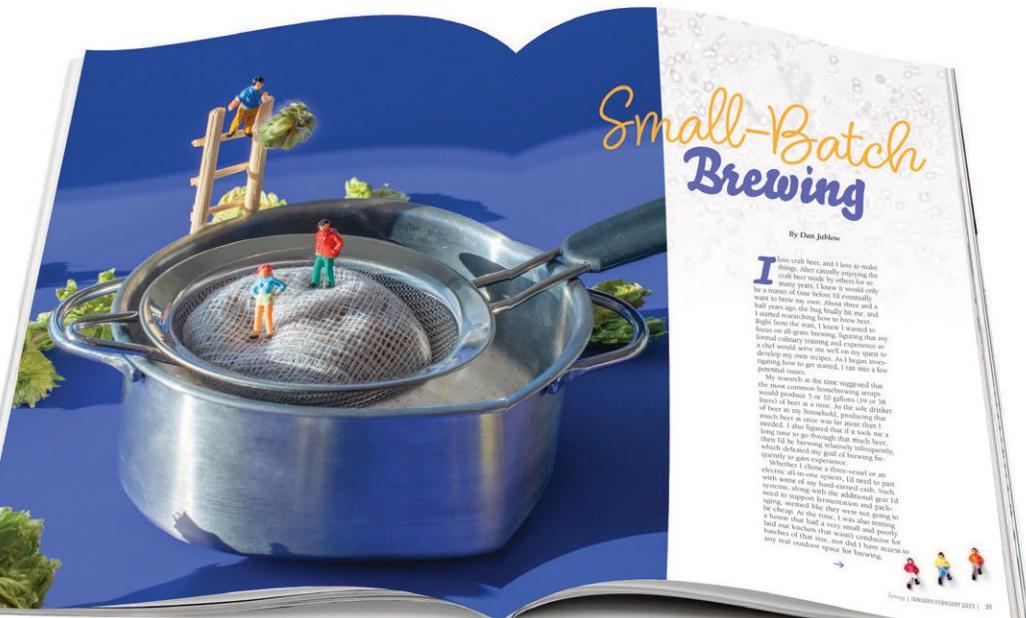
One book I'd highly recommend to any newcomers to brewing is *Beer Craft* by William Bostwick and Jessi Rymill. It is well written and wonderfully illustrated and makes brewing fun and approachable. It's no longer in print, but used copies are easy to find online. It makes a great reference for experienced brewers or as a gift for friends who have an interest in brewing but need a little push to take the first step.

Mark Robinson
Louisville, Ky.

Dear Zymurgy,

"Waste Not" (Jan/Feb 2023) provided a great perspective on the big picture of how homebrewing can reduce one's environmental impact. My industrious wife doubled down and was thrilled with the results of her miso made from my 2022 Learn to Homebrew Day spent porter grains.

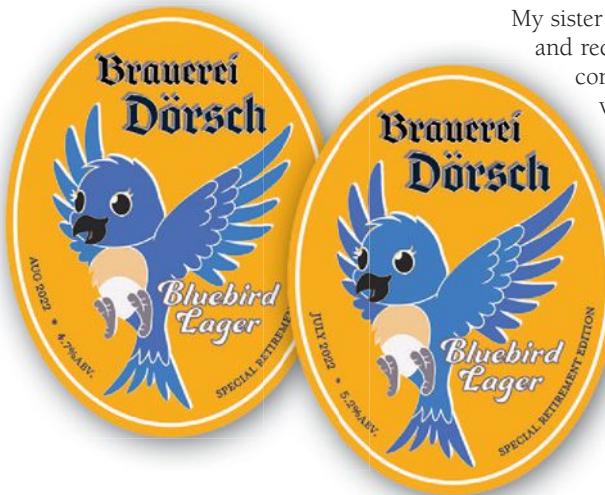
Dave Dwyer
River Forest, Ill.



DEAR ZYMURGY

Send your Dear Zymurgy letters to zymurgy@brewersassociation.org. Letters may be edited for length and/or clarity.

YOUR HOMEBREW LABELS



My sister gave me six months' notice that she was hosting a retirement party in September and requested that I provide the brew. I enthusiastically agreed. Due to my own capacity constraints and travel obligations, I brewed two 5-gallon batches within a couple weeks of each other. The batches were similar but not identical, so I wanted to distinguish the bottles subtly. Perceptive readers will note the two blue shades in the bluebird are reversed across the two labels.

My daughter did most of the design work, improving upon my crude sketches and incorporating the elements I specified. The bluebird has some humorous symbolism for my family. The beer was a Kölsch-style ale based upon the Palmer Premium Beer Kit for JZ Früh Kölsch. Each batch used Fermentis SafLager W-34/70. The key difference between batches was the water used. The July batch used carbon-filtered tap water in Carmichael, Ca. The August batch used store-bought purified water.

Both batches tasted great. The first batch had a better head, but the second batch was a bit clearer. The party was a great success.
(Homebrewer 3 years, AHA member 1 year)

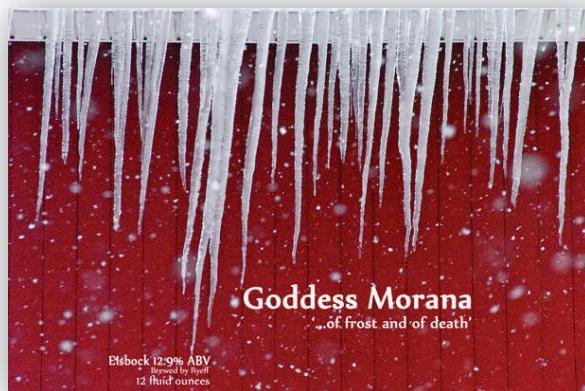
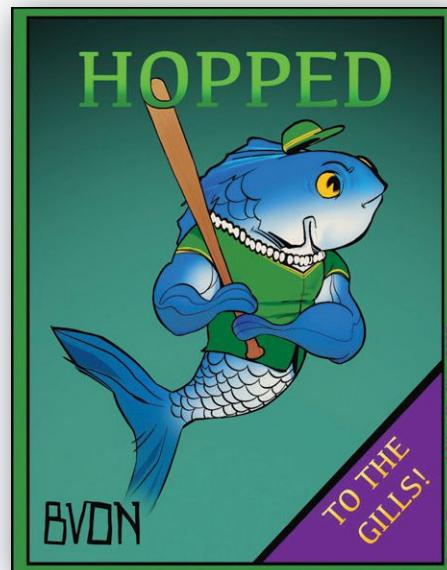
Todd Doersch, Chicago, Ill.

Hopped to the Gills is the sixth beer brewed for the podcast *Brews, Views and Other Nerdities* (BVON). It is an IPA quadry-hopped with Citra. We drew inspiration for the label from the Bash Brothers from the late '80s and early '90s baseball era.

Cheers!

(Homebrewer 1 year, AHA member 1 year)

Leonard Martinez
Monterey Park, Calif.



I try to produce a new eisbock annually. After coming across a photo that I had taken a couple decades ago, I thought that it would be the perfect image for a label. The name was derived from Morana, the Slavic goddess of winter and death. (Homebrewer 6 years, AHA member 3 years)

Jim Riffe
Carmichael, Calif.



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 and we will take it into consideration!

SCAN ME



YOUR HOMEBREW EXPERIENCE

Homebrewing is all about sharing, and we get hoppy when Zymurgy readers share their homebrewing and fermentation experiences with us. We'd love to show the AHA community what your experience looks like. From 1-gallon batches on the stovetop to 20-gallon brew days on your custom sculpture, we all have fun with family, friends and pets while we make and enjoy our favorite beverage. Show us your 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**



Jester the cat oversees brew day.

William Wible
(Homebrewer 25 years, AHA member 8 years)
BUZZ
Oxford, Pa.



My system and brew buddy.

Bob Kapusinski
(Homebrewer 35 years, AHA member 30 years)
Texas Carboys
Austin, Texas

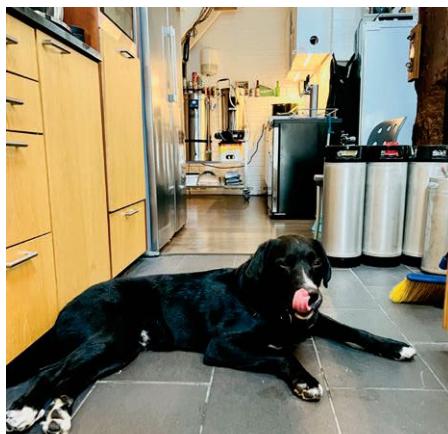


Tuzi and Fergus reporting for brew day duty, sir!

Chris Levesque
(Homebrewer 9 years, AHA member 8 years)
Olde Town Mash Paddlers
Lakewood, Colo.



Brew session for Yakima Valley Hops' Hi, How Are You?
Campaign for suicide prevention and mental health awareness.
Jordan Vaughn
(Homebrewer 2 years, AHA member 2 years)
Sonora, Calif.



Brew dog Otis and the hop garden.
Gerard Spin
(Homebrewer 1 year, AHA member 1 year)
Gieterveen, The Netherlands



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 looks like. Upload photos of your homebrew related fun at HomebrewersAssociation.org/your-homebrew-experience and you may see it in the pages of Zymurgy!

SCAN ME





Greg Fitzgerald and Abel Pina have been friends for more than seven years and fans of craft beer for a lot longer. They created Atomic Hops Brewing and began homebrewing in Las Vegas, Nev., in 2021. Their aggressively hopped and barrel-aged beers pay homage to Las Vegas's role in ushering in the atomic age.

Greg Fitzgerald (AHA member 2 years)

Southern Nevada Ale Fermenters Union (SNAFU), Las Vegas, Nev.



Our brewing partners.

John Dougherty

(Homebrewer 10 years, AHA member 6 years)

Cincinnati, Ohio



SoCal garage brewery ... 5 gallon, batches nothing too fancy.

Todd Beckett (Homebrewer 1 year), Simi Valley, Calif.



I snapped my trekking pole on a mountain last year, but I found a much better use for them.

Mike Washburn (Homebrewer 7 years, AHA member 3 years)

North Country Homebrew Club, Bethlehem, N.H.



This is Jasper and Abby, my rescue Malamute and Husky. They're both wonderful brewing assistants who keep a watchful eye on the spent grains that will become dog biscuits the next day. Adopt a brew assistant of your own and make brew day even more fun!

James Werner (Homebrewer 18 years)

Beer Barons of Milwaukee, New Berlin, Wis.

CHEERS TO THE NEW CROP YEAR!

The 2023 barley season has officially begun, as our growers have started seeding and planting their fields.

We're proud to source our barley from independent farmers across the Pacific Northwest. Our quality malts rely on the region's unique blend of rich soil, arid land and mountain-fresh water, along with the hard work and dedication of our incredible growers.

We're looking forward to another successful barley harvest to supply North American brewers and distillers with a new crop year of locally sourced and produced malt products!



Follow us on Instagram for the latest crop updates! [@greatwesternmalt](https://www.instagram.com/greatwesternmalt)

Find Great Western Malting products at your local homebrew store.

BOKASHI GRAINS



By Amahl Turczyn

This installment of You Can Ferment That! is a slight departure—*bokashi* is not a fermented food product, but rather a method of fermenting compost. With spring in the air, there's no better time to start composting food, your brewery waste, and food scraps. The ancient Japanese technique of *bokashi* diverts all kinds of organic waste from the landfill and into fertile soil for gardens, yards, or potted plants. It's not only hailed for its space savings, but also for its adaptability to a wide variety of waste—many things that are not allowed in traditional aerobic compost bins work fine with anaerobic *bokashi* composting. It's also

much better smelling than aerobic composting. There is still an odor, but it's tart and lactic rather than downright rotten.

Food items are packed tightly into a bin with a lid at the top and drainage holes at the bottom, and a compost accelerant known as *bokashi bran* or *bokashi grain* is added with each new addition of food scraps. The grains are loaded with lactic acid bacteria (LAB) and other “effective microorganisms” (EM) to kickstart the fermentation process, lower pH quickly, and keep odors and pests at bay. The result is an acidic “leachate” that emerges from the bottom of the bin, which can be diluted and used as plant food. Within a matter of weeks, depending upon ambient tem-

peratures and the type of food scraps in the bin, the compost is greatly reduced in volume and moisture content, and breaks down enough that it can either be composted with another method, or buried in the yard to become food for worms and, eventually, fertile soil for plants.

One can purchase dedicated *bokashi* composters online, as well as the grains—for all its benefits, though, this can get expensive, since you need a continual supply of the grains to keep the process going. For enterprising homebrewers, there are ways of mitigating the running costs, though: making your own *bokashi* composter, for example, and producing your own *bokashi* grains.

Still have that Charlie Papazian Zap-Pap lauter tun kicking around? It makes a perfect composter. An old, lidded bucket with holes drilled in the bottom works as well. Brew all-grain beers at home? Spent grains are a perfect source of bran for making bokashi grains, if you know how to inoculate them with EM and then dry them for storage. Even if you're not going to launch into your own home bokashi composting regime, or you don't have the time or space to garden, there are still perks to making your own LAB-infused grains.

WHY FERMENT YOUR SPENT GRAINS?

For one thing, to reiterate: they don't stink. I'm sure you've smelled rotting spent grains—they are a prime source for all manner of bacteria and mold, and after a hot summer brew day, they become septic and smelly very quickly. If inoculated and fermented properly, LAB-infused spent grains smell tart and bready, like sourdough starter. (This is no surprise, since a great source of EM comes from the sourdough culture in your fridge that you use for baking bread. If you don't have a culture going currently, you can have one up and running fairly quickly—see You Can Ferment That! in the May/June 2020 issue of *Zymurgy*.)

For another thing, if you are a regular and prolific brewer, or even a small-scale professional nano- or microbrewer, converting your spent grains to bokashi bran can be a lucrative endeavor. With just a bit of extra work and space, you can produce a dried, LAB-infused product gardeners and farmers will pay good money for, all while keeping it out of the landfill (and cows), thus reducing greenhouse gas production. Even if you can't sell it outright, it can make for a great partnership between your brewery operation and the local food co-op or community garden. With so many breweries churning out great beer these days,

brewery solid waste disposal has become an issue, and many have turned to bokashi as a solution.

OTHER EFFECTIVE MICROORGANISMS

While LAB is the workhorse behind bokashi composting, it's not always the only EM involved. Yeast usually accompanies the LAB, and any strains that are present in your sourdough culture, wild or domesticated, work just fine as bokashi EM.

Purple non-sulfurous bacteria (PNSB) is a family of highly adaptable microorganisms known to produce compounds that are nutritious for plants, and they will happily flourish in the anaerobic composting bin. Their presence isn't strictly necessary, but they do have the nifty ability to metabolize ammonia and hydrogen sulfide, so in addition to quickly converting your compost into plant food, they also cut down on odor. However, you will have to find a separate source for them if you want to add their beneficial presence to your soured spent-grain bran—they don't typically live in sourdough starters.

Companies can be found online that produce a concentrated liquid that includes PNSB, but it is often expensive. The good news is even a small bottle lasts a long time, and under the right conditions you can use this concentrate as a seed culture when you make bokashi bran. PNSB thrives within a wide range of pHs and temperatures, and it grows in the presence of light and in darkness. It really is a jack of all trades.

Because you are trying to encourage yeast and bacteria, it's good to add a food source to your bokashi bran. There already is some sugar in spent grain, so adding more isn't strictly necessary, but a bit of molasses or sugar mixed in with your spent brewery grains and sourdough seed culture will kickstart EM growth on the barley and help it act faster when introduced to food waste in the compost bin.

Finally, you can add a third class of EM: mold. While white mold growth on the bokashi grains towards the end of fermentation is a good sign (green, blue and black molds mean you should dump the batch and start over), *Aspergillus oryzae*, or koji—the same beneficial mold used to ferment sake, miso, and several other food products—will also grow on your spent grain. Koji is especially useful as a bokashi EM addition if your food scraps contain a lot of starch, as the amylase will make quick work of pasta, bread, rice, or other grains. (Technically, you can grow pure-culture koji mold on sterilized spent grains in an incubator with the correct time, temperature, and humidity and then use those grains to make sake, but that's a fairly elaborate process that's better left for another ferment.) If you want to just add koji to your bokashi cocktail of EM, which will include lots of LAB if you're pulling wet spent grain directly from the mash tun, simply sprinkle some koji-kin spores on the grains along with your other seed cultures.

PUTTING IT ALL TOGETHER

The basic procedure is to wait until after you've sparged an all-grain batch of beer, and then have your seed cultures ready to inoculate the spent grain. Your "fermenter" can be a specialized bokashi bin or, as mentioned, a brewing bucket with small holes drilled in the bottom for drainage. You will also need a clean trough or tray to mix up the batch. Once your spent grains have drained, spread them out in the mixing vessel. You don't want them soaking wet, so the more liquid you can press out, the better.

Once the average temperature of your moist grains is at about 100°F (38°C), you can begin mixing in the sourdough culture, PNSB culture (if using), koji-kin (if using) and sugar solution (if using). Using your bare hands for this is fine. Shoot for at least

Active sourdough starter.



Fermenting bokashi bran.



Drying bokashi bran outdoors.



Spent-Grain Bokashi Bran

Batch volume:
1 gallon (4 L) of bran

INGREDIENTS

- 1 gallon (4 L) moist [not wet!] spent grain, about 100°F (38°C)
- 1/4 cup (60 mL) active sourdough starter
- 1 tsp. (5 mL) purple non-sulfurous bacteria (PNSB) culture, optional
- 1 tsp. (5 mL) molasses, optional
- 1/4 tsp. (1 1/4 mL) koji-kin spores, optional
- 3 oz. (85 g) seed miso from a previous batch, optional

EQUIPMENT

- Bokashi bucket with lid [or DIY equivalent]
- Tray to set bucket in to catch seepage
- Large fine-mesh bag to keep out insects, optional
- Mixing trough for inoculating the grains
- Sheet pans or screens for drying the grains
- Food dehydrator for drying the grains, optional
- Airtight 1-gallon container for storing the dried bran

METHOD

Cool spent grains to about 100°F (38°C) and thoroughly mix in active sourdough starter and other EM cultures, if using. Pack inoculated grains tightly into bokashi bin or lidded bucket and cover tightly. Place vessel in tray and keep it warm for 3 weeks to 2 months. When grain has fermented completely (white mold on the surface is OK) and has a pleasant sourdough aroma, transfer to shallow pans or screens set out in full sun to dry, or use a dehydrator. When completely dry and crumbly, store in an airtight container. Your bokashi bin can now begin accepting food waste donations—just sprinkle each addition liberally with the bran, pack the scraps down as much as possible, and when the bin is full, transfer compost to secondary compost bin, or bury in soil for remaining decomposition.

1/4 cup (60 mL) active starter and about a teaspoon (5 mL) of the other EM cultures, per packed gallon (4 liters) of spent grains. Once mixed thoroughly, press the inoculated grains into your fermentation vessel and cover tightly.

As with any lacto fermentation, the less oxygen present, the better. You could probably bleed a layer of CO₂ or nitrogen over the grains, but to be honest, it's not going to prevent air ingress for very long. Just compress the grain as much as possible, place the bucket in a tray to collect the leachate that will seep out, and cover the bucket tightly. The sealed vessel can then be set out in the sun to stay warm, or you can keep it in a hot shed or garage. There will be a tart, sourdough aroma that will intensify as LAB and other EM take hold; although not unpleasant, it may not be something you want indoors.

Optimally, you want to maintain 90° to 110°F (32° to 43°C) for two to three weeks, so it's great to do this during the warm summer months, but it turns out that the process is pretty forgiving. You can ferment in the colder winter months as well, but it will obviously take longer. One advantage to winter grain ferments, depending upon where you live, is fewer insects. Fruit flies are going to be itching to get into that grain and do their thing, so tying a fine mesh bag around the whole vessel may be necessary to keep them out.

After a couple of weeks, open the fermenter and inspect the grains. With ideal levels of warmth, you should see fine, white mold on the top, and the grain should have a tart, bready, lactic smell. A bit of a white-glue aroma is OK, too, but you don't want rotten grain aromas or, as mentioned, black, green, or blue mold. Dig down into the grain bed to check that the sourdough smell, grain color, and grain texture are consistent throughout the batch. If so, you can proceed to the next step—

Drying bokashi bran indoors.



drying the grains. What you don't want is to find dark, rotten, or moldy patches in the grain. If you've mixed in the cultures thoroughly, this should not be an issue.

DRYING BOKASHI GRAIN

If you are doing a small batch, say a gallon or so, you can use a food dehydrator to dry your bokashi grains. This is preferable, because you should be able to control the temperature; about 120°F (49°C) is the maximum you should use to dry the grains. You'll also be able to dry relatively quickly and avoid insect or other pest incursions.

If you live in a relatively arid climate, you may want to use a more passive approach to drying—spreading the grain out about an inch thick in shallow pans or on screens works great if you have an area that gets full sun most of the day. Yes, you'll get flies, birds, and perhaps squirrels looking for a free meal, but this is for compost anyway. Turn the grains once a day for a few days, breaking up any lumps so that everything dries thoroughly. When completely desiccated, simply seal up the grains in an airtight container and keep it on hand near your compost.

Most animals have no interest in bokashi grains, but if you have raccoons in your area, you might want to keep your dried grains indoors—for some reason, raccoons seem to find the idea of eating dry, sour grain appealing and will make a huge mess if they can get into it.

Every time you add food scraps, paper, egg shells, or whatever to your anaerobic compost bin, sprinkle the waste liberally with your homemade bokashi grains, and very soon they will lose water weight and break down into a low-odor, acidic compost.

Note that bokashi works with just about any waste. With aerobic compost bins, any fats, meat, bones, and oils aren't really allowed. If you do worm composting, sometimes called vermiculture, allowed waste is even more restrictive, as worms

Finished bokashi bran in raccoon-proof container.



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AND CASKS

SafBrew™ BR-8 is the first *Brettanomyces* yeast available to brewers in a dry microgranular format. It offers all the flavor benefits of "wild" Brett yeast, but with more control and reliability, eliminating the risk of over-carbonation and gushing after bottling. Selected specifically for secondary fermentation in bottles or casks, SafBrew™ BR-8 produces phenolic compounds that create a distinctive finishing touch which evolves over time as the beer is aged, with funkier notes (barnyard, horse, leather...) nicely balanced by refreshing, fruity notes.



 **Fermentis**
by Lesaffre

The worm compost bin.



generally don't like citrus peels, starches, and alliums (onions) in addition to the waste mentioned above. Fruit is discouraged, just because it invites fruit flies. Worms do like paper, cardboard, dryer lint, and egg shells. All of these are fine for bokashi, however. Some people even add pet waste to their bokashi, but this is not recommended if the resulting soil will be used to fertilize edible plants, fruit trees, vegetables, etc., because of the possibility of disease transmission.

When your bin is full, you can either transfer the stuff to an aerobic composter along with leaves and lawnmower clippings, or you can introduce it to your worm bin for further breakdown. The worms don't seem to mind the low pH, and they do a good job breaking down what's left of the bokashi waste into usable castings that can then be directly dug into your soil. A third option would be to bury the stuff in a corner of the yard and let worms and other organisms in your soil finish the process. Either way, you'll be setting up your lawn, houseplants or garden with fertile, top-quality soil, and finding a clean, eco-friendly way to dispose of brewery waste.

Amahl Turczyn is associate editor of Zymurgy.



Worm composting, red wigglers.



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MAY 6, 2023

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CONNECTING YOUR CRAFT FROM GRAIN TO GLASS

An update from the Canadian barley fields

“ As we enter spring, barley growers are prepping and planting their fields for the 2023 crop year. There has been mixed weather across Canada so maintaining a good balance of moisture throughout the growing season will be crucial for healthy soil and disease resistance, as we continue to recover from the 2021 drought.

New barley varieties are looking good for this upcoming year, as they've shown positive yields in the fields. Producers are excited about the opportunity to grow these varieties for Canada Malting Co. ”

Ryan Dodd, Director of Grain
Canada Malting Co.



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Your Acid Is Still Good

A Brief Experiment to Test the
Efficacy of Aged Lactic Acid

By Kurt Elia

A while ago, we moved to a house that has well water, which has required me to learn more than I ever wanted to know about water treatment systems. It also put my brewing water chemistry knowledge to the test. After several batches, countless residual alkalinity calculations, and a bit of trial and error (er, “empirical research”), I felt like I had things dialed in pretty well. Then, a few weeks ago, I brewed for the first time in months and missed my mash pH target. →

While I figured it was most likely something to do with the inherent variability of well water chemistry, it also got me wondering if that 20-year-old bottle of lactic acid I was using was starting to lose its potency. Can it even lose its potency? Googling didn't provide me with the answer, so I decided to do a little experiment. The results of this experiment were enlightening and surprisingly consistent. So I thought I would share them with my fellow zymurgists.

METHOD

I filled two plastic bowls with 1 gallon each of tap water, which is well water fully treated by my water softener and filtration system. I then titrated an 88% lactic acid solution into each one, taking pH measurements with my Milwaukee MW102 Pro+ pH/temperature meter along the way. In one bowl, I used my old bottle of lactic acid (yes, it really was 20 years old—before my move to well water, I had hardly needed to use it at all). In the other bowl, I used a fresh bottle of lactic acid. In total, I added 1 milliliter of lactic acid to each bowl in 0.1-milliliter increments.

RESULTS

As you can see from Table 1, the pH drop in each bowl was virtually identical at each step along the way, and in total. Why the difference between the two bowls? Perhaps one had a touch of detergent residue left

in it or something. Also, the temperature of the water in each was about 1°C (1.8°F) different. Who knows? What matters is the effect the acid had on dropping the pH from its starting point.

When I had completed this experiment, I decided to do one bonus round. You see, I don't actually brew with the water that has been through my water softener, as that process removes calcium and magnesium (which I want in my brewing water) and exchanges those ions for sodium (which I don't want in my brewing water). So for brewing, I have a separate water treatment loop that uses unsoftened, filtered water. Might this make a difference in lactic acid's ability to reduce the pH? I decided to find out. And the results were startling.

While my unsoftened, filtered well water apparently started 0.2 pH lower than my softened well water, adding 1 mL per gallon of 88% lactic acid solution had an identical effect: a pH drop of 0.61 (See Table 2).

CONCLUSIONS

So, what were my main takeaways from this little experiment? First, I showed empirically that lactic acid solution does not lose its potency over time. My old acid definitely smells a bit different than the new batch (more vinegary, less sweet), but its ability to reduce the pH of my brewing liquor remains unchanged.

Second, I realized that the accuracy of my pH meter is as good as the ±0.02 that



the manufacturer promises. If it weren't, then it would be unlikely that the three different samples I treated would have yielded a pH difference within 0.01 of one other.

Finally, I learned that, for reasons I don't fully understand, my unsoftened brewing water has a slightly lower pH than my softened tap water. But the differences in my two well water treatment regimens do not change the ability of lactic acid to reduce the pH of each type of water.

Your results will certainly vary, as myriad factors affect water chemistry. Nevertheless, I hope sharing the results of this experiment will help inform your own brewing water adjustment adventures!

Kurt Elia is a former professional brewer and graduate of the American Brewers Guild. Today he enjoys brewing for friends and family on the over-engineered 10-gallon brewing system in his garage in North Carolina.



Illustration © Getty/Yelisei Turkin; Photos courtesy of Kurt Elia

TABLE 1: EFFECT ON pH OF ADDING FRESH AND AGED LACTIC ACID TO TAP WATER.

pH reading	Acid added
20-year-old lactic acid	Fresh lactic acid
6.63	6.65
6.59	0.0 mL
6.53	0.1 mL
6.47	0.2 mL
6.42	0.3 mL
6.37	0.4 mL
6.31	0.5 mL
6.25	0.6 mL
6.20	0.7 mL
6.13	0.8 mL
6.03	0.9 mL
Total pH change: 0.60	1.0 mL
	Total pH change: 0.61

TABLE 2: pH CHANGE FROM ACIDIFYING UNSOFTENED, FILTERED WATER.

pH reading	Acid added
6.45	0.0 mL
5.84	1.0 mL
Total pH change: 0.61	

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Czech Amber Lager

BREWING POLOTMAVÝ AT HOME

By Ryan Pachmayer

Polotmavý means half-dark, and, simply speaking, the style is just that: amber-colored beer. But when you start to look at the ingredients and techniques used in these beers, along with tasting what some leading producers are doing, a sense of the style begins to emerge. Still, a homebrewer brewing polotmavý has many paths open to them. Let's dive into some of the directions available.

WHERE TRADITION MEANS INNOVATION

"You have to have a traditional lager, even in a modern brewery," says Lenka Straková, head brewer of Pivovar Proud in Pilsen. Straková is referring to what customers in the Czech Republic expect, even with a wave of new school breweries making everything from witbier to dry stout, and every variation of IPA.

Proud, located in the back of the sprawling Pilsner Urquell property in Pilsen, bills itself as an experimental brewery. The brewery came to life during the pandemic in a striking old building that used to be a power station. →

Straková says that if the Czech lager is good, the customer is willing to try the more experimental beers from the brewery. This places a real importance on having a traditional, familiar, Czech-tasting beer, and a high quality interpretation at that. Luckily for Proud, Straková has extensive experience, both with her brewing education in Prague, and also in brewing Pilsner Urquell for years. She now leads a small team of brewers at Proud, making everything from

rye pale ales to barrel aged beers and beers with cardamom and plums. And, of course, traditional Czech beer.

Despite having an array of non-traditional (as far as Czech beer goes) options in its lineup, Proud's number-one seller is its *světlý ležák*, or pale lager, a beer that makes up a little under half of its local distribution.

But it's late autumn and we're sipping a darker lager at Proud, one that perhaps straddles the line between polotmavý and

tmavý (dark). "It's on the border," says Straková. "There is not a strict rule," she says, referring to there being no exact number when it comes to color. To my tastes, it's a rich polotmavý, without any hint of roast, a smooth beer with a pronounced hop character, but the malts to back it up. It is dark in color, but more of a dark amber. A delicious beer, to be sure, whatever the customer wants to call it.

While polotmavý is not your typical Czech beer, it uses Czech ingredients and has flavors familiar to Czech drinkers. "Czech beer culture is like sitting in a pub, having six, seven beers," says Michal Škoda, brewery director at Proud. "You can't drink six, seven IPAs, or heavy beers. If you just want to drink simple beer with your friends, they are expecting lagers."

Brew
This!



Effantin's Czech Amber Lager

Polotmavý

Recipe by Effantin Arnaud.

This Czech Amber comes from homebrewer Effantin Arnaud. Arnaud, originally from France, has been living in the Czech Republic for about twenty years and homebrewing for over a dozen. He is a BJCP Certified judge. Janek Kotecký, head brewer of Cafe Latka in Prague, calls this beer "simple, but layered" and the best example of the style that he's ever tasted. Arnaud made this beer as an homage to Bernard Jantarový Ležák 12°. Arnaud calls Bernard a brewery that is "big enough to be available in many markets, but small enough to brew great beer." Arnaud notes that he would decoct this beer, as is Czech tradition, but his homebrewing equipment (BIAB) makes doing so more challenging.

Batch volume: 22 L [5.8 US gal.]

Original gravity: 1.054 [13.2°P]

Final gravity: 1.013 [3.3°P]

Brewhouse

efficiency: 77%

Bitterness:

30 IBU

Color:

21 EBC/10.6 SRM

Alcohol:

5.4% by volume

MALTS

2.7 kg	[5.95 lb.] Weyermann Pilsner, 3.3 EBC
1.6 kg	[3.53 lb.] Weyermann Vienna Malt, 5.9 EBC
350 g	[0.77 lb.] Weyermann Munich II, 22 EBC

125 g	[0.28 lb.] Weyermann Caramunich II, 120 EBC
70 g	[0.15 lb.] Weyermann Chocolate Wheat, 900 EBC

HOPS

25 g	[0.88 oz.] Saaz, 3.97% a.a., first wort hop
------	---

35 g	[1.23 oz.] Saaz, 3.97% a.a. @ 20 min
30 g	[1.06 oz.] Saaz, 3.97% a.a. @ 5 min

YEAST

2 sachets Fermentis SafLager W-34/70

WATER

Ca 70 ppm, Mg 20 ppm, Na 50 ppm, SO₄ 90 ppm, Cl 120 ppm, HCO₃ 100 ppm

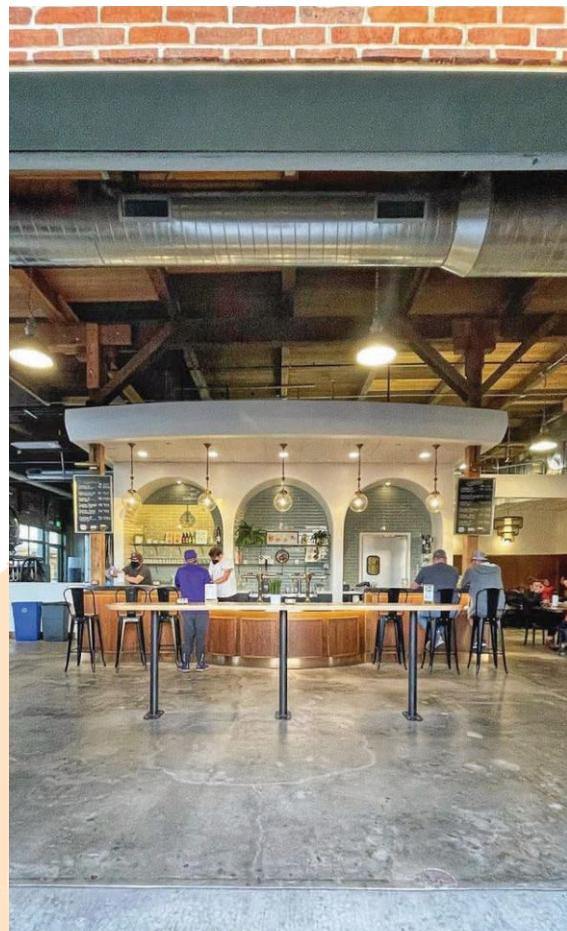
BREWING NOTES

Target a mash pH of 5.3. Dough in with 25 L [6.6 gal.] of water at 53°C (127°F) for 10 min. Using decoctions or direct heat, raise the mash temperature to 63°C (145°F) for 30 min, 72°C (161°F) for 30 min, and 77°C (170°F) for 10 min.

Sparge with 7.65 L [2 gal.] of 77°C (170°F) water and collect runoff. Pre-boil gravity should be 11°P (1.044 SG). Boil 90 minutes, adding hops as indicated.

Pitch yeast at 9°C (48°F). Ferment at 10–11°C (50–52°F) for 10 days. Raise to 16°C (61°F) for 2 days for a diacetyl rest. Transfer to serving keg and lager for 30 days before serving.

Cohesion Brewing in Denver, Colo., specializes in Czech-style lagers.



A SYMBOLIC BEER

Janek Kotecký is the head brewer at Pivovar Lajka in Prague. Kotecký's first thoughts on the style, are in the color, and the local ingredients. "In the same way as Belgian 'bruin' beers, *polotmavý* identifies basically just the color of the beer and can quite substantially vary in profile," he says. "Unsurprisingly, they are somewhat traditional—breweries use Czech ingredients and ferment with their regular yeast."

He believes there is a special thing about *polotmavé* pivo however, that they are the symbol of a new era, a renaissance of small breweries, of entrepreneurship, after such a long period of state-organized production and markets.

Kotecký tells me that he observes the term *polotmavý speciální* being used on versions that start at 14°P. Unsurprisingly, the word bock can also be used for these stronger beers. For the 11°P to 12°P beers, the typical ležák nomenclature is often used, just like with pale lager (světlý ležák). However, unlike světlý ležák, Kotecký notices *polotmavý* ležák being used up through 13°P beers. To perhaps add another layer of complexity to the taxonomy of these beers, the words *granát* (garnet) or *jantar* (amber) are sometimes used as well, but like the word *polotmavý*, they alone do not indicate strength, just color.

EXAMPLES IN THE CZECH REPUBLIC

One way to approach *polotmavý* is the way that two Prague breweries, U Medvídku and Strahov, brew it. They both utilize the style as a sort of flagship, something that looks special, or a little out of the ordinary from the typical pale lager, but still very approachable for a wide audience. In this instance, it makes sense to make a lighter, more drinkable version.

Other breweries, such as Úněticky pivovar just outside of Prague, treat the beer as a special release, labeled *spécial 16*. The beer is more like a Franconian bockbier, a little stronger in alcohol and flavor. Still, there are other interpretations, such as the newer Andělský pivovar, which makes a flavor-forward version that is still quite drinkable, with a generous amount of flavor hops.

AUTHENTICITY IN AMERICA

Eric Larkin opened Denver's Cohesion Brewing in the summer of 2021 with his wife Lisa. Cohesion only makes Czech-style beers. The recipes use custom-kilned undermodified grain from Fort Collins-based Troubadour Maltings and receive at

least one decoction. The beers are hopped with all Czech hops, and they're open fermented before going into horizontal lagering tanks with spunding valves to create natural carbonation.

The beer is then served from Lukr side-pull faucets, with the option of getting one of three different pours: *hladinka*, which is a typical pour, albeit with a generous dollop of foam on top; *šnyt*, which is a pour of

half foam, half beer; and *mlíko*, which is a glass full of soft, drinkable foam. In short, everything about this place is Czech, except its location (for more on Czech-style pours, see Beer School in the Sept/Oct 2020 issue of *Zymurgy*).

Larkin also sees the *polotmavý* as more of a color guideline than a rigid style, and an uncommon one at that. "It's just not a very common style [in the Czech



Neni Spatne Polotmavý

Polotmavý

Recipe by Clinton Lohman

Neni Spatne translates into "not bad" in Czech. Lohman's friend would always say "ain't bad" about things he liked, and the phrase caught on, initially on a Vienna lager. For future international amber lagers, Lohman would name them "ain't bad," or the closest wording that made sense, in the native language. For example, his Mexican amber lager is named "No Esta Mal" which also means "not bad."

Batch volume: 5 US gal. (18.9 L)	Bitterness: 35 IBU
Original gravity: 1.048 (12°P)	Color: 8 SRM
Final gravity: 1.015 (3.8°P)	Alcohol: 4.4% by volume

MALTS
9 lb. (4.08 kg) Weyermann Floor Malted Bohemian Dark malt (99%)
0.1 lb. (45 g) Weyermann Melanoidin malt (1%)

HOPS
1.5 oz. (43 g) Czech Saaz, 4.4% a.a. @ 60 min (25 IBU)
1.5 oz. (43 g) Czech Saaz, 4.4% a.a. @ 5 min (5 IBU)

ADDITIONAL ITEMS
Whirlfloc @ 15 minutes

YEAST
18 million cells/mL Wyeast 2001 Urquell Lager or White Labs WLP800 Pilsner Lager Yeast

WATER
Sulfate to Chloride 2:1 (try to keep both of these as low as possible)

BREWING NOTES
Target a mash pH of 5.35, a pre-boil kettle pH of 5.3–5.5, and a knockout pH of 5.1.
Mash in at 133°F (56°C) with a liquor-to-grist ratio of 2.7:1 and hold for 15 min. Add boiling water to raise temperature to 144°F (62°C) and hold for 75 min. Add boiling water to raise to 158°F (70°C) and hold for 5 min. Vorlauf for 20–30 min or until wort is clear.
Boil 120 min, adding hops as indicated. Whirlpool and then cool wort to 42°F (6°C). Oxygenate to 8–10 ppm and pitch yeast. Ferment at 50°F (10°C) until gravity reaches roughly 8°P (1.032 SG), and then cool by 2–3°F (1–2°C) per day back down to 42°F (6°C). Transfer to conditioning vessel or bung fermentation vessel when gravity reaches 4.8–5.8°P (1.019–1.023 SG). Hold at 42°F (6°C) for 2 weeks and then either drain yeast from the fermenter's cone or rack beer off the yeast before cooling by 2–3°F (1–2°C) per day to 30–32°F (−1–0°C) and holding for 3–6 weeks before serving.

Republic]," he says. "Our 12 and 10 are our most popular beers, and then Tmave is a distant third, and then polotmavý is a distant fourth."

To build his own, Larkin looked to some of his favorite examples of the style from his trips overseas. He estimates that he's spent about five weeks total in the country and he even hired a language teacher, with whom he continues working to this day. "From my experience, this is a sweeter, maltier beer, so I've tended to make exam-

ples in that style," says Larkin. He adds that Czech ingredients and decoction-mashing techniques are important in his view, that you still really need that Czech-malt character in the beer.

THE WISCONSIN WAY

Clint Lohman is the Head Brewer at Working Draft Beer Company in Madison, Wis. Lohman had never actually had an authentic polotmavý when he created the recipe for Working Draft; he was "winging

it," in his words. Still, he had some advantages working for him.

First, the brewery had a popular Czech-style Pilsner on the menu and had experience in using L-78 Original Pils Lager yeast from Brewing Science Institute (BSI) with it. So, Lohman kept things simple: he subbed out the Czech Pils malt from that pale lager and replaced it with Weyermann's Floor-Malted Bohemian Dark, a malt that Weyermann sources and has malted within the Czech Republic. Lohman calls the Bo-Dark "essentially a floor malted Munich-style malt made with Czech barley."

Lohman feels there are some key components to Czech-style lagers that he applied to his polotmavý:

• A firm, but not harsh bitterness:

Lohman adds about 70 percent of the bitterness from an addition of Saaz hops with 60 minutes left in the boil. The rest comes at five minutes left in the boil. Lohman points out that this is an expensive way to add bitterness to your beer, as Saaz is a low alpha acid hop, meaning a lot more is needed to reach the desired level of bitterness, but he really thinks it layers the hop flavor with a pleasant spicy bitterness.



Cohesion Polotmavý

Polotmavý

Recipe by Eric Larkin, Cohesion Brewing.

Larkin's Polotmavý was inspired by the maltier, rounder examples that he found in the Czech Republic, including Úněticky Speciál 16 and Staropramen Granát. Larkin also brews a stronger Polotmavý, a beer he calls Vánoční Speciální Pivo, that comes in around 6.5% ABV and has a "dialed up intensity" as Larkin puts it.

For the malts, Larkin recommends an undermodified base pilsner. If you can't find Colorado's Troubadour, Weyermann Isaria is likely the closest match. Look to local maltsters as well. Larkin has used Sugar Creek from Indiana and Epiphany out of North Carolina. Riverbend, also out of North Carolina, Mecca Grade in Oregon, and Admiral in California are three other options to consider if available.

Batch volume: 5 US gal. (18.9 L)
Original gravity: [1.048] 12°P
Final gravity: [1.013] 3.25°P
Efficiency: 70%

Color: 12 SRM
Bitterness: 28 IBU
Alcohol: 4.6% by volume

MALTS

4.5 lb. (2.04 kg) Munich I: Troubadour Ballad (50%)
 3.5 lb. (1.59 kg) undermodified Pilsner: Troubadour Super Pěvec (37.5%)

19 oz. (540 g) Cara 60L: Troubadour Mid Mod (12.5%)

HOPS

0.35 oz. (10 g) Czech Saaz, 4% a.a., FWH (7 IBU)
 0.75 oz. (21 g) Czech Saaz, 4% a.a. @ 60 min (12 IBU)

0.75 oz. (21 g) Czech Saaz, 4% a.a. @ 30 min (9 IBU)

YEAST

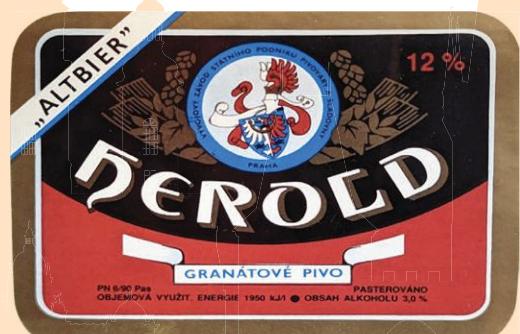
Inland Island INIS-760 Czech Lager (preferred) or any Czech lager yeast

BREWING NOTES

Mash in at 122°F (50°C) and rest 20 min. Pull a roughly 1/3 decoction, heat to 145°F (63°C) and rest 20 min. Bring decoction to a boil and boil 30 min. Stir occasionally while boiling to avoid scorching. Return decoction to main mash to target a rest temperature of 145°F (63°C). Rest mash 20 min at 145°F (63°C). Pull 45% of the mash as a decoction, bring to a boil, and maintain boil for 30 min. Stir decoction occasionally while boiling to avoid scorching. Return decoction to main mash to target a rest temperature of 165°F (74°C). Rest 20 minutes before vorlauf.

Lauter and sparge. Boil 90 minutes, adding hops as indicated. Ferment at 50°F (10°C) for 5 days, raise to 53°F (12°C) for diacetyl rest for 7–8 days, until diacetyl is clear and specific gravity is stable. Spund during diacetyl rest for best results. Lager at 36°F (2°C) for 4–5 weeks.

Granát is Czech for "garnet" or "amber."



- Residual sweetness through diacetyl:** Lohman uses a Czech lager yeast that leaves behind a bit of diacetyl, which he feels adds a nice roundness to the beer that helps balance out the substantial hop character. Working Draft isn't a massive brewery with a large lab, so they don't have the equipment to test the exact amount of diacetyl in each batch. Instead, they rely on sensory, with the goal of settling in a place where a seasoned taster with sensitivity to diacetyl can pick it up, but not be overwhelmed by it, and most people won't really notice it.
- Residual sweetness through malt:** Working Draft doesn't have the ability to perform decoctions, which Lohman says he would definitely do if he could, as he feels it's an important part of Czech brewing tradition. Instead, he adds a very small amount of melanoidin malt, no more than 1 percent he says. He says a little goes a long way, and he uses it to mimic some of the flavors a decoction might add to a beer. Along with the diacetyl, if you reach a slickness, or a cloying sweetness, you've gone too far.
- Malt depth:** Lohman performs two-hour boils on the Czech lagers in his portfolio, which he says creates some additional malt depth that he's missing out on by not being able to perform decoctions.
- Clean fermentation profile:** Lohman typically cools the wort to 40–45°F, then primary ferments the beer at 48–52°F. When the beer is 40 to 60 percent attenuated, he steps it down by 2–3°F per day until it gets down to the original wort temperature. He'll then hold the beer for one to two weeks before performing a diacetyl test to ensure vicinal diketones (VDKs) are at an acceptable level, before step crashing down to 30°F and lagering for another three to eight weeks.
- Natural carbonation:** Lohman bungs all of Working Draft's lagers about 1–2°P (4–8 gravity points) before they reach final gravity to create small, tight bubbles and to trap a little bit of sulfur dioxide in the beer, something he says is an important part of the profile of European-style lager beers.
- Softer water:** Madison, Wis., has very hard water. Lohman treats this with lactic acid to reduce the residual alkalinity to a baseline level and omits any calcium chloride or calcium sulfate additions in the mash for the Czech-style beers. Lactic acid is also used in

the mash and then a little bit more in the whirlpool, to hit the target mash and knockout pH levels.

MAKING YOUR OWN

This style spans a wide range, from lower-alcohol, easier-drinking versions, to higher-alcohol and more flavor-forward interpretations, and everything in between. Light amber to dark amber, hoppy or malty. You'll have to make some decisions on which direction you'll want to go. That said,

I recommend following some key guidelines, the first of which is that Czech ingredients are the norm for all Czech-style beers.

- Weyermann's Floor-Malted Bohemian malts are actually malted in the Czech Republic. They are the easiest to find in America, but some other brands pop up occasionally, sometimes in limited quantities. More traditional maltsters are starting to release specialty malts as well, like Crisp with its small batch Hana malt, a grain that originated

Brew This!



Jim's Czech Amber Lager

Polotmavý

By Jim Spaulding

Spaulding is a veteran homebrewer of almost four decades residing near Denver, Colo. His goal with this recipe was to create an amber version of the classic Czech-style pale lagers, just with a bit more color and some toasted character. He was inspired by discovering some locally made versions, which had some of the characteristics that he wanted in his own. Boiling the entire mash after mash out introduces melanoidin character without the bother of a full decoction regimen.

He plays with the recipe and suggests a variation where you remove the caramel malts and add more Bohemian Dark.

Batch volume: 5 US gal. (18.9 L)
Original gravity: 1.058 (14.3°P)
Final gravity: 1.010 (2.6°P)

Color: 12 SRM
Bitterness: 35 IBU
Alcohol: 6.4% by volume

MALTS

5.5 lb.	[2.49 kg] Moravian Pilsner	3.2 oz.	[91 g] Weyermann CaraMunich III
3 lb.	[1.36 kg] Weyermann Floor-malted Dark	0.5 oz.	[14 g] Weyermann CaraFa Special II [added to vorlauf]
8 oz.	[227 g] Weyermann CaraBohemian		

HOPS

1 oz.	[28 g] Saaz @ 60 min [14 IBU]	0.5 oz.	[14 g] Saaz @ 10 min [2 IBU]
0.5 oz.	[14 g] Kazbek @ 30 min [6 IBU]	0.5 oz.	[14 g] Saaz @ 0 min [0 IBU]
1 oz.	[28 g] Kazbek @ 20 min [8 IBU]		

YEAST

White Labs WLP802 Czech Budějovice Lager Yeast

BREWING NOTES

Mash at a thickness of 1.4 qt/lb. (2.9 L/kg). Conduct a step mash at 133°F (56°C) for 10 min, 144°F (62°C) for 30 min, 160°F (71°C) for 40 min, and 170°F (77°C) for 10 min. Bring the entire mash to a simmer, and simmer for up to 30 minutes. Consider adding rice hulls during the sparge, as the malt can get a bit sticky after having boiled the entire mash for an extended period of time.

Boil 90 minutes, adding hops as indicated.

Ferment at 50°F (10°C) for 2–3 weeks before kräusening the beer with around 12% of the volume of freshly fermenting wort, using a spunding valve set at 15 psi (1 bar). After roughly two days of active kräusen, lower the temperature of the batch by 1°F (0.6°C) per day until it reaches lagering temperature. Lager for 5 weeks minimum. Optionally fine the beer near the end of lagering.

in the Moravian region of the Czech Republic. I've also seen German malts in the brewhouses of Prague as one of the few exceptions to Czech malt. I also believe it's within the spirit (local, high quality, flavorful) to use a flavor-forward malt closer to home, like what Larkin is doing at Cohesion.

- For yeast, the Czech strains are noticeably different than the German ones. I often see brewers make Czech-style beer by using 34/70 or other German strains, but those strains usually have a higher attenuation, resulting in a drier beer. Czech beers often have a bit of sweetness and a little rounder malt character than German beers. While water plays a clear role

here, so does the yeast strain selection. Stick with Czech strains for these beers.

- Czech hops go beyond Saaz. Kazbek has started to be used by more and more brewers across the globe. It has a higher alpha acid content than Saaz and more berry and citrus character. Agnus is one that Straková uses in her beers at Proud. More brewers in Prague are using these hops and producing a clear differentiation in their pale lagers from the larger, dominant brands of Pilsner Urquell and Budvar, but they are also used in amber lagers as well. Particularly for a hoppier interpretation of polotmavý, feel free to play around.
- The water in most of these beers is quite soft. Using a Pilsen or Prague

water profile in your brewing software is important. Many brewers soften their local water by blending with reverse osmosis water; the degree required will depend completely on your local water profile.

Another key to this style is to have a smooth final product. Czech ambers are not roasty, nor are they astringent. Healthy, low-temperature fermentations, cold lagering, and a soft hand on darker malts are keys to replicating this major component of the style. In fact, I would recommend using smoother dark malts in these beers to begin with, malts such as Weyermann's Carafera Special line, dehusked dark malts that avoid the more astringent and roasty qualities of most black malts. I'd also suggest adding these black malts to the vorlauf to get color and just a touch of smooth flavor from them. You also don't have to use dark malt at all: several recipes in this article skip it, and the beers are fantastic.

Brew This!



Pivovar Proud's Masopustní Šloos

Polotmavý

Recipe by Lenka Straková, Pivovar Proud.

This is a smooth, rich beer with a noticeable hop character. If you cannot find the Agnus or Kazbek hops, you can use Saazer varieties for the flavor additions. For the malts, Straková uses Czech maltster Sladovny Soufflet, as well as Weyermann. If you cannot find Sladovny Soufflet chocolate malt, using Weyermann's Carafera Special II would be a good option, it has a similar smooth chocolate character to it, and both of the malts are dehusked.

Batch volume: 5 US gal. (18.9 L)

Color: 17 SRM

Original gravity: 1.052 (12.8°P)

Bitterness: 40 IBU

Final gravity: 1.017 (4.3°P)

Alcohol: 4.6% by volume

MALTS

6 lb. (2.72 kg) Munich malt (61%)

0.4 lb. (180 g) pale malt (4%)

2.5 lb. (1.13 kg) Vienna malt (25%)

0.2 lb. (90 g) chocolate malt, vorlauf (2%)

0.8 lb. (360 g) caramel malt (8%)

HOPS

0.35 oz. (10 g) Agnus, 11.5% a.a. @ 75 min (17 IBU)

3.5 oz. (100 g) Kazbek, 5% a.a. @ 5 min (14 IBU)

0.9 oz. (25 g) Kazbek, 5% a.a. @ 15 min (9 IBU)

0.3 oz. (8 g) Agnus, 11.5% a.a., whirlpool (0.4 g/L)

YEAST

Lager yeast strain with lower attenuation

BREWING NOTES

Conduct a double decoction mash. Mash in at 46°C (115°F) and immediately heat to 52°C (126°F). Pull the first decoction and heat to 72°C (162°F) for a 10-minute rest, then boil 5 min. Return decoction to main mash, which should stabilize at 62°C (144°F). Pull the second decoction and heat to 72°C (162°F) for a 5-minute rest, then boil 5 min. Return decoction to main mash, which should stabilize at 72°C (162°F). Rest 10 min, then heat to 76°C (169°F). Boil wort 75 min and chill to 9°C (48°F). Ferment at 11°C (52°F). Chill to near freezing after primary is completed, and lager for at least 5 weeks.

Sv. Norbert amber lager from Klášterní Pivovar Strahov.



Brew
This!



Speciální Martin

Polotmavý

Recipe by Ryan Pachmayer.

Pivovar Matuska was founded by legendary Czech brewmaster Martin Matuska. The brewery strikes a balance between Old World, traditional styles and newer craft beer styles. On a recent trip to Prague, I enjoyed the Sv. Martin, a 16° polotmavý that Mr. Matuska designed to celebrate St. Martin's day. The beer is smooth and malty, with a noticeable hop flavor in the finish. Below is my version of the beer, inspired by what I drank, with some tips that the brewery was kind enough to share with me. Note that Czech Munich and medium caramel malts can be difficult to find, so feel free to substitute with Weyermann malts.

Batch volume: 6.2 US gal. (23.5 L)
Original gravity: 1.065 (15.9°P)
Final gravity: 1.017 (4.3°P)
Brewhouse efficiency: 70%

Bitterness: 25 IBU
Color: 13 SRM
Alcohol: 6.3% by volume

MALTS

10 lb. (4.54 kg) Czech Pilsner malt
4 lb. (1.81 kg) Czech Munich malt

1.5 lb. (680 g) Czech Caramel 50 malt

HOPS

2 oz. (57 g) Saaz, 4.1% a.a. @ 60 min
(23 IBU)
1 oz. (28 g) Saaz, 4.1% a.a. @ 5 min
(2 IBU)

1 oz. (28 g) Saaz, 4.1% a.a. @ 0 min

YEAST

Czech lager yeast

BREWING NOTES

Mash at 131°F (55°C) for 5 min. Heat to 145°F (63°C) and hold 30 min. Remove 1/3 of the mash and boil 10 min. Return to main mash to achieve 158°F (70°C). Rest 25 min. Heat to 168°F (76°C) and rest 5 min. Lauter and boil wort 90 minutes, adding hops as indicated.

Pitch yeast and ferment at the cooler end of the manufacturer's recommended range, around 50°F (10°C), until fermentation is complete. Cool to 40°F (4°C) over 3 days, then rest 5 days before cooling to 33°F (0.6°C) over 3 days and resting there 5–7 weeks, or until flavors have harmonized into a smooth, bock-like experience.

If you have a spunding valve, naturally carbonate this beer by capping it towards the final 1/3 of primary fermentation.

It's hard to talk about Czech beer without mentioning foam. Foam is a major cornerstone of Czech beer, and amber beers are no exception. Quality malts, step mashing, and a generous amount of carbonation should give you what you need in the final product to achieve a mighty dollop of foam on top of the liquid in your mug.

If you want to go one step further, Lukr side-pull faucets are available throughout the United States now, having become something of a trend for professional breweries and not just limited to Czech-style lagers. These faucets allow a high degree of foam control and pour a wetter, more quaffable type of foam than you'd get from a standard tap. I would absolutely recommend these for serving Czech-style beers, but there is one very large drawback: They are quite expensive, over \$300 at the time of this article. Still, if it's in the budget, I've rarely seen a brewer regret the purchase, and it makes a very noticeable difference in the pour of the beer.

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*Ich tät' so gern eins Trinken,
Mein Hals, er tut mir weh...*

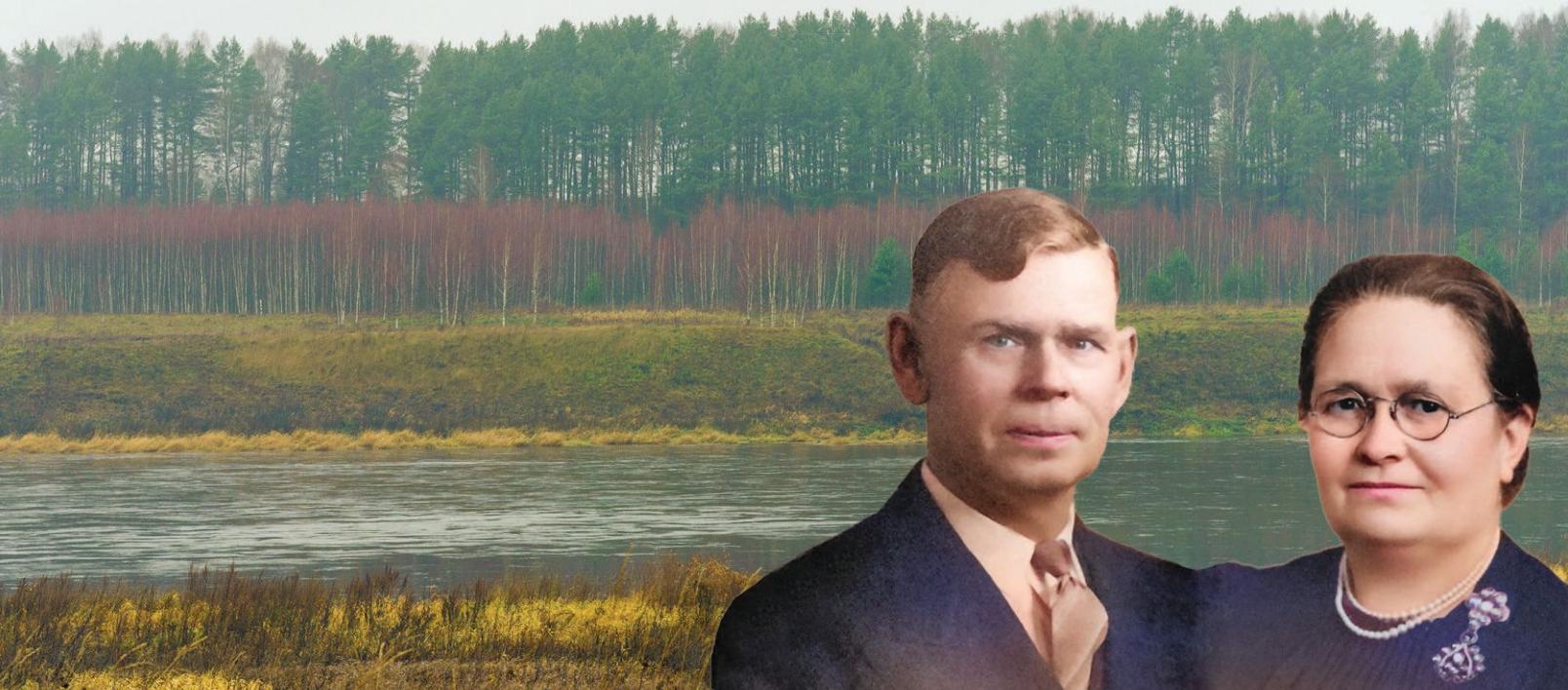
***"I would greatly love to have a drink,
My throat is aching..."***

— Traditional Volga German drinking song

Photograph of the author's Volga German great grandparents, Jakob and Elizabeth Schmidt, the first generation to leave Russia. They brought Old World brewing traditions across the Atlantic.

Beers *of the* Volgadeutsch

By David J. Schmidt



Resurrecting Brewing Traditions of the Germans from Russia

All translations from German, Russian, and Spanish are the author's own.

Jakob and Wilhelm walked between rows of rye grain on the steppes of southern Russia. The waters of the Volga River shimmered in the distance beneath the bright August sun, framing the profile of their village. The architecture here contrasted with towns from other parts of Russia: this was one of the hundreds of communities built by German settlers along the banks of the Volga, a people known in their own language as the Volgadeutsch.

Jakob and Wilhelm stood by the dusty road along with the other laborers. "Arbeit mach da Leben Süss," Wilhelm said, quoting the old Volgadeutsch proverb: "Work makes life sweet."

"That's what they say," panted Jakob. He wiped his sweaty brow in the muggy summer heat. At last, he heard the creaking wheels of the wagon and raised his head with a smile. "Now there's something that really makes life sweet!" →

Und wenn ich eins getrunken hätt Viel besser würd's mir geh'n...

***“And when I have had a bit to drink
I will be doing so much better...”***

— Traditional Volga German drinking song

The wagon rolled to a stop in a cloud of dust beside the farmers. The driver hopped down from the buckboard, unplugged a barrel, and poured a mug of frothy homemade ale for Jakob, Wilhelm, and the other workers.

This scene would have been common in the lives of my ancestors, the Volga Germans of southern Russia. For this article, I have embarked on a search for their ancient brewing traditions. I come from a long line of homebrewers, and I've long been fascinated with their brewing practices. For a previous article in this publication, I researched my grandpa's techniques from the 1960s. (See “My Grandfather's Crock,” March/April 2022). This time, I've gone much further back—to my ancestors who brewed in their Russian homeland.

There was a time when the Volga Germans in Russia came to number more than 1.7 million. By the early 20th century, their descendants had migrated across the globe and moved to the United States, Canada, Argentina, Brazil, and all over Europe. Famous Americans of Volga German descent include politician Tom Daschle, TV host Lawrence Welk, and musician John Denver (originally named Henry John Deutschendorf). Many readers of this article are likely descended from them as well—heck, we may even be distant cousins!

And yet, while I knew that my great grandfather Jakob used to brew in Russia, none of his original recipes survived. Like many immigrants of his generation, he quickly assimilated into U.S. culture, forgetting the old ways. After I finished college, I moved to the Volga region of Russia in search of my roots but found few remains of those old villages. Just a few old church buildings remained, along with a stone wall and a German cemetery overgrown with grass. For that matter, I didn't find much of a homebrewing culture at all in modern Russia. One notable exception was *kvass*, a

popular low-alcohol beer brewed from rye bread. (See “*Kvass: The Refreshing Almost-Beer of Russia, Ukraine, and Beyond*,” Sept/Oct 2022).

Now, many years later, I decided to embark on this ambitious task: would it be possible to reconstruct a traditional Volga German beer? Had enough records and folk memories survived to do so? It was worth a try. Join me as we travel back to those remote, dusty old villages, to a unique culture not exactly German and not exactly Russian, but something all its own.

Who are the Volga Germans, anyway?

How did German-speaking people end up in southern Russia?

In 1762, Catherine the Great ascended to the throne of the Russian Empire. Russia wanted to settle its southernmost territories and Catherine, being of German ancestry, decided to invite her countrymen to farm the lands along the Volga River. (A later wave of German immigrants came in the early 1800s and settled the Black Sea region of what is now Ukraine. While their culture developed along similar lines, I will focus on Volga Germans for this article.)

Catherine the Great's offer sounded ideal: the Germans could maintain their native language, culture, and religion, all while remaining exempt from military service. The Russian government built houses for them and offered them 110 acres, two horses, and even a cash loan to get started. War and instability plagued Western Europe at the time, and thousands of Germans eagerly accepted the offer, coming primarily from the Hesse (*Hessen*) and Palatinate (*Pfalz*) regions.

Getting to Russia was a different story, however. German government agents sometimes stole the would-be colonists' passports to prevent them from leaving. Those who managed to get out traveled

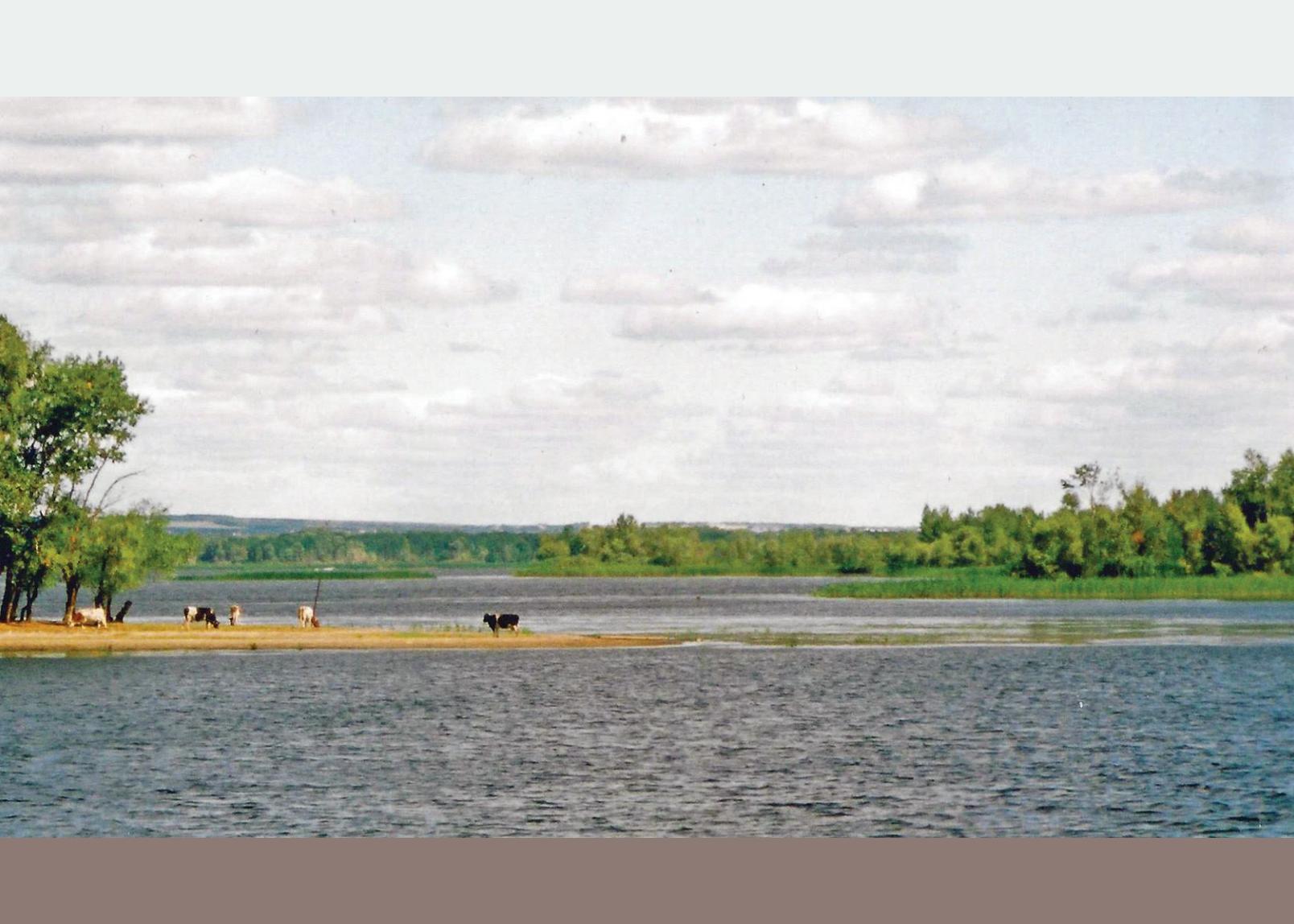


A panoramic view of the Volga River, photographed during the author's first trip to Saratov in 2002.

two weeks by boat to Russia, deboarded in Saint Petersburg, and then took wagons and horses all the way to the city of Saratov, 850 kilometers to the south. This part of the journey often lasted up to a year.

Over the following decades, they built new towns and carved out a life along the banks of the Volga. Their colonies thrived and their population boomed, growing much faster than Russia's average birth rate. By 1897, there were 1.7 million Volga Germans. A unique culture developed, drawing from the old German traditions and incorporating Russian customs as well.

Professor Arnold H. Marzolf examines this cultural mélange in his book, *Let's Talk German-Russian with Ernschtina un Hanswurscht*. “Thousands of our ancestors were born in Russia, lived in Russia and died in Russia. They were Russians as truly as the Chinese, the Japanese and the Russians who are born in America are Americans and citizens of this great country [...] I believe, with many others, that we should try to preserve both heritages and



be proud of both of them, without suppressing our Russian heritage."

These colonists spoke various dialects of German, similar to the languages spoken by the Amish of Pennsylvania and the Swabian tongue of modern Germany. They were deeply spiritual people, with the church standing as the central hub of each village's social life. In addition to their official Lutheran and Catholic faiths, they preserved much older folk beliefs in black and white magic, *Gespenstern* (ghosts) and curses, the evil eye and mystical folk healers. They developed rich culinary traditions, adapting Old Country recipes to the new land: wurst sausage, sauerkraut, potato salad, and hearty German bread. Most importantly for this article, they kept their brewing traditions alive as well.

Things started to change in the late 1800s, however. The Tsarist government reneged on its promises to the Russian Germans, requiring them to perform military service and implementing a process of forced "Russification." Children were

Raus... Raus...
Raus haben doch getrunken...
**"Pass it along... Pass it along...
Pass it along, it's been drunk down..."**

required to learn Russian in schools, and some communities were even pressured to adopt the Russian Orthodox faith. The Volga Germans began to leave in droves.

The final nail in the coffin came with the Second World War. With the Soviet Union at war with Germany, Stalin saw our communities as a threat. Anyone with a German last name was a potential spy, despite having lived in Russia for nearly 200 years. Stalin displaced the Volgadeutsch en masse, deporting thousands to Kazakhstan and the brutal labor camps in Siberia. Those

old settlements along the Volga River were destroyed for good.

That's what makes this article so unique. Unlike other brewing adventures of mine—when I've tasted authentic Mexican pulque, say, or Ethiopian *tej*—this time, I could not go back to the Volga German villages of my ancestors. They no longer exist.

Before attempting to reconstruct the recipes, I decided to read up on the drinking culture of those villages. Where and when would our people have enjoyed a nice Volgadeutsch homebrew?



Raus haben doch getrunken, Das haben mir g'sehn...

**“Pass it along, it’s been drunk down
As we have all seen...”**

Old-Time Drinking on the Volga River

There is no doubt that libations were a key part of Volga German life. Records repeatedly mention kvass, beer, wine, schnapps, vodka, and other tipples. While some of this was brought in from cities like Saratov, much of it was made right there in the villages.

The custom of *Nochborschaft*—“neighborliness” in the Volga German dialect—dictated that people share their bounty with their neighbors. Prof. Arnold H. Marzolf describes the practice of sharing flour, salt, lard, and definitely drink. “Neighborliness among German-Russians

extended all the way from friendly visits, to borrowing and lending, to sharing and being helpful [...] Some of them knew how to enjoy dancing and drinking on special occasions, and others knew how to enjoy a Sunday evening of Bible study and prayer.”

Beer was often given to laborers after a hard day in the fields, as in the scene at the beginning of this article. Dalles Schneider, a person I contacted through a Facebook group of Germans from Russia, recounted family memories of this custom. “The Germans from Russia would usually brew a large batch of beer during the fall harvest season. The beer would be kept in a large crock until served. The farm workers

would then receive a glass or two of beer as part of their evening meal.”

Beer and wine were ever-present at festivals and celebrations throughout the year. For much of this historical information, I am greatly indebted to the creators of the website NorkaRussia.info, which offers a snapshot of life in a typical Volga German community based on documents and personal testimonies. As the website explains, “Eating and drinking are always high on the list of ways to amuse ourselves. Various alcoholic beverages could be purchased or fermented at home.”

One quintessential Volga German holiday was Kerb, the harvest festival. Observed on the first Sunday in October, it was a raucous celebration that lasted three days or more. Conrad Brill describes Kerb in his memoirs of growing up in Norka. As he recalls, things could get quite wild. One man who hosted Kerb gatherings would preventively remove all the windows from his house ahead of time—he knew they would never survive the festivities!

The most important holiday of the year was Christmas. Families and neighbors shared food and drink, even baking extra loaves of Yuletide bread for their pets. One young woman of the village often went door to door visiting families, dressed in costume to represent the Christ Child; meanwhile, a local man would dress up as the *Neujahrsmann* (New Year’s Man) and visit neighbors as well. He wished the people of the house good fortune and, in return, they gave him food, money, and alcoholic drinks to warm himself.

A third, more frightening figure, made an appearance as well. Many Volga German towns had their version of Krampus, the frightening and raucous Christmas monster! Known as Pelznickel, he was played by a large young man with a deep voice. He would wear a large sheepskin coat turned inside out, a fur hat, and a large wooly fake beard, and carried a chain and whip to threaten disobedient children. “You’d better behave yourself,” parents warned, “or else... *Der Pelznickel kommt!*”

Like the *Krampuslauf* traditions of Western Europe, this character inspired nights of revelry accompanied by strong drink. Former residents of the village of Norka recall crowds of boys and single young men walking through the dark streets, following behind the shaggy, wild form of Pelznickel and drinking with glee.

The festivities continued into the New Year. At midnight on December 31, the village church rang its bells and the men filled the streets for merrymaking. In the early hours of the New Year’s morning, young people went to visit relatives. If

their hosts didn't awaken, they might fire a shotgun into the air to help them up! The visitors were then fed snacks of cold meats, given small gifts, and served strong drinks; a large New Year's Day dinner followed later in the day. The Norka website mentions some of the drinks enjoyed:

"They also enjoy kvass, fruit coffees, and a special caffeine-free coffee substitute called prips, which was made from roasted cereal grain. Of course, large quantities of vodka, schnapps, beer, and wine were also consumed, while toasts such as 'Zur Gesundheit!' (To your health!) were made and folk songs were sung."

Weddings were often held during this winter season as well. They were joyous affairs that lasted two or three days. Libations included fine wine, potato schnapps, and a drink made from hot tea and cognac. Guests contributed to the newlyweds' wellbeing by dropping coins into the bride's drink—one hopes that her drink was an extra strong one!

Not all drinking occasions were joyous, however. During funerals, older men were put in charge of watching over the dead body for three days prior to burial. These watchmen stood in silence all night long by the deceased, while villagers brought them food and alcohol, "to strengthen them during the long ordeal."

I learned much about the Volga German drinking customs from Germán [herr-MANN] Sack, a musician, folklorist, and cultural researcher from Argentina. A descendant of Volga German immigrants, he has collected many of the old songs and traditions from Russia. "I've been told that a number of folk songs might be played while drinking," he told me. "The musicians would play a stanza of a person's favorite song, and the revelers would call out the traditional toast of 'Tusch' at the end."

The most popular drinking song in Germán's repertoire is "Ich tät' so gern eins Trinken," one that he learned firsthand from his grandmother. Grandma Sack would sing it every New Year's Eve, inviting the family to join along. After each of the verses (which are quoted throughout this article), the crowd cried out "Raus," a phrase that loosely translates as "Pass it along!" They would then pass the glass along to the next person in the group. Germán has found versions of this drinking song sung by musicians throughout the Volgadeutsch diaspora: in Kazakhstan, Argentina, and some who moved back to Germany directly from Russia.

We descendants of the Volga Germans continue to enjoy such merrymaking. When I lived in Russia, I met a group

of students who shared this common ancestry. We had all grown up in different countries—Germany, the Czech Republic, Poland, the U.S., and other regions of Russia—and yet, when we got together for a drink, I felt like I was joining long-lost relatives. We chatted in a mixture of Russian and German, drank beer and schnapps, and talked about our families. We all knew some relative who made homemade beer or wine. Our grandmothers baked the same savory pastries. Whenever someone described a stubborn old aunt or uncle, I felt like they were describing someone from my family.

What style of beer had our ancestors brewed along the banks of the Volga, though? As I researched for this article, I thought about where I could search for answers.

Reconstructing Volga German Beer

Since the old villages in Russia no longer existed, where could I search for information on their brewing techniques? Lacking any original recipe, I would need to do some "detective work," collecting leads and picking up the pieces. Of course, speaking fluent Russian, German, and Spanish made this detective work a whole lot easier.

I began with a few basic research questions:

1. How was beer brewed in the regions of Germany that the colonists left?
2. What were some typical grains grown in the Russian colonies?
3. What Russian brewing traditions might have influenced the Volga Germans?
4. What do today's Volga German descendants remember of their family brewing traditions?



Volga German Kvass

This typical Russian kvass recipe incorporates two particularly Volga German ingredients: dried peaches, according to the tradition of the Volgadeutsch who migrated to Argentina, and beet sugar.

Sugar beets are very significant for Volgadeutsch heritage. They were typically grown in our people's gardens back in Russia, along with the apples and pears that would often go into their kvass. Beets are still the main source of sugar in Russia, in contrast with the cane sugar of the Americas. Furthermore, when many Volga Germans moved to the States, they worked in the sugar beet fields of the Midwest.

At least one American source told me that his Volgadeutsch grandfather worked the beet fields in Sheboygan, Wis. The man traveled with a portable moonshine still and made liquor from those same beets!

INGREDIENTS

300 g	[10.5 oz.] black rye bread
3 L	[3.17 qt.] water
8–10 slices	dried peaches
10–15	raisins
8 Tbsp.	beet sugar, or more to suit your preference
Baker's yeast	(such as Fleischmann's), or kvass yeast from a previous batch

Cut the bread into chunks, roughly 3–5 centimeters [1-2 inches]. Toast it in the oven or through multiple passes with a toaster. The darker the toast, the more flavor the kvass will acquire. Russian recipes indicate that, ideally, it should be as hard as *цыхарки*, croutons.

Bring the water to a boil. Remove from heat and add bread, raisins, and sugar. Let it soak covered overnight, at least 8 hours.

Remove soggy bread, strain the water back into the wort, and leave raisins in. Activate the yeast and pitch the yeast (or sourdough starter). Cover with lid and let ferment, stirring regularly every 2 hours. Ferment in the pot, or in a large glass jar. Ferment one to three days, depending on dryness desired. You can always add more sugar after fermentation for flavor.

Strain the kvass and place in the refrigerator. If bottling, let it bottle condition for 24 hours first. I suggest adding some extra dried fruit (raisins and peaches) to each bottle, which will also activate carbonation, as well as a touch more beet sugar. Feel free to experiment. Various Volga German sources in Argentina described recipes with honey, hops, and barley malt added, as well as other dried fruits.

Even if we could see the past clearly, however, we would never find one single, definitive recipe for “the authentic Volga German beer.” The brews would have been as diverse as the dialects spoken and traditions practiced. Even their crops could vary greatly from one year to the next—some records describe rough harvest seasons when only watermelons would grow!

The first place to look, though, would be in the brewing traditions of their ancestors back in Germany.

Most Volga Germans came from the Hesse and the Palatinate regions. One type of beer typical to the Palatinate was Zoiglbier. Similar to the Kellerbier and Zwickelbier styles, it was an unfiltered lager. Would lager yeast have survived the journey to Russia, however? The colonists had to pack light when they left for Russia, and it’s unlikely that they would have brought a keg of lager along. After the yearlong journey to southwestern Russia, they would have had to start brewing from scratch. It’s safe to say that they would have been using top-fermenting ale yeasts, then, and would have adapted to the grains available in Russia.

Another common German style beer was roggenbier, made from rye grain. If this recipe had journeyed with the colonists, southern Russia would be a great place to brew it. By the 19th century, Russia had become the world’s top exporter of rye and barley, much of which was grown in the Volga region. Rye was a major crop of Volga German communities, and many of their recipes called for rye flour. Millet was another important crop, used to make a porridge called *Hirsche*. Oats and barley were also grown, but these were primarily used for animal feed. Given the prevalence of rye, it’s possible that some sort of German roggenbier was brewed.

Of course, these people didn’t just preserve German traditions in a static, unchanged form, and we can’t underestimate the influence of Russian culture on the Volga Germans. Professor Arnold H. Marzolf’s book includes an entire chapter on Russian foods that made their way into the Volgadeutsch diet: *golubtsi*, *pierogi*, *borsch* soup, *kholodets*, and others. “We owe much of who we are to our ancestors who lived in Russia. [...] It is natural and normal that those groups should have absorbed and adopted some Russian traditions, customs, codes of dress, foods, etc.”

The same thing must have happened with brewing practices as well. So what beers were Slavic Russians brewing at the time?

Russian imperial stout might be the first guess of many readers, given its name. This beer’s connections to Russia are dubious at

Das haben mir g’sehn... Das Unterteil vom Gläschen Muss’ oben stehen!

***“I have seen it myself...
Now the underside of the glass
Must stand on the top!”***

best, however. The full name of the beer didn’t even appear in print until 1970, when the Barclay Perkins Co. debuted a beer under the title, and the style has never been widespread in Russia. When I lived in Saratov, in fact, few had even heard of this “Russian” beer—much less any of our pseudo-Russian cocktails like the Moscow mule!

It’s more likely that Volga Germans would have picked up their brewing practices from other humble, salt-of-the-earth farmers like themselves. In the Russian Empire at the time, it was common for peasants to brew beers for their own consumption. There were no taxes on homebrewing, and peasants often made ale for weddings and other celebrations.

Many small villages in Russia still brew these traditional ales, and several Russian bloggers provide detailed instructions on how to brew in the old-fashioned peasant style. One website describes the painstaking brewing process of rural towns of the Kirov Oblast, northeast of Moscow. Villagers continue to brew in a traditional *корчага*, a traditional Russian earthenware or cast iron pot with a wide neck.

This style of beer is known in Russian as *деревенское пиво*, literally “rustic beer.” It is similar to the European tradition of brewing “farmhouse ale” with whatever grains a farmer has on hand. Most Russian recipes call for rye and barley malt, typical crops for the Volga Germans back in the day.

Did our ancestors brew farmhouse ale from rye and barley, in the style of their Russian neighbors? It’s quite possible. To dig even deeper, I decided to speak with my fellow Volgadeutsch descendants.

I started by reaching out to the American Historical Society of Germans from Russia. Bob Ahlbrandt wrote back, “I did a search of our library holdings and past Journal editions using the keywords ‘wine,’ ‘beer,’ and ‘brewing.’ I did not find any hits.” He suggested looking into wine-making traditions from the Bessarabian part of Ukraine

but had no information on beer from the Volga region. I would have to rely on family anecdotes and memories.

I tried several Facebook groups of people descended from Germans from Russia. One woman named Linda Nelson told me that her Volgadeutsch grandparents had brewed beer, a tradition that they passed on to her mother. She wasn’t sure what style of beer they made, however, and her recollections were quite vague. “I just remember the sugar and yeast. [...] I remember a 10 gal crock in a closet, covered with towels. A few times, the beer blew up in the basement. It tasted horrible, and was quite potent. After getting sick from it, I learned to hate the smell of beer!”

Linda’s description reminded me of tales of my own Grandpa’s homebrew. Like my Grandpa’s beer, there were probably very few Volga German practices that remained in Linda’s family recipe. Brewing with white sugar and Pabst-brand malt extract was common in the U.S. at the time, but was far removed from Old World practices.

A few other people mentioned more specific beer styles. Dalles Schneider’s grandmother used to brew beer, which he described as similar to the Oktoberfest brewed by Schell’s Brewery in Minnesota. Ty Rosenow explained that his grandmother used to make a mildly fermented root beer, using hops as a preservative. He compared it to many European “small beers” with low alcohol content. Interestingly, he also compared this root beer with the Russian tradition of brewing kvass from rye bread.

That was about all I got, however. Although other respondents from the U.S. and Canada mentioned relatives who homebrewed, none could give me an example of a recipe that went directly back to the Russian colonies. I began to fear that it would be impossible to ever recreate Volga German beer with any accuracy.

As it turned out, however, I was just looking on the wrong continent.

Our Argentinean Cousins Come to the Rescue

Santa María is a small Argentinean town located about 500 kilometers from Buenos Aires. It was founded by Volga German immigrants who left Russia around the same time as my ancestors. When I first heard of it in a documentary titled *Dos Patrias: Alemanes del Volga*, I was amazed by how thoroughly the townsfolk had preserved their cultural traditions.

Santa María has a small tavern called Mi Bar, where the old timers sit around and sing German songs to the sound of an accordion, playing the German card game *Schafkopf*. The town has a choir that sings traditional Volgadeutsch songs. They even have a theater that performs plays entirely in the old Russian dialect of German. In fact, many young people in Santa María still have relatives who can speak it fluently! (By contrast, my Grandpa could only understand the language and answered his parents in English.)

The owner of Mi Bar explains the cultural dynamic in the documentary: "Normally, people speak in a very mixed way here, blending a lot of Spanish and German together. Sometimes, when someone comes in who doesn't understand German, folks will then switch to Spanish. That's very common here."

I found a similar level of cultural preservation in Volga German communities across Argentina. They had recorded entire albums of traditional music, published books on their heritage, and written studies of the dialects spoken. If they had preserved this much, might they have an original beer recipe as well? I decided to reach out to these "German-Russian-Argentinean cousins" to see if they had any leads.

I first contacted Adrián Lorea, a Volga German descendant and author of a book on the history of the Russian colonies, *Volga Salvaje* [Savage Volga]. Had he ever heard of an authentically Volga German beer?

"Yes!" Adrián replied enthusiastically. "The most traditional homebrew of Volga Germans is called *Kwast*."

An answer, at last: it all came back to kvass! That ubiquitous Russian beverage, made from rye bread, which had refreshed me on those hot summer days in Saratov. Adrián confirmed the origin of the recipes: "The German colonists acquired their recipe while in Russia, then brought it to the Americas." He quoted a Volga German author in Argentina who described it as "a spirituous beverage, comparable to something between a beer and a cider."

I asked Adrián if he knew of a traditional kvass recipe from Argentina's Volga



Brew This!



Volga German Kvass

Argentinean Style

For an alternative option, I have translated this recipe collected by Julio César Melchior, researcher and expert in Volga German culture from Argentina. This recipe was originally published on Melchior's blog under the title *Kwast, la cerveza casera de los alemanes del Volga* (*Kwast*, the homemade beer of the Volga Germans). He writes that this recipe is still brewed in some Volga German communities and villages in Argentina.

This is a direct translation of his recipe, with my own notes in parentheses.

INGREDIENTS

Roasted barley:	0.5 kilogram (1.1 lb.)
Toasted bread:	4 pieces
Yeast:	2 spoonfuls
Brown sugar:	0.5 kilogram (1.1 lb.)
Hops:	a handful
Water:	10 liters (2.64 gal.)

PREPARATION

Boil the water in an adequate receptacle, which should still have some room to spare, along with the roasted barley. The barley should be darkly roasted, having been previously washed and dried. (Note: any dark-roasted barley malt should do.)

Add three or four pieces of toasted bread about the size of an orange (preferably dark rye bread; dry day-old bread works great, and/or bread that has been toasted in the toaster or oven), putting two spoonfuls of yeast onto the relatively hard pieces of bread. Finally, add the brown sugar.

(Important note: this appears to be an oversight in the original recipe. As with any brew, the mixture should be allowed to cool sufficiently **before** adding the yeast; otherwise the heat will kill the yeast.)

Cover it well with a double layer of nylon and tie it off. At the end of the boil, add a handful of hops to the barley water. (Do this after the sugar has dissolved, before the mixture has cooled and the yeast has been pitched.)

In hot weather, leave it soaking for five or six days. In cold weather, it will take more time to be ready. Filter before serving.

Source: <http://hilandorecuerdos.blogspot.com/2015/01/kwast-la-cerveza-casera-de-los-alemanes.html?m=1>

Germans. He referred me to an article by Julio César Melchior, a fellow author and eminent historian from Santa María. The article was titled, “Kwast, the homemade beer of the Volga Germans.” Julio César writes, in the article: “Our ancestors, when they lived in the Volga region, began to brew this ancestral recipe for beer. It was very popular in Russia, and they brewed it during their early years here in our country as well. People still continue to brew it here in some towns and villages.”

Melchior’s recipe is higher in alcohol than many types of kvass, and it includes barley and hops as well as boiled rye bread. This is not unheard of for Russian kvass, however. Moscow-based chef and gastronomist Vlad Piskunov wrote an entire article on the diverse variety of recipes for kvass, some of which include hops. This fact, he writes, “demonstrates that there is no clear line dividing kvass from beer, especially considering the fact that there are also quite a few types of beer that do not include hops!”

I learned of a different style of Argentine kvass from Germán Sack, the source of the Volga German drinking song mentioned earlier. His family comes from the village of San Antonio, in the Department of Gualeguaychú north of Buenos Aires. His own relatives brewed Volga German kvass for generations, all the way back to Germán’s great-great-grandfather, Jakob Suppes, who brewed kvass back in the Russian town of Hussenbach.

His great-grandmother would brew up a fresh batch for the harvest season, and his father remembers a barrel of homemade kvass always available at the great-grandparents’ home. New ingredients could be added as needed, “without much science involved.” Germán has analyzed kvass tutorials uploaded by Russian YouTubers and confirms that their recipes are similar to his family’s.

Germán also mentioned one ingredient unique to Argentinean kvass: in addition to raisins, they also add dried peaches, known as *orejones de duraznos*. Peaches grow plentifully in northern Argentina, and the Volga German immigrants incorporated them into this Old World recipe. They referred to the fruits as *Äppel*, using the Hessian dialect word for “apples.” Germán learned, through his research, that people still make hard apple cider in the Hesse region of Germany, referring to it as *Äppelwoi* (apple wine).

It all comes full circle, then. The name and recipes for Argentinean kvass combine elements of all three regions, all three links in the chain: Germany, Russia, and the New World—apples, kvass, and peaches.

Such adaptation is a common cultural trait of the Volga German people: always on the move, always adapting, yet also filled with a nostalgic longing for home. Dr. Timothy J. Kloberdanz, an authority on our cultural traditions, succinctly describes these conflicting drives: “[On the one hand], you have to know who you are, you have to have a place that you call home. There is a love of *Heimat*, of the homeland. But at the same time, there is also an emphasis on mobility [...] to spread your wings and go elsewhere.”

I thought of Kloberdanz’s words as I wrote this article. I currently live in Mexico City, one more step in the journey of our family’s bloodline. I recently brewed a batch of kvass at my apartment, following Germán’s family recipe, and shared it with some Russian friends. They are staying with me in Mexico right now, refugees fleeing the mandatory draft for Putin’s war. They are also searching for opportunities, for peace, for a new home.

They smiled when they tried my kvass. They found the taste familiar and nostalgic, reminiscent of home. It was also unique and innovative; the fruity peaches lent it a light, refreshing touch, and it was less heavy than a typical kvass. That’s the Volga German touch: adaptation, innovation, and—of course—the old custom of *Nochborschaft*. You share what you have. You help a neighbor out.

That’s something we can all raise a glass to. In the words of our people: “Tusch.” Cheers, and to your health.

Dedicated to the memory of Great-Grandpa Jakob Schmidt, who left Russia...

To his distant ancestors, who left Germany... And to millions of other migrants, from every corner of the globe, who crossed unimaginable distances to give their children a future.

Resources

All translations from German, Russian, and Spanish are the author’s own.

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David J. Schmidt is an author, homebrewer, and multilingual translator who splits his time between Mexico City and San Diego, California. Schmidt speaks twelve languages and has spent the past fifteen years traveling throughout rural Mexico, Latin America, and Africa in search of ancient folk brews, making him a veritable Indiana Jones of home brewing. (Think Harrison Ford with a beer gut.) He can be found on Facebook, YouTube, and Twitter with the handle “Holy Ghost Stories,” or via the website HolyGhostStories.com. 

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BREWING WITH HEMP

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TRADITIONAL INNOVATION

A VISIT TO FRANCONIA'S BRAUEREI KUNDMÜLLER

By Ryan Pachmayer

From 1874 to 1989, a small village brewery produced only one beer, served one way, straight from a wooden barrel. Today, the Kundmüller Brewery produces around 30 different beers under the Weiherer brand, named for Weiher, the brewery's small village located about 10 minutes west of Bamberg in Germany's Franconia region.

Kundmüller has managed to embrace new green technologies and emerging craft beer styles while maintaining the classic look, feel, and core beers of a traditional Franconian brewery. The two proprietors, brothers Oswald and Roland Kundmüller, could never have imagined when they were younger that their family's single-beer brewery would grow to be what it is today. Even 20 years ago, Oswald says that if somebody had told him how the company would develop, he would have called them a maniac.





While things have grown quite larger from just a single beer, Kundmüller moved more slowly into new styles, adding a bock in the lineup next to its traditional Weiherer Lager, a helles-style beer, more than 30 years ago. A weisse, the first top-fermented beer from Kundmüller, arrived in 1997. By 2000, there were 11 brands, all traditional German-style beers.

Kundmüller brewed its first IPA in 2015. "People were surprised," says Oswald. "And they tried it and said it was good." The bitterness on that original IPA was closer to 40 IBUs, a far cry from the 60 IBUs it is today. The design was purposeful, Oswald says, and that as people got used to the taste, they became more accepting of a higher level of bitterness.

When you look around the on-site pub and restaurant, a recently remodeled, but very traditional-looking space filled with distinctly dark wood, you'll see patrons drinking everything from IPA to wine-barrel aged weizenbock to traditional lager. The traditional offerings do outpace more modern takes, however, with Weiherer Lager leading the way. An unfiltered, slightly younger offering called Weiherer Keller is the second-best seller, followed by a very Franconian Pils that features grassy hops and a hint of sweetness in an otherwise crisp beer.

The brewery typically uses base malt from Bamberger Mälzerei, the lesser known (to outsiders) maltster in Bamberg. Kundmüller then uses the other Bamberg maltster, Weyermann, for most of its specialty malts, with some from IREKS as well.

Kundmüller brews its beers in 60-liter batches on a Schulz brewing system. Schulz is the world's oldest brewing manufacturer and also happens to be located just down the road in Bamberg as well. The brew system at Kundmüller is something of a showpiece for Schulz, and they regularly take prospective customers over to the brewery to show it off.

The facility was designed with environmental impacts in mind, something Kundmüller has taken seriously as stewards of the area for a long time. Efficiencies were built in, and solar power and recycling are put into practice to a high degree.

The system has multiple holding tanks that allow three mashes' worth of wort to be held at once. This capacity has allowed Kundmüller to brew up to eight batches in a single day at times. The traditional German beers receive decoctions during the multi-step mash regimes, and all beers are open fermented for up to a week before being transferred to closed fermentation vessels where they complete fermentation.

Lagers are cold conditioned for another five to six weeks. "It is not a rush," says Oswald. "It takes time [to make this beer]."

It's important to keep the tradition alive, and this is the passion that drives Oswald and Roland. They are also motivated by trying new things, and the brothers love to make different and ever-evolving products while still producing the same local and regional styles with a fierce attention to quality. One



Photos © Weiherer Bier; courtesy of Ryan Pachmayer

Brew
This!



Weiherer Lager

Franconian Helles

Recipe courtesy Brauerei Kundmüller

This is the beer that started the company and is Brauerei Kundmüller's top seller. A helles-style lager, this is a grainy beer with a good dose of fresh hop character, owing to the generous addition of late hops.

A quality German Pilsner malt is ideal. Kundmüller uses hops from the Spalt region of Bavaria—look for hops that say *Spalter* with the *-er* suffix, which means the hops were grown in the Spalt region. Substituting Spalt hops from another region is fine, though.

Batch volume: 5 US gal. [18.9 L]

Original gravity: 1.046 [11.4°P]

Final gravity: 1.010 [2.6°P]

Color: 3 SRM

Bitterness: 20 IBU

Alcohol: 4.7% by volume

MALTS

8.5 lb. [3.86 kg] Pilsner malt (100%)

HOPS

0.5 oz. [14 g] Perle, 7.4% a.a., FWH
[16 IBU]

0.25 oz. [7 g] Spalter Select, 4.5% a.a.
@ 60 min [4 IBU]

0.75 oz. [21 g] Spalter Select, 4.5% a.a.
@ 0 min

YEAST

German lager yeast

BREWING NOTES

Mash at 62°C [143°F] for 5 min, then at 64°C [147°F] for 30 min. Remove 1/3 of the mash and boil 10 min while stirring, taking care not to scorch the grain. Return decoction to main mash to reach 68°C [155°F]. Rest 5 min, then heat mash to 72°C [162°F] and hold 20 min. Boil wort 90 min.

Cool wort to 8°C [46°F]. Pitch active German lager yeast strain and ferment 7–14 days at 9°C [48°F]. Attach a 15 psi [1 bar] spunding valve at the start of fermentation, or seal fermentation vessel several days prior to the end of fermentation.

Cool beer by 1–2°C [2–2.5°F] per day until it reaches lagering temperature. Lager 5–6 weeks. An optional kellerbier version can be served a little younger, when it is cloudier but slightly brighter in yeast and hop character.



Weiherer Urstöffa Dunkles.

important international partner has been Fat Heads Brewery out of Ohio. The two breweries have worked together on collaboration beers over the years, including IPAs.

"We just grew organically," Oswald says, talking about how this went from a small brewery with one beer to a regional powerhouse. "People bought more beer, so we kept supplying more to meet the demand," he says, perhaps understating the work involved in running a company with more than 60 people, in addition to training apprentices.

Oswald and Roland's father, Erwin, still comes in and works as well. He's busy distilling on site and makes various products, from different types of schnapps to a sloe berry liqueur that might resemble something you'd find labeled "sloe gin" in

the US. The lineup is called Erwins Stöffla, with Stöffla meaning "good stuff."

Over the last few decades, the Kundmüller family has created a large and impressive compound, from the state-of-the-art brewery to the packaging facility, as well as a guesthouse where patrons can stay for a very reasonable price, typically 40 to 60 euros. The entry room to the guesthouses holds a collection of more 2,000 mugs obtained from a local collector about five years ago.

Growing up during the day when the restaurant was closed, Oswald and his brothers would work on the adjacent farm. His oldest brother still works the fields. The family lived next to the pub, and Oswald still remembers busy days when guests would be brought in and seated in the living room, as space was valuable.

Oswald and Roland hope that one of their children will show an interest in leading the next generation and keeping the brewery alive and strong. In the meantime, beer will be made. Some will be newer craft styles, but traditional styles will always have a place.

Ryan Pachmayer is the head brewer at the Yak and Yeti Restaurant and Brewpub in Arvada, Colo. He is also a BJCP Certified beer judge. He can be reached at ryan@puzzah.com.

Brew
This!

Weiherer Rauch

Franconian Rauchbier

This is the winningest beer made by Kundmüller, with multiple gold medals collected at the prestigious European Beer Star awards, and more than 10 other awards at various competitions. The rich, smoked-malt flavor is striking but doesn't linger heavily on the tongue, as this beer finishes dry, leaving you with just a hint of smoke, and wanting another full sip.

Batch volume: 5 US gal. [18.9 L]

Original gravity: 1.052 [12.9°P]

Final gravity: 1.011 [2.8°P]

Color: 4 SRM

Bitterness: 30 IBU

Alcohol: 5.3% by volume

MALTS

5.5 lb. [2.5 kg] Rauchmalz (55%)

4.4 lb. [2 kg] Pilsner malt (45%)

HOPS

0.66 oz. [19 g] Perle, 7.4% a.a., FWH [20 IBU]

0.55 oz. [16 g] Spalter Select, 4.5% a.a.

@ 60 min [10 IBU]

1 oz. [28 g] Spalter Select, 4.5% a.a.

@ 0 min

YEAST

German lager yeast

BREWING NOTES

Mash at 62°C [143°F] for 5 min, then at 64°C [147°F] for 30 min. Remove 1/3 of the mash and boil 10 min while stirring, taking care not to scorch the grain. Return decoction to main mash to reach 68°C [155°F]. Rest 5 min, then heat mash to 72°C [162°F] and hold 20 min. Boil wort 90 min.

Cool wort to 8°C [46°F]. Pitch active German lager yeast strain and ferment 7–14 days at 9°C [48°F]. Attach a 15 psi [1 bar] spunding valve at the start of fermentation, or seal fermentation vessel several days prior to end of fermentation.

Cool beer by 1–2°C [2–2.5°F] per day until it reaches lagering temperatures. Lager for 5–6 weeks.



"Throwing the sidra" in
a traditional long pour.



Cider, Sidra, Sagardoa

American Ciders in the Tradition of Asturias and the Basque Country

There is nothing in the world quite like the ciders that hail from the Asturias and Basque regions of Northern Spain. *Sidra*, as cider is called here, is a way of life. It's often described as tart, earthy, dry, funky, flat, and cloudy. Even though more than 200 apple varieties grow here, traditional sidra is restricted to 22 varieties in order to be labeled *Sidra de Asturias*, protected by European Union regulations.^{1,2}

The European Travel Commission (ETC) calls cider an “inseparable” part of Asturian culture and society, with three different types: natural or flat cider, newly pressed or table cider, and sparkling cider.³ The *sagardotegi* (cider house) is central to the Basque community with a history that dates to pre-Roman times. From the 15th to 19th century, scurvy took the lives of more than two million sailors. However, Basques, who had set sail with around 12,000 gallons of cider, weren't as affected as the others due to their on-board beverage at the time, though no one knew why.⁴

By Kristen Kuchar

Today in Spain, people gather in the cider houses with friends to sip this beloved beverage over food, especially during the cider season spanning January to May.⁵ Besides the unique taste that many sweet-cider drinkers may not be accustomed to, one of the most unique things about this cider is how it is served. The cider is poured from three or more feet above the glass, which allows it to aerate along the way. “Throwing the sidra” usually allows just a single-sip serving, with plentiful refills ready to go.¹ ➤

Oregon's Son of Man produces Basque-style cider exclusively. Cofounder Jasper Smith explains that the entertaining pour compensates for sidra's low carbonation. "These are not pétillant like great French cider or force carbonated like most American and English options," he says. As a result, you need to long-pour your cider from the bottle into a wide-mouth glass, no more than a few ounces at a time.

"Doing this breaks the surface tension in the liquid, releasing the dissolved CO₂, which bursts all of these amazing aroma compounds into life (and into your nose) for just long enough to down the cider. Then reload and do it again," Smith says.

All Son of Man ciders are made once a year, during the apple harvest, with cider-specific apples. The apples are pressed onsite with no juice concentrate, no acid adjustments, and no chaptalization (adding sugar to boost alcohol).

"Our love of Basque cider was founded [upon] and continues to be inspired by its ability to pair with food," Smith says. He had cooked professionally at restaurants in Philadelphia and Portland, but the idea of having cider with anything other than a cheese plate was a foreign concept before he had his first sip of Basque cider.

"Sagardoa (Basque for cider) is high acid, dry, but fruity, and is a revelation with

salty, fishy, fatty flavors—grilled steak, fresh seafood and conservas, cured meat, and all things umami," he explains. "The unique combination of low ABV (5–6.5%, like beer) and racing acidity (like wine)—occasionally mingling with funky, earthy flavors—means popping a bottle (or four) with dinner is a great idea," Smith says.

Smith explains there are a handful of reasons Spanish ciders are unique to those from other regions. These ciders are much higher in acid than French or English ciders, he says. They are also fermented totally dry but retain tons of bright, tropical fruit flavors. "Many of our favorites showcase flavors ranging from orange peel and fresh-cut grass to baking spice, leather, and salinity," Smith says.

Unlike some other ciders that are aged, Basque cider is best enjoyed soon after it's made, he explains. "Because they have lower tannins, these ciders are not meant to age, so drink like the Basques do, little and often," Smith says. "Don't get too precious with a bottle and leave it in the basement—enjoy it while it's fresh and delicious and then go get another one."

When it comes to apples, the Son of Man team uses a different blend annually, and each of the 11 fermenters contains a different blend of apples. Approximately 50 percent sharp apples are used, with the remaining half split between bitter-sharp and bitter-sweet varieties. "This allows us to obtain a must that is biologically stable, with a good pH, solid tannin backbone, and adequate malic acid content," Smith says.

There is no doubt that an integral role in enjoying sidra is pairing it alongside a delicious meal. In fact, Donostia–San Sebastián ranks among the top cities in the world for per-capita Michelin stars.

In Basque Country, it's traditional to enjoy cider alongside *txuleta* or grilled ribeyes, Smith says. "The acid helps cleanse the palate between bites of rich, salty meat," he explains. "But we also think fresh seafood (grilled fish, steamed clams) and simple, well-seasoned veggies (spring peas braised with onions and bacon) are great pairings." Cider is ubiquitous at all of the spots and evolved in tandem with the amazing food throughout the region, Smith adds.

Such mouthwatering pairings of food with Basque cider also led to the launch of Brooklyn Cider House. During a visit to Northern Spain, Peter Yi discovered the inspiration to open his New York cidery.

"It was primarily the food pairing ability and versatility and flavor, which is completely dry," says the cidermaker and co-owner. "Also, it makes one feel great not only on the day you have it, but the following day as well."



The unique combination of low ABV (5–6.5% like beer) and racing acidity (like wine)—occasionally mingling with funky, earthy flavors—means popping a bottle (or four) with dinner is a great idea.

—Jasper Smith, *Son of Man* cofounder



Northern Spanish-style cider complements a wide range of foods.



Tips for Home Cidermakers

"Cider is more like wine, and the concept of a recipe is a bit vague—put the grapes in, make it good. I think making a Spanish-style cider at home without the right apples and the generationally old fermentation vessel will be difficult to achieve and will often show up as a fouled cider with too much vinegar flavor to be palatable, or too much *Lactobacillus* buttered popcorn aroma. So, tread lightly."

- apple You need high-acid apples that will yield a must with a pH of 3.3 to 3.35.
- apple Include some high-acid crab apples if you can find them, to boost tannins.
- apple Ferment with wild yeast only, between 53°F and 63°F (12–17°C). Low and slow is the mantra.
- apple Aerate in first third of fermentation by vigorously racking between vessels or oxygenating through a diffusion stone.
- apple Rack off the gross lees and then let the cider rest for two weeks. A pellicle might develop—stir whenever you see colony units.
- apple If you have a neutral or lightly toasted oak option (stave, cube, powder, etc.), put that in during fermentation and remove when you rack to a clean vessel for maturation. This is a way to try and create body in the mid-palate that will be missing when not using the full complement of proper fruit.

—Andrew Byers, *Finnriver Farm & Cidery*

"If you can get fresh cider apples try spontaneous fermentation. The result is going to be dry, crisp, and food friendly."

—Peter Yi, *Brooklyn Cider House*

Jared Smith says the most important thing is to use cider apples. "You wouldn't use Concord grapes to make wine for a reason: they were developed for a different purpose," he says. He suggests finding someone growing cider fruit and seeing if you can snag enough to fill a carboy, aiming for 50 percent sharp, high-acid apples such as Ashmead's Kernel, Roxbury Russet, or even Gravenstein. "If you can't find bittersharp apples, split that 20 to 30 percent between sharp and bittersweet varieties and fill out the rest with bittersweet apples (Muscadet de Lense, Marie Menard, Bulmer's Norman) and see how it turns out. Chances are, it will taste pretty good."

If you don't have any sort of bulk pressure-bearing tank, rack the cider off the heaviest lees around a gravity of 1.002 and bottle at 1.001 to get a bit of bubble.

—Jared Smith, *Son of Man*

Minimizing initial sulfite dosage will capture the indigenous flora of the orchard where apples or juice was sourced. This can help kick off the necessary series of fermentations that will progress as the cider ages. Bottling and serving these ciders when the fermentations are in balance and the cider is fresh is key, as too strong an acetification or a loss of the fresh aromas and flavors would not be considered typical. (Frequent sampling is always encouraged!)

"Certainly, a funk fest of *Brettanomyces* would not be authentic, nor would it show the fruit to best advantage. True Basque or Asturian ciders are artisanal products made with great care and skill. Our attempts in this style are still evolving and are made in homage to this grand tradition."

—David Thornton, *James Creek Cider*

Traditional Natural Cider

By James Asbel

Ciders from Northern Spain are natural ciders made without added sulfites, or only very little at bottling, Yi explains. "It goes through three fermentations: alcoholic, malolactic, and microbial fermentation." Three of his ciders are Basque-influenced—*Raw*, which is very dry, funky, and natural; *Half Sour*, with its wildflower and pickled-pear flavors; and *Little Wild*, which is fruity and feral.

Owners of James Creek Cider House Ann Marie and David Thornton also echo that connection with food and Basque cider. "We love the food and culture of Spain, so when we discovered Basque and Asturian ciders and how fabulously they complemented their cuisine, especially spicy tapas dishes, we immediately wanted to try our hand at creating this ancient style of cider," Ann Marie says.

The North Carolina cidermakers created a Spanish cider, *Estrella Fugaz*, to be added to their roster of ciders. David explains that ciders from Asturias and the Basque Country tend toward sharp and acidic, often with a bracing spritz of volatile acidity. The serving tradition of the famous long pour helps to soften some of that acidity and bring fuller apple and floral notes to the fore, he says.

"We prefer more strict microbiological control for most of our ciders, so the flavor profile here is quite distinctive and unique. Since most of our ciders are fermented in neutral oak, we keep these barrels separate from our other fermentations," David says.

"It's all about the indigenous flora, including the yeast conversion from sugar to alcohol, some malolactic fermentation, and potentially multiple polymicrobial processes that produce a light amount of acetification," he says. He adds that these processes can be sensitive to sulfites and carry risks of too much oxidation if ullage is not appropriately restricted. "This combination of flora becomes distinctive to each barrel, and ideally blending these together will foster a house style over time."

Spain's one-of-a-kind style of cider was Erika Colby's inspiration for opening Anoche, a Basque-inspired cider house and bistro in Portland, Maine. "I've always loved Basque cider, so I went to Spain knowing that would be the inspiration for the bar," she says. "I see the Basque region as akin to Maine in terms of landscape, and culture and the food and drink at Anoche is a reflection of that kinship."

The food program is based around Spanish meats and cheeses and *conservas*, such as a creamy, raw cow's milk cheese aged on Asturias cider apple pomace for five months, served with fig, rosemary

Ciders of Spain is the only US importer exclusively dedicated to Spanish cider. I founded the company in 2012 upon decades of personal experience in northern Spain and a developed familiarity with the region's history, culture, and cuisine. I am pleased that there are many new advocates for *sidra* and *sagardo*, the Asturian and Basque versions of this ancient beverage, respectively, but there is a lot of misinformation about this tradition when presented in the absence of the historical and cultural contexts that explain how and why Spanish cider is made the way it is, what its makers' intentions are, and what changes in challenges and methods have occurred in their industry over the last century and, especially, in the last decade.

There are many good ciders made in Northern Spain, but unlike the odd bottle that falls into the hands of a wine or beer importer we can offer a wide-ranging portfolio curated with years of experience. Preferring not to be steered by local commercial interests when selecting our original portfolio in 2012, we sampled more than 70 different ciders anonymously in bars and restaurants before shortlisting producers to visit. From that shortlist, we visited cidermakers and sampled not only from bottles in their tasting rooms, but through series of barrels in their *bodegas* to understand their individual approaches to fermentation, maturation, and blending. From these, we selected, and have continued to expand and refine, our portfolio, unique in the market for presenting a full range of styles from traditional to new offerings that demonstrate these cidermakers' sophisticated awareness of the global cider re-awakening and its top achievements. We continue to spend time in their *llagares*, or cideries, advancing our understanding.

As for the most traditional sidra and sagardo (Asturian and Basque, respectively), their standout feature is that they express their origin in the oldest cider region still producing cider, which has maintained its ancient methods for centuries as the dominant mode, defining for their community, even today, what cider is. There is no such continuity of an ancient style in any other region of the world, because those regions stopped consuming cider as a mainstay for lengthy periods, so any throwbacks, like scrumpy in the UK, are today a fraction of consumption, considered quaint, and not among the leading styles.

But in Northern Spain, traditional cider has been continuously produced and has dominated the beverage segment for centuries. In Asturias, traditional natural cider still represents 90 percent of cider sales, and locals are slow to adopt newer, even award-winning styles, that have allowed us to put together a truly diverse international style portfolio from a single region to offer to Americans.

Natural Spanish cider is made without transporting processed juice around and without using stabilizers, preservatives, flocculants, and, most notably, lab-cultured yeasts. So, Spanish cidermakers can't micro-manage outcomes to produce the endless, reliable flow of a consistent product that the modern industrial food and beverage industry has induced several generations to accept for the benefit of the manufacturer's bottom line. Instead they manage consistency by blending across the variation of outcomes from one tank to the next at ambient temperatures over months, guided by constant sampling in the *bodega* rather than by manipulating data-driven inputs at the outset.

So, what do you get instead? An earthy (some say "funky") somewhat sour, carbonic, hazy gold to straw-colored drink that you chug in 3-ounce pours that have been aerated when poured from an arm's length above the shoulder, crashing into the side of a tilted wide-mouth glass held at the waist.

Your first visual experience in the glass is called the sidra's *espalme*, which means that it fluffs up in the glass like a short head of beer, for just a few seconds, and then dissolves down into a straw-gold milky pool for immediate quaffing in one go, washed over the entire mouth—roof and tongue.

After draining the glass, you will note that a light film of bubbles slides slowly down its sides. This is called *pega*. Espalme and pega are definitive visual characteristics of sidra. If you keep doing that increasingly fashionable *escanciar*, known here as the "long pour" with other ciders and wine, all you will get is a cute Instagram or TikTok post. What you won't get is the amazing mouthfeel of a liquid infused with tiny bubbles of carbon dioxide released from solution by vigorously shaking the unopened bottle and then pouring it long. Finer than even Champagne bubbles, and evenly diffused rather than rising vigorously from the bottom of a flute, the character is best described as like the aerated froth immediately below a waterfall. The mouthfeel is more creamy than prickly.

The airiness of this cider actually diffuses the unusually acidic and somewhat acetic initial flavors, softening their attack and helping more subtle aromas rise into the nose from fresh, tart apple to grassy, floral, or tropical fruit. Then there's that once controversial "barnyard" thing going on—the aromatic signature of the malolactic fermentation of a wild, natural-yeast cider, the famous "funk." Americans go for the latter descriptor over "barnyard," but for me there is nothing but charm in scents reminiscent of the pastoral environment where cidermakers work their magic.

And that's what makes this style of cider, whether it is made with the unique varieties of cider apples grown along the northern coast and up into the snow-capped mountains of North Atlantic Spain, or heirlooms resurgent in North American apple country, a perfect model for the home cidermaker. You can bet this was the way cider was in colonial times when more cider was consumed here than water.

For more technical, culinary and historical depth visit us at cidersofspain.com.



Andrew Byers pouring cider at Finnriver Farm & Cidery in Chimacum, Wash.

Marcona almonds, and grilled local bread. While the bar features many cider styles and regions on the menu, Spanish cider is the backbone of the cider program.

"I always make sure to have multiple Spanish ciders on draught and in bottles, and we love introducing customers to the unique flavor and serving method—high pours (*txotx*) and *porróns!*—of Basque cider," Colby says. When it comes to specific ciders from Spain, Gurutzeta is a classic that Colby tries to always make available. "Isastegi and Trabanco are also awesome choices for traditional Basque style," she says.

Colby says Basque ciders tend to be earthy, funky, and bright; usually somewhat tannic and on the drier side, especially compared to French cider, but with fruity notes to keep them balanced. "Because Basque cider is low-intervention and using heritage apples it has a more nuanced character than some American consumers would be used to," Colby says.

She says it's always a joy to introduce people to the unique flavors of Basque cider, especially to the customers at Anoche who tend to be curious and enthusiastic cider drinkers.

Andrew Byers is the head cidermaker and general manager at Finnriver Farm & Cidery in Chimacum, Wash. Describing himself as an ambassador of the category, he is looking to help share the stories that knit the world of cider together. His start in the cider world



Peter Yi and Susan Yi of Brooklyn Cider House.

was helping to make French-style ciders in Upstate New York, so it felt natural to look for other traditions to emulate that would inspire people to explore the beverage further. "I tried my hand at open-tank fermentation in Chimacum, Washington, with some intentionality to cultivate the alternative fermenters that help give true sidra its funky complexion," he explains.

"That is to say, I pitched souring cultures like *Pediococcus*, *Acetobacter*, and *Lactobacillus* in addition to the wild yeast present in the apple juice," he says. The inspiration comes from romantic memories of his time in Spain, he says, and a desire to flirt with soured beer, soured ciders, and, to some extent, kombucha.

"Spanish sidra embraces a balance of place, fermentation talent, apple selection, and trust," he says. He describes these ciders as edgy acid balls that grip you and leave you freely salivating as you come up for air.

When it comes to food pairing, Byers says they tend to pair well with rich food, creamy strong cheeses, creamy seafood stews, and sauced meatballs.

Concerned about representing cider from a region to which the company had no actual ties, the cider team took the time to plant the right apples in the orchard, wait for the right blend of substitute varieties to manifest, and then approach the process with care and respect.

Byers's advice is to buy true Asturian cider, drink a lot of it, with food, on hot summer days, and learn how to pour it...a little at a time. "And then with that appreciation in your heart, you can go to your orchards and your cider houses and begin to mimic the style," he says. "Spanish cider is so deeply connected to food and community, I also find it hard to replicate all of the cultural fabric that makes it so amazing," Byers says.

"It's true that the style is delicious with shellfish, salty olives, and cured meats,



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so I reach out to replicate the community fabric that supports multi-faceted regional agriculture, fisheries, and fermentation. What sidra does is so much more valuable than what it is. It unites communities. It is a strand in a much more complicated system that is (in my view) enviable for all the reasons Finnriver is doing what it does—reconnecting people to the land that sustains them and growing community. Cider is a means to an end. It is a way to save the farm with a value-added product; it is a way to steward the land with a regenerative orcharding system. Cider is a way to bring humans together in this multi-variate world.”

RESOURCES

- ciderculture.com/cider-style-101-sidra-hard-cider-with-spanish-flair
- npr.org/sections/thesalt/2017/06/05/528107441/an-ancient-spanish-style-of-cider-takes-root-in-america
- visiteurope.com/en/experience/asturias-cider-route
- nationalgeographic.com/travel/article/basque-cider-houses-keep-cultural-and-



Brooklyn Cider's Three of Life and Little Wild, paired with wood-fired pizza.

culinary-history-alive

5. saveur.com/article/wine-and-drink/Basque-cider

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



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CHRISTMAS IN JUNE

Finding Inspiration at the
Homebrew Con Expo





By Mark Pasquinelli

The tingling sensation starts with the onset of spring, and by the end of May, my thoughts are consumed by only one thing: Homebrew Con. I must confess to feeling like Ralphie from *A Christmas Story*, in a nonstop daydream about the upcoming conference—that lovely, glorious, beautiful event around which my entire homebrewing year revolves.

The gathering defies description. As many have said: it's a sprint *and* a marathon. Reconnecting with old friends and making new ones; attending educational sessions and sponsor seminars; drinking in words of wisdom from the headline speakers; sampling the local brews at the Kickoff Party; trying homebrews at the Social Club; reveling in the Mardi-Gras-like pageantry of Club Night; applauding the National Homebrew Competition award winners; and partaking in all the host city has to offer—it's a dizzying and mind-boggling three-day extravaganza.

But last year, I realized I'd never taken full advantage of the Homebrew Expo. Sure, I'd traversed the aisles of vendors and talked to the reps, scored my share of freebies, and marveled at the gadgets and equipment—all the while, like Ralphie, trying to talk my wife into the purchase of a piece of glistening, stainless-steel wonderment that would fit perfectly in our garage.

My problem was that I rarely used all that free conference and Expo swag. I always had the best of intentions but simply forgot about all those goodies. With last year's conference in Pittsburgh—practically my backyard—I resolved to make 2022 different and use my Expo loot to craft exciting recipes, maybe even learn a few things in the process.

PLUNGING INTO THE CORNUCOPIA

As always, my wife Karol figured heavily into my plan. She'd be my partner (as well as a second source of swag) and another set of eyes to scout the expo hall. Since many attendees travel to Homebrew Con as part of a group, the value of alliances at the Expo cannot be underestimated.

Of course, I wanted to maximize my plunder, yet I felt obligated to establish some civilized ground rules instead of pillaging willy-nilly through the Expo's specialty grains, hops, and yeast with unbridled avarice.

Respect and politeness needed to be paid to the vendors by always saying think you, asking questions, listening to their pitches, and maybe taking one of their cards (they can come in handy). My mission also couldn't devolve into a free-for-all grab fest. Even though the representatives don't want to return home with leftover samples, limits were needed. There were other homebrewers to consider so that there'd be enough for everyone to share the bounty. And, above all, I couldn't play the *I'm writing a magazine article on the Expo* card to the vendors, which might have given me an unfair advantage over other attendees.

Speaking of other attendees, I envied the cunning and guile of some whose social media posts boasted of seemingly countless Breiss bags of swag. I tried my best to emulate my friend Susan Verberg, who spoke at the Providence and Pittsburgh conferences (hard as I try, I can't pronounce *gruit* to her liking). She's a master of using her charm and wiles to cajole unheard-of amounts of booty.

When the Expo opened, I first tried to visit some of the quieter booths so I could browse and chat without inconveniencing other homebrewers. However, as the Expo's intensity increased, this plan became untenable, and I began to feel a bit like Ralphie waiting in line for Santa (the Yakima Valley Hops queue, in particular, seemed to snake on forever—and for good reason). But I soon realized this was a good development. I was able to take a break and regroup while, of course, sampling some brews. And there's also information to be gained in lines by discussing Expo strategies with fellow homebrewers and asking for their recommendations. I got a lot of good tips that way. →

YOU MIGHT LIKE SOMETHING DIFFERENT

As I randomly gathered ingredients, I tried to formulate recipes, although, aside from trying to maximize ingredients in the greatest possible variety, I wasn't sure what I wanted to brew. Karol came to the rescue, supplying the first idea. She held up a quart-sized container of fruit puree, looked me in the eye, and said, "We're making a peach saison."

Who was I to argue? Saison is one of my favorite styles, and I've brewed it in many variations (see "World of a Thousand Saisons" in the Jul/Aug 2018 issue). A locally famous peach saison immediately came to mind, and I set my sights on trying to emulate it.

Creating recipes is one of my favorite things about homebrewing. When I nail one, it's like winning the lottery. Packs of malts from Briess, Great Western, and Canada Malting played nicely into my plans. Although most of the bags were only 4 ounces, I had no problem obtaining enough: taking multiple packs was encouraged.

My standard saison recipe consists of Pilsner, Munich, and wheat (or rye) malts, a dash of table sugar, and about 30 IBUs worth of bittering hops. My go-to yeasts are White Labs WLP565 Belgian Saison (purportedly sourced from Brasserie Dupont) and Wyeast 3711 French Saison.

I'd been curious about honey malt for several years, and a 1-pound bag of the Briess brand in the conference swag bags made its use seem preordained. I added a healthy portion, in place of some of the recipe's light Munich, hoping its "warm bakery flavors of biscuit" would lend notes reminiscent of peach cobbler to my saison.

Another tweak was reducing the bittering hop addition to 20 IBUs, my standard

for fruit beers. Lastly, I subbed Mangrove Jack's M29 French Saison yeast, courtesy of BSG, starting fermentation at 68°F (20°C) and ramping the temperature to the recommended midrange of 85°F (29°C).

The peach puree, of course, was the star of the recipe. Made by Boiron, a nearly century-old company headquartered in France, the puree was pasteurized and required no refrigeration. Their representative told my wife that one container would work, but two would be better. Company literature confirmed that advice, recommending about 16 ounces per gallon, which adjusted the base recipe to four gallons, with a puree addition of a half-gallon.

The brewing session went smoothly, although fermentation stopped shortly after ramping the temperature to 85°F (29°C). I wasn't sure if the Mangrove Jack's yeast had pulled the classic saison stalling stunt, but a hydrometer check of 1.004 confirmed that fermentation was complete. I then added the puree, which raised the gravity to 1.013, and kegged about a week later.

At first, I wasn't sure what to make of the taste. The peachy aromas and flavors were outstanding. The biscuity quality of the Briess Honey Malt definitely added a certain *je ne sais quoi*. However, I wasn't sure what to make of the saison's murky appearance. Karol immediately dubbed it a "New England saison." One friend remarked that it was delicious and told me not to worry (where have I heard that before?). Although not a sour, it reminded him of one of the fruit beers from the renowned Drekker Brewing in Fargo. A fortuitous email from Boiron then confirmed our suspicions, announcing that "smoothie beers were all the rage." The peach saison was what it was: cloudy and delicious.



FERMENTING IN A KEG

Limiting beer's exposure to oxygen is crucial for making IPA, especially NEIPA. I have the luxury of conical fermenters and closed transfer to a corny keg. Many homebrewers don't, but fear not. Fermenting in corny kegs can work just as well at a fraction of the cost.

First, cut the liquid tube so that it remains above the trub and hops, and add a blow-off line to the corny's CO₂ port. Ferment as usual, and quickly add dry hops when needed, taking care to purge with CO₂ if fermentation isn't active. Spunding valves work great in concert with corny keg fermentations. When fermentation is complete, cold crash the keg in a fridge and pressure transfer to another keg. Easy peasy.

Sometimes, I have a tough time naming my homebrews. Again, Karol stepped up, naming it Princess Peach, apparently of Super Mario fame. The Princess proved to be a big hit at several gatherings and club meetings.

A SOFT GLOW

Going in, I knew brewing an IPA from the Expo swag would be mandatory. But what kind? When I spied a stash of Briess Blonde RoastOat Malt, the choice of a New England IPA became a no-brainer. A similar Simpson's malt, which enhances oaty flavor



and adds a creamy mouthfeel, is a standard addition to my NEIPAs.

Just for kicks, I added a touch of Briess Honey Malt to my standard Carapils and flaked oats additions, to go with a Simpson's Golden Promise base, although any quality two-row malt would suffice. I aimed for a reasonable original gravity of 1.065 for drinkability and mashed at 154°F (68°C) for a bit more body.

Karol and I had obtained a literal Christmas cornucopia of hops: cans of Galaxy, Vic Secret, Eukanot, and Azacca from Yakima Valley Hops; Bravo and experimental X13459 from Hopsteiner; Polaris, Zamba, Sabro, and Citiva from BSG; and an 8-ounce pack of Belma (which always makes me think of Scooby-Doo's Velma) from Hops Direct. It was tough narrowing the selection to only three hops. Azacca, an old favorite, paired with newbies (for me) Sabro and Belma were the winners, chosen for their combination of tropical flavors.

I usually ferment my hazy with Hornindal kveik, a strain that perfectly complements fruit-forward hops. However, I had a close match with the Omega dry Kveik Lutra yeast found in the conference swag bag. I'd read that Lutra's neutral flavor profile made it more suitable for pseudo-lagers, and I'd been wanting to try it for some time. However, it always seemed to be out of stock. Thus, I rolled the dice and gave Lutra a try.

Magnum is my standard bittering hop. I adjusted the dose to about a third of the total IBUs and then added all those free Expo hops late, as a 15-minute whirlpool and again for dry hopping a few days later.

My Expo Hazy was well received at a club meeting. Tasters liked its soft, pillow-like body and flavors of mango and grapefruit with hints of lime.

HEADY, WITH A TOUCH OF MELLOW SMOOTHNESS

I needed one more homebrew for an Expo hat trick, something off the wall and a little





Princess Peach

Peach Saison

Recipe by Mark and Karol Pasquinelli

Batch volume:	4.50 US gal [17 L]	Bitterness:	20 IBU
Original gravity:	1.065 [15.9°P]	Color:	12.7 SRM
Final gravity:	1.013 [3.3°P]	Alcohol:	6.9% by volume
Efficiency:	75%		

MALTS

6 lb.	[2.70 kg] Weyermann Pilsner malt	12 oz.	[340 g] Great Western Malting
1.75 lb.	[0.79 kg] Briess Honey malt	Munich malt	
		8 oz.	[227 g] Canada Malting Wheat malt

HOPS

0.3 oz.	[8.5 g] Magnum 12.2% a.a. @ 60 min		
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YEAST

1 pack	[10 g] Mangrove Jack's M29 French Saison		
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ADDITIONAL ITEMS

0.5 tsp.	Wyeast Nutrient @ 10 min	0.5 lb.	table sugar [sucrose] @ 5 min
1 tablet	Whirlfloc @ 10 min	2 cartons Boiron peach puree [33 oz.]	secondary

BREWING NOTES

Add 1 tsp. calcium chloride to mash to adjust for soft water or adjust to your water profile. Mash at 150°F (66°C) for 60 minutes. Sparge to collect 4.75 gal (18.0 L) and boil for 60 minutes, adding hops as directed. Chill to 68°F (20°C) and ramp temperature to 85°F (29°C) over three days, and ferment to completion. Add peach puree, gently stirring, and condition for one week. Cold crash to 38°F (3°C) and keg or bottle carbonate at 2.5 vol. (5 g/L) CO₂.

EXTRACT VERSION

Steep honey malt, wheat, and Munich malts at 155°F (68°C) for 60 minutes in 4.75 gal. (18.0 L) of water, add 3.75 lb. (1.70 kg) Pilsner DME, and follow all-grain directions from boil. Top off volume if necessary.

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decadent—dark—that would contrast with the saison and NEIPA. I’m a sucker for big beers, and a container of Amoretti flavoring instantly had visions of a s’mores pastry stout dancing in my head.

To maximize the s’mores flavor, I reduced the recipe to 3 gallons, which, for someone watching his calories, is plenty. For a solid, malty backbone, I used Muntons Maris Otter as a base. From the Briess booth, I added Extra Special Malt—analogous to Special B, one of my favorite specialty malts—and Dark Chocolate Malt. To round out the recipe, I reduced my usual percentage of roasted barley and added lactose for body and sweetness.

Even though I was brewing a pastry stout, I tried to show restraint (a problem of mine) with an original gravity of about 1.105, so it wouldn’t be ridiculous, and pegged the IBUs at 40, just enough to keep the sweetness in check.

According to Amoretti, its S’mores Artisan Natural Flavor delivers “the comforting flavor of rich chocolate, creamy marshmallow, and earthy graham cracker.” Therefore, I resisted additional additions of cocoa, marshmallows (I’ve heard they make an awful mess), or graham crackers—so the s’mores flavor would derive solely from the Amoretti.

Even though the recipe was for 3 gallons, it was also high gravity, so I fermented with two packs of Mangrove Jack’s M15 Empire Ale dry yeast, chosen for brewing full-bodied ales. I fermented at 68°F (20°C).

I’d used Amoretti products before with success, and this one was no exception. Gimme Some More Stout poured slowly, its rich, decadent body readily apparent. Chocolate flavors dominated, with a background note of graham cracker and hints of marshmallow at the finish. This is a perfect after-dinner brew—almost dessert. If one wishes to enhance the supporting flavors, more Amoretti could be added, but that’s a judgement call.

A YEARLY BACCHANALIA

I left Pittsburgh and Homebrew Con, my Briess bags filled with Expo swag, knowing all was well in the homebrewing world—that I’d experienced the greatest gift, Christmas in June, any homebrewer could ever receive. Before I knew it, I was cranking out magical new recipes with my freebies, like Ralphie—pinning ducks on the wing and getting off spectacular hip shots with his Red Ryder BB gun.

Christmas in June will be here very soon, this time in sunny San Diego. Be sure to take advantage of all the 45th annual conference has to offer—and don’t forget about the Homebrew Expo booty. I triple-dog dare you.



Gimme Some More Stout

Pastry Stout

Recipe by Mark and Karol Pasquinelli

Batch volume: 3.0 US gal [11.4L]

Original gravity: 1.106 [21.1°P]

Final gravity: 1.038 [9.5°P]

Efficiency: 70%

Bitterness: 41 IBU

Color: 46 SRM

Alcohol: 9.2% by volume

MALTS

9.5 lb. [4.31 kg] Muntons Maris Otter malt

12 oz. [340 g] Briess Dark Chocolate malt

12 oz. [340 g] Briess Extra Special Malt

8.0 oz. [227 g] Briess Roasted Barley

HOPS

0.60 oz. [17 g] Magnum 12.2% a.a. @ 60 min

YEAST

2 packs [20 g] Mangrove Jack’s M29 Empire Ale

ADDITIONAL ITEMS

0.5 tsp. Wyeast Nutrient @ 10 min

1 tablet Whirlfloc @ 10 min

12 oz. [340 g] Lactose @ 5 min

4 oz. [113 g] Amoretti S’mores Artisan Flavor, secondary

BREWING NOTES

Add 1 tsp. calcium chloride to adjust for soft water or adjust to your water profile. Mash at 155°F (68°C) for 60 minutes. Sparge to collect 3.75 gal [14.2 L] of water and boil 60 minutes, adding hops as directed. Chill to 68°F (20°C) and ferment to completion. Add s’mores flavoring and allow to condition for one week before cold crashing to 38°F (3°C). Keg or bottle carbonate at 2.3 vol. [4.6 g/L] CO₂.

EXTRACT VERSION

Steep specialty grains for 30 minutes at 155°F (68°C) in 3.75 gal [14.2 L] of water, add 5.5 lb. [2.49 kg] light DME, and follow all-grain recipe from boil. Top off volume as necessary.

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.



Expo Hazy

New England IPA

Recipe by Mark and Karol Pasquinelli

Batch volume: 5.0 US gal [18.9 L]

Original gravity: 1.064 [16.1°P]

Final gravity: 1.018 [4.6°P]

Efficiency: 75%

Bitterness: 45 IBU

Color: 6.3 SRM

Alcohol: 6.2% by volume

MALTS

11.5 lb. [5.22 kg] Simpson’s Golden Promise malt

1.0 lb. [0.45 kg] Briess Golden Roast Oat malt

12 oz. [340 g] Briess Carapils malt

12 oz. [340 g] flaked oats

4 oz. [170 g] Briess Honey Malt

HOPS

0.40 oz. [11 g] Magnum 12.2% a.a. @ 60 min

2.0 oz. [57 g] Azacca 14.6% a.a. whirlpool

15 min @ 180°F (82°C)

2.0 oz. [57 g] Belma 9.5% a.a. whirlpool

15 min @ 180°F (82°C)

2.0 oz. [47 g] Sabro 15.8% a.a. whirlpool

15 min @ 180°F (82°C)

1.5 oz. [47 g] Azacca 14.6% a.a. dry hop

3 days into primary fermentation

1.5 oz. [47 g] Belma 9.5% a.a. dry hop 3 days

into primary fermentation

1.5 oz. [47 g] Sabro 15.8% a.a. dry hop

3 days into primary fermentation

YEAST

1 pack [11 g] Omega Lutra Kveik

ADDITIONAL ITEMS

0.5 tsp. Wyeast Nutrient @ 10 min

BREWING NOTES

Adjust water profile to a 175:75 chloride to sulfite ratio. Mash at 154°F (68°C) for 60 minutes. Sparge to collect 5.75 gal [21.8 L] and boil 60 minutes, adding hot side hops as directed. Chill to 85°F (29°C), adding dry hops as directed, and ferment to completion. If possible, dump hops, cold crash to 38°F (3°C) and close transfer by CO₂ to keg, or bottle. Carbonate at 2.5 volumes [5 g/L] CO₂.

EXTRACT VERSION

Steep specialty grains for 30 minutes at 155°F (68°C) in 5.75 gal [21.8 L] of water, add 7.0 lb. [3.18 kg] light DME, and follow all-grain recipe from boil. Top off volume if necessary.



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

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

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



ON THE WEB

For more detailed info, head over to HomebrewersAssociation.org and dive into our How to Brew resources.

BREWING WITH ZYMGURGY

MAKING WORT

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

might include a water profile. If you can't (or don't want to) deal with water chemistry, don't worry about it: just go ahead and brew! Extract brewers needn't add minerals to water.

Malt Extract Recipes

Making wort from malt extract is easy.

- Crush specialty grains, if any.
- Place milled grains in a mesh bag and tie it off.
- Steep bag of grains in 150–160°F (66–71°C) water for 30 min. in your brew pot.
- Remove bag of grains from the pot.
- Fully dissolve extract in the hot, grain-infused water (if there are no specialty grains in the recipe, you can skip directly to this step).
- Top up with water to your desired boil volume. (Leave some room for foam!)



All-Grain and Partial-Mash Recipes

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

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

Partial-mash recipes make the same assumptions but use a smaller amount of grain and augment the wort with malt extract.

BOILING

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



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

Brew Lingo

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

AA – alpha acid

ABV – alcohol by volume

AHA – American Homebrewers Association

BBL – US beer barrel (31 US gal or 117.3 L)

BIAB – brew in a bag

BJCP – Beer Judge Certification Program

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

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

DME – dry malt extract

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

DO – dissolved oxygen

EBC – European Brewing Convention (beer color)

FG – final gravity

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

HERMS – heat exchange recirculating mash system

HLT – hot liquor tank

IBU – international bitterness unit

LHBS – local homebrew shop

°L – degrees Lovibond (malt color)

LME – liquid malt extract

LTHD – Learn to Homebrew Day

MLT – mash-lauter tun

NHC – National Homebrew Competition

OG – original gravity

°P – degrees Plato (wort/beer density)

RIMS – recirculating infusion mash system

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

SG – specific gravity (wort/beer density)

SMaSH – single malt and single hop

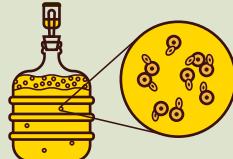
SMM – S-methyl methionine, precursor to dimethyl sulfide (DMS)

SRM – Standard Reference Method (beer color)

FERMENTING & CONDITIONING

Pitch yeast into chilled, aerated or oxygenated wort.

- Use twice as much yeast for lagers as you do for ales.
- Ales ferment at 60–70°F (15–20°C). Lagers ferment at 45–55°F (7–13°C).
- Condition ales at room temperature or colder for a week or two.
- Condition lagers at close to freezing for several weeks if you can (traditional but not required).



BOTTLING & KEGGING

If you bottle,

- Use 1 oz. of dextrose (corn sugar) per gallon of beer (7.5 g/L) for a good, all-purpose level of CO₂.
- Use less sugar for less fizz.
- Take care with higher carbonation levels—many single-use beer bottles aren't designed for high pressure.



If you force carbonate in a keg,

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



- Add 0.5 psi (35 mbar) for every 1,000 feet (300 meters) you live above sea level.
- To convert psi pressures to mbar, multiply by 69.
- To convert volumes of CO₂ to g/L, multiply by 2.

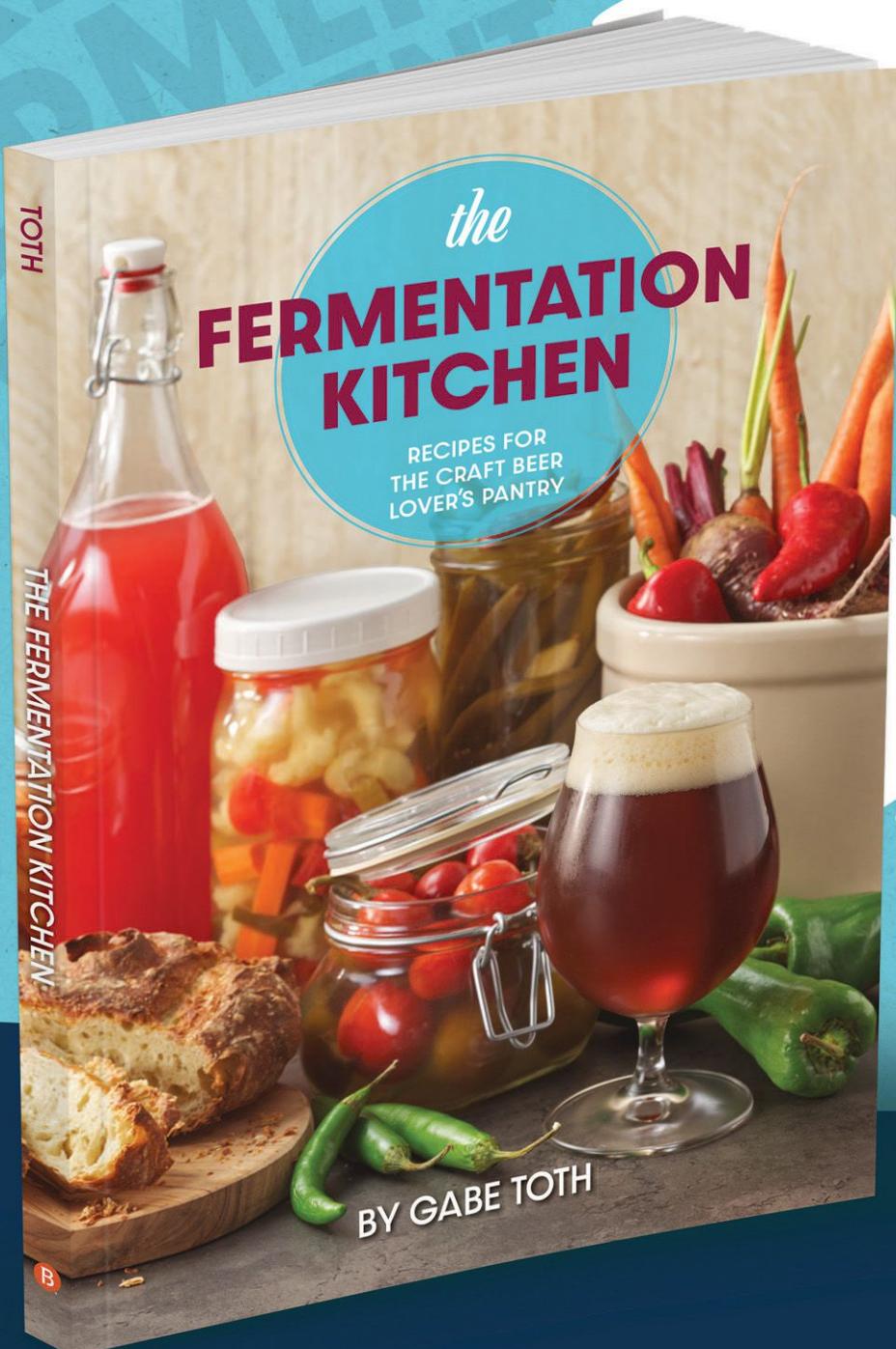
REGULATOR PRESSURES (PSI) FOR VARIOUS CARBONATION LEVELS AND SERVING TEMPERATURES

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

■ = PSI

Source: Brewers Association Draught Beer Quality for Retailers

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Nachbier

The Small Beers of Germany

“There shall be in England seven halfpenny loaves sold for a penny:
the three-hooped pot shall have ten hoops and I will make it felony to drink small beer.”
—Shakespeare, *Henry VI, Part 2*, Act 4, scene 2

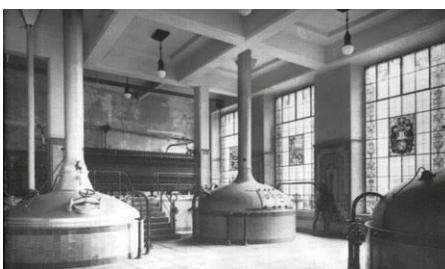
By Jan Brücklmeier

Beer drinkers often associate the British Isles with small beers. With low alcohol content and a relatively low price, small beers were a part of the daily lives of the poor and working classes in medieval Britain. However, Germany was also once home to small beer as a source of safe hydration and nutrition for a large portion of the general population.



DÜNNBIER OR NACHBIER

The German term *Dünnbier* literally means “thin beer,” which is exactly what it was. The term *Nachbier*, which can be used interchangeably, alludes to how the beer was brewed. The German prefix *Nach-* means “post-” or “after-” and refers to the fact that the wort for the small beer was collected after the wort for the main beer. In German, the first runnings, from which the main beer was brewed, is called *Vorderwürze*, and the sparge water is called *Nachguss*, which means something like “post-infusion” or “post-brew.” Accordingly, the *Nachbier* was made from the *Nachguss* in a batch-sparge process.



Brewhouse at Brauerei Naumann, Leipzig, 1920.

SMALL BEER AND PARTIGYLE

Another reason many associate small beers with the British Isles and not Germany is the way those small beers were brewed. Small beers were commonly made from the last runnings of a partigyle mash. British brewers were well known for partigyle methods, while German brewers were better known for decoction mashing. However, one doesn’t preclude the other. The Bavarian small beer called *Scheps* was brewed with spent grains that had already undergone a decoction protocol.



Haldengut brewery, Winterthur, Switzerland, 1913.

Actually, the partigyle or batch-sparge method was, for a long time, the only legally permitted process in some areas of Germany for at least some period of time. As is so often the case, the reason was tax money. Authorities wanted to control how much beer was brewed in order to levy taxes accordingly. This was why in some areas, such as Bavaria, a tax was levied on malt, and the amount of malt required to produce a certain amount of beer was directed by law. Brewing small beers with the re-use of the spent grains would have made it much more difficult to police the tax laws, which date to 1543.

On the other hand, beer was often the sole source of clean hydration, and normal-gravity beer was expensive, especially in times of crop failure or war, when grain supplies were tight. Consequently, many exceptions to “anti-small-beer laws” were granted to ensure the supply of beer. To avoid illegal activities and to keep trading with beer strictly separated from the small beer, in most areas and periods, brewers were not allowed to sell small beer to pubs and inns, where innkeepers could have mixed it with regular beer. They were only allowed to sell it directly, use it for their workers, use it to produce vinegar, or give it away for free. The oldest law I found mentioning small beer in Bavaria dates to 1750.

The so-called *Biersatzregulativ* in Bavaria, for example, dictated the amount of malt a brewer must use to brew a certain amount of beer as well as the price the beer must be sold for. Beer quality and beer supply were important responsibilities of public administration. Since small beer fell outside of these limits, production and trade were organized with different laws and regulations.



Boarischer Scheps (Bavarian Scheps)

Modern recipe based on historic sources.

Batch volume:	5 US gal [18.9 L]
Original gravity:	1.014 [3.5°P]
Final gravity:	1.004 [1.1°P]
Efficiency:	56%
Color:	3.6 SRM (7 EBC)
Bitterness:	15 IBU
Alcohol:	1.3% by volume
Apparent attenuation:	71%

MALTS

- 25 oz. [700 g] Munich malt, 25 EBC (10°L)
25 oz. [700 g] beechwood-smoked malt, 7 EBC (3°L)
5 oz. [120 g] dark wheat malt, 18 EBC (7°L)

HOPS

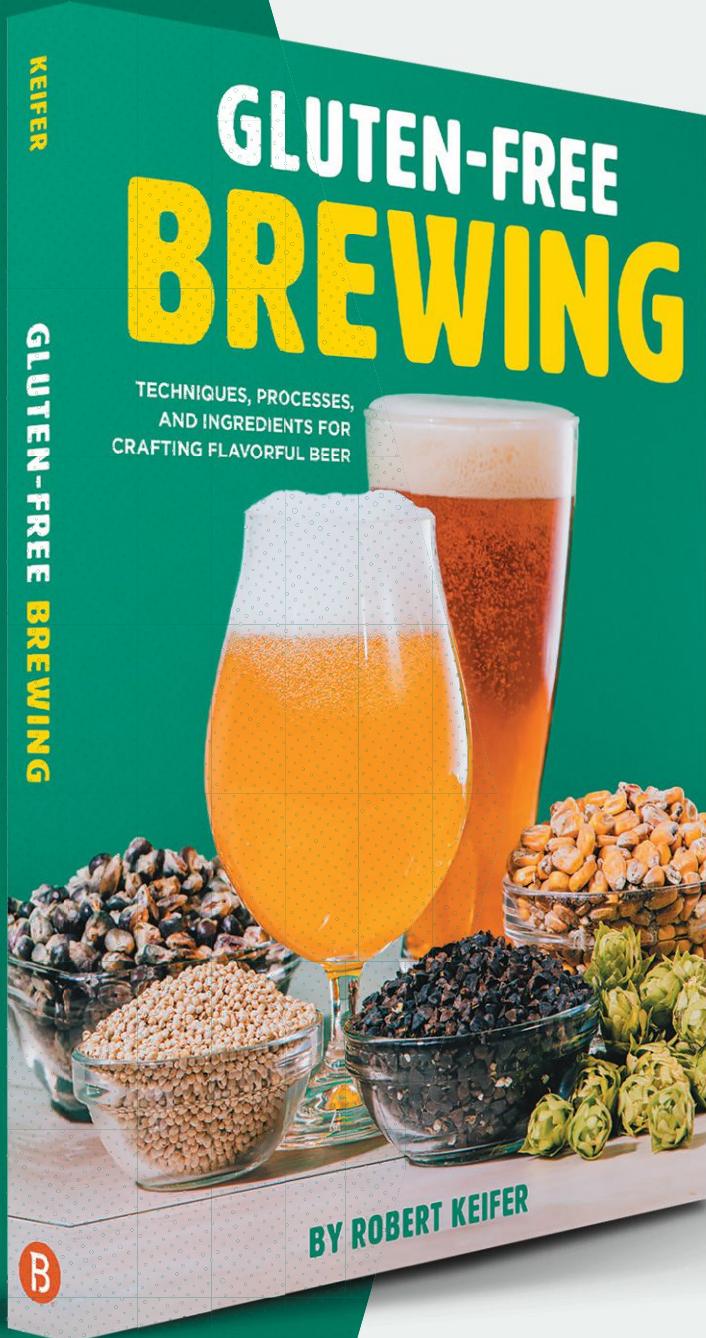
- 0.5 oz. [14 g] Hallertauer Mittelfrüh, 4% a.a. @ 60 min
0.5 oz. [14 g] Hallertauer Mittelfrüh, 4% a.a. @ 5 min

YEAST

Fermentis SafLager W-34/70 or White Labs WLP920 Old Bavarian Lager Yeast

BREWING NOTES

Mash in with 1.5 gal. [5.7 L] water at 68°F [20°C] and rest at 68°F [20°C] for 60 minutes. Slowly add 3.5 gal. [13.2 L] of 203°F [95°C] water while stirring the mash continuously to avoid hot spots. The temperature in the mash should stabilize at around 162°F [72°C]. Rest for 45 minutes. Lauter, boil with hops, cool to 50°F [10°C], oxygenate, and pitch yeast.



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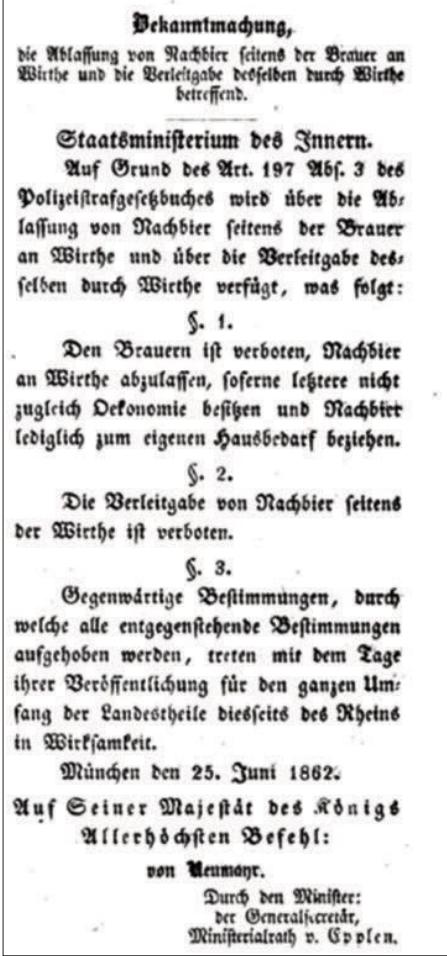
Proclamation of the Department of the Interior

§1: Brewers are forbidden to sell small beer to innkeepers unless they also own farms and purchase the beer for their own use.

§2: The sale of small beer by the innkeeper is prohibited

Munich, June 25th 1862

By His Majesty the King's supreme command



Bavarian beer regulation from 1862. A portion of the text translates as follows:

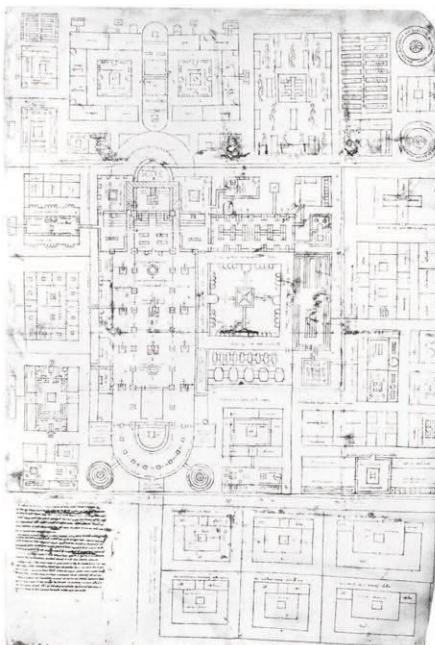
Such laws were in place in Bavaria until 1865, after which time brewers were free to set the beer price.

My research showed similar laws for other areas of Germany. In Northern Germany a small beer called Nösterbeer was brewed and, as in Bavaria, the brewer gave it away for a low price or even for free to the poor and the sick.

THE PADRES BEER AND THE PILGRIM

One of the earliest sources for small beer brewing can be found in abbeys across the

German-speaking parts of Europe. Monks brewed their own beer, often referred to as the *padres* beer. They then used the spent grains for a small beer, the so-called *Konfent*, or convent beer, which they gave away for free to pilgrims, lay brothers, and the poor. A layout of the Abbey of Saint Gall in what is now Switzerland, from around 800, shows three breweries: the abbey brewery for the monks, one attached to the poorhouse, and a third brewhouse close to the guest house (see below).



The layout of the Abbey of Saint Gall, ca. 820.

NACHBIER BREWING

One famous small beer was the so-called Heinslein or Hansla brewed in Bamberg. The brewer Johann Adam Messerschmitt described the importance of the beer in 1836: "This drink is such a need that it may here be said to come next after bread for the working and poor classes." To put this in perspective, about half of the beer brewed in Bamberg was Hansla. In 1854, Bamberg had a population of about 22,000 and an annual production of nearly 258,000 gallons of this specific small beer.

The Bamberg brewing process was very different from that in the rest of Bavaria, and the reason could be the Bambergers' preference for small beer. The reason is obvious. The Hansla beer was an ideal and, above all, safe thirst quencher that only cost about a fifth of normal beer. While the brewers in most areas of Bavaria practiced decoction to extract malt sugars as efficiently as possible, brewers in Bamberg brewed with infusion, i.e., the mere sparging of the malt with hot water. This left a lot of extract in the malt for brewing Hansla afterwards.

The normal *Schenkbier*, or tavern beer, was brewed using about 3 pounds of malt per gallon with a brewhouse efficiency of around 43 percent. The spent grains were then mashed in again and yielded between 28 and 41 fluid ounces of small beer per 10 pounds of initial grain bill. Besides the spent hops, between 0.2 and 0.7 ounces of fresh hops were added during the boil of the small beer.

The small beer produced this way had an original gravity of 1.016 to 1.020 and a final gravity of 1.008 to 1.010, resulting in an alcohol content of around 1% to 2% by volume. Depending on the original beer, the color could vary from pale to somewhat brownish.

MODERN-DAY VERSIONS

Following the trend of less alcoholic beers, a couple of breweries started revitalizing old small beer styles. One of them is the brewery Heller-Trum, in Bamberg, known for its famous Schlenkerla rauchbier (smoked beer). After 120 years, they started to brew Heinzelein again in 2020, based on a recipe Matthias Trum, the current brewmaster, found in the notes of his great-great-grandfather Konrad Graser.



2005 Heinzelein

Born and raised in Munich, half a mile away from Oktoberfest and the Augustiner brewery, and with one grandmother in the beer business and the other a former pub owner, Jan Brücklmeier's destiny was almost predetermined. He brewed his first batch of beer in the late 1980s and made his passion a profession when he studied brewing sciences and beverage technologies at the world-famous beer university, Weihenstephan, from which he holds a master's degree. Jan has written two books about homebrewing and beer.



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Thrive and Excel with Nature's Deepest Connections (Or Why I Started Homebrewing)

I won't lie. I would never have started homebrewing had I not started working for Fermentis. But here I am. And if I can do it, so can you.

It would have never crossed my mind to brew my own beer. I never really used to drink that much of it, and all beer used to taste the same to me. I imagined brewing to be a difficult, complicated process, and I am not a scientist. I am a marketer.

Fermentis hired me four years ago to promote and communicate everything we do, to build brand awareness for the new and exciting products we bring to market. Having worked for more than 20 years in marketing, I know you can't sell or promote something you don't really know, and my brewer colleagues' passion and enthusiasm when they talked about their latest brews made me curious. I have to admit that I made fun of them a bit and found it hilarious that anyone could talk about beer, styles, and yeast for hours at a time.

Even harder to believe was that everything they said was true, that a small microorganism could not just make alcohol but also influence the flavor of a brew. It all sounded intriguing, yet it remained a mystery to me. I needed to change this, so I started researching what yeast was and where it came from. I was surprised to find out that it belongs to the fungus family.

Parallel to my own research and curiosity about yeast, the world of fungi was getting a lot of attention at the time. It still does thanks to continued discoveries about its co-evolution, symbiosis, and many health benefits. The Netflix documentary *Fantastic Fungi* left me in awe of the microorganism I had started to respect and love.

I became proud to work at a yeast company and cultivated a growing enthusiasm for education and offering insights into this special microorganism. I realized I had to brew to really understand how fermentation worked. I had used yeast many times in baking, but realizing it could also ferment beverages and make them more delicious fascinated me. I started watching YouTube videos on homebrewing, got a book, and finally bought the essential homebrewing equipment.



I started in my kitchen when a colleague and friend came by to guide me through my first brew, and it was easier than I thought it would be. I will never forget that first batch, which was drinkable but far from perfect (thankfully, my boyfriend drank it in spite of its mediocrity). I became hooked on brewing, and I kept brewing one beer after another—like anything in life, practice makes perfect.

After two years of practice, I won an honorable mention at Fermentis's internal homebrew competition for my fruit beer Mucho Mango, a tropical ale that can transport you to a warm beach even on the coldest Wisconsin day. I felt proud and honored, especially because I had competed with former professional brewers and fermentation scientists. All entries were judged blindly by our sensory and analysis team.

Brewing has taken center stage in our household. I am originally from Germany and immigrated to the US when I was 25

years old. Still today, I try to keep German traditions alive with my daughters, and brewing fits that well. As a German expat living in Wisconsin, I have a sauna in the backyard. Brewing is quite a long process that requires patience, and brew day has become our sauna day—while our wort boils, we boil in the sauna.

It has also become a family activity. We feel it is appropriate to teach our daughters about fermentation and how to make beer in their teenage years. While they help us brew, we teach them about the effects of alcohol and how it should be consumed responsibly. I feel that demonstrating the love and work that goes into our brews shows exactly that, that it is a special craft and needs to be treated that way.

Most anything consumed excessively can harm your health, and beer is no exception. Yet we feel that if you learn every step of the process and appreciate the science that goes into making something, you gain respect for what you do and also how you consume it. In Germany, consumption of beer is permitted at age 16, and in our home state of Wisconsin, drinking is also permitted if a parent is present. I didn't know about Wisconsin's law before I started brewing, but we don't encourage our girls to drink with us. They can try and smell beer, but that's about it, and they are very content with that.

I always encourage my girls to learn a craft such as brewing—one never knows what will happen in life, and maybe it will come in handy one day. At the moment, they don't want to hear anything about it: one wants to become a neuroscientist and the other an electrical engineer.

Whatever they choose, though, humans will never stop drinking beer, one of the world's oldest drinks. The first chemically confirmed barley beer dates to the fifth millennium BCE in modern-day Iran. It was recorded in the written history of ancient Egypt and Mesopotamia and spread throughout the world, and I don't see us stopping any time soon. *Zum Wohl!*

Stefanie Roedenbeck is communications manager for the Americas at Fermentis.



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