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PURSUE WHAT'S POSSIBLE

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Some sort of
“kitchen sink” brew
using my box of
misfit ingredients.

I'm definitely brewing more
beer. I recently kegged
a peppermint porter and
brewed a Belgian blonde
fermented with kveik yeast.

Bohemian-style Pilsner,
sourdough rye bread,
and a keg washer.

Duncan

Gary

Dave

First and foremost,
homebrew. Also
trying my hand at
baking and cheese.

Megan

With a one-year-old,
I'm usually just
making a mess.

Emily

John

Jambalaya and
homemade ricotta!

Matt

Hefeweizen, kombucha, pickles, baked
goods, and all the comfort food!

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THE MAGAZINE OF THE AMERICAN HOMEBREWERS ASSOCIATION®

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Keep Calm and Brew On

Well, here we are. I don't know what the public health landscape will look like when this issue of *Zymurgy* lands in your hands or on your screen. We don't even know what to expect next week or tomorrow, so please forgive us if anything written in this issue of the magazine is woefully outdated when you read it. Given the rate at which things are changing, there's a good chance something will be old news.

I live in Fort Collins, Colo., a city of about 165,000 people and, at last count, 24 breweries and taprooms. In nice weather, it's common to see legions of beer lovers ride bikes of all shapes and sizes from one brewery to another. The probability that those cyclists will follow straight, predictable tracks is usually inversely proportional to the number of breweries visited.

Not this week. This week, the weather is beautiful—sunny with highs near 70°F—but the streets are quiet. Many store windows bear *Temporarily Closed* signs. Others remain open in theory, but shopping involves a cumbersome phone-in, drop-off, pick-up maneuver that more closely resembles a parking lot drug deal than a legitimate business transaction.

Things are weird, indeed, but there are reasons to remain hopeful.

One shining example is that the need for social distancing has prompted a temporary loosening of beverage alcohol licensing laws in a number of jurisdictions to allow normally on-premises locations to sell alcohol for off-premises consumption. I am personally grateful for the quick, bold action that led to this situation, for without it, my wife and I would not have been able to carry home a pitcher of margaritas with our takeout enchiladas the other night.

Such a relaxation of the liquor laws has also allowed breweries to continue func-



tioning even in the face of zero taproom foot traffic. Many have remained open because beer geeks like you and me refuse to let COVID-19 stand between us and our locally brewed craft beer. So, we order by phone or online and go pick it up. In a few cases, the breweries even bring it right to our houses.

Hopefully by the time you read this, the COVID-19 situation will have begun to improve. But four weeks—four eternally long weeks—must elapse between my writing this and your reading it. Much can still happen.

On a brighter, honey-like note, I'm pleased to introduce the *Zymurgy* Mead Issue. Although conceptually simple, mead often remains mysterious to those who have never tasted it, much less tried to make it. Homebrewers who think nothing of triply decocting, calculating ion concentrations, and building electric-powered brew rigs sometimes find themselves at a loss when they go to whip up their first batch of honey wine.

Why the disconnect? For one thing, mead isn't just mead. Depending on how strong it is and what you add to it, mead changes its name to things like cyser, bochet, metheglin, hydromel, and pyment. And then there's the propensity for mead recipes to specify mysterious protocols like TOSNA, which sounds more like the name of a multinational media corporation than a

way to know what nutrients to add in what amounts and at what times.

So, we've assembled a trio of stories in this issue that span the world of meadmaking. One offers nuts-and-bolts guidance from a professional meadmaker to carry you through the process of turning honey into ambrosia. Another shows us that meadmaking needn't be complicated to be delightful. The third takes us to Israel, where the first BJCP Mead exam in the Middle East was recently held.

Beyond this issue's mead content, you'll find a delightful article on the ins and outs of taking your dog to the taproom, which I suspect—if the photos you send us are any indication—many *Zymurgy* readers will be eager to do when social distancing is a thing of the past. The final feature shows your homebrew club how to legally organize and host a homebrew and food pairing event that'll wow your guests.

I hope this issue of *Zymurgy* offers you moments of joy, inspiration, and entertainment during these surreal, frustrating, frightening times. If restrictions are still in place when you read this, please hang in there, keep calm, and brew on. And if restrictions in your area happen to have been lifted, I hope your elected officials were wise enough to let you keep taking home margaritas, just to be safe.

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

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FIVE STEPS TO BETTER MEAD

Whether you're a novice or a veteran meadmaker, here are five steps guaranteed to improve your mead. Open up new horizons and take your mead to a higher level with this straightforward approach.

By Jason Phelps



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IN PRAISE OF SMALL THINGS

Small mead is the ultimate outlet for spontaneous brewing. Ready to drink in just a few days, it's a great "no worries" summer brew that's readily adapted to include diverse ingredients that reflect every season.



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IN THE LAND OF MEAD AND HONEY

The Homebrewers Guild of Be'er Sheva, Israel, recently organized the Middle East's first BJCP Mead exam. Scott Kurtz traveled there to proctor, take in the culture, and enjoy some excellent mead along the way.

By Scott Kurtz



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DRINK WITH YOUR DOG

Breweries are favorite hangout spots for many dog owners, but bringing Fido doesn't always go smoothly. A novel program is teaching owners and employees how to make taprooms more comfortable for our four-legged friends.

By Amber Quann



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EAT THIS, DRINK THAT

Serving homebrew at a food pairing event lets patrons appreciate the quality of your beer more than they could at a beer festival. Hogtown Brewers of Gainesville, Fla., have brewed up a model any club can emulate.

By Ron Minkoff



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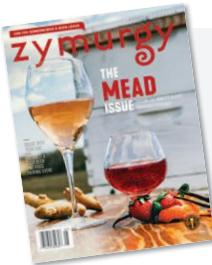


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May/June 2020**zymurgy**[®]

(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

New Product

UKEG GO 64 BY GROWLERWERKS

From the people who brought you the uKeg pressurized growler comes a reimagined beer vessel designed for the outdoors. The uKeg GO 64 from GrowlerWerks maintains carbonation in 64 ounces (1.9 liters) of beer for as long as you can resist the urge to empty it. Double-walled vacuum stainless construction keeps your beverage cold the whole day, making it the ideal companion for socially distancing yourself in the great outdoors.

Like the O.G. uKeg pressurized growler, the uKeg GO 64 relies on 8-gram CO₂ cartridges to maintain carbonation. A locking faucet keeps your beer from accidentally watering the forest while you're en route. Best of all, the uKeg GO 64 weighs just 2.8 pounds (1.3 kilograms), which shaves more than a third off the weight of the original 64-ounce (1.9-liter) uKeg growler.

If the quarantine is keeping you from getting outside with your friends, at least you can get outside with some beer. uKeg GO 64 retails for \$99.00. Learn more at uKegGO.com.



SODZ Celebrates 25 Years

BY JASON WING, SODZ PRESIDENT

The Scioto Olentangy Darby Zymurgists (SODZ), a central Ohio homebrew club, officially celebrates its 25th anniversary this year. SODZ is a nonprofit organization dedicated to supporting and fostering the homebrewing community in Columbus and central Ohio. The club has more than 150 paid members and meets monthly at breweries around town. In addition to meetings, the group organizes a number of events throughout the year.

SODZ supports two annual homebrewing competitions: British Beerfest and Beer for Boobs. The latter benefits breast cancer awareness—Beer for Boobs VIII was held last November and featured 218 entries and 103 entrants, judges, and stewards. We are also heavily involved in the Ohio State Fair homebrew competition.

The 2020 British Beerfest, which was to be held jointly with the Delaware Ohio Homebrewers (DOH) in May, unfortunately had to be canceled due to the COVID-19 outbreak. This annual homebrew competition began as a way to celebrate and encourage brewing English-style ales that were not readily available commercially. We typically receive entries from all over the US.

We also organize Iron Kettle, an annual club event where homebrewers show up in the morning with their equipment and are given a secret ingredient they must incorporate into a beer. It's a fun, unique event where creative homebrewers have to quickly design a recipe and execute it while incorporating something like doughnuts or coconut. An informal competition is held at the club's annual summer picnic to determine who brewed the best Iron Kettle beer.

Each monthly meeting features a small club-only competition based on a different theme. For example, January's Beermageddon competition required that entries be at least 8% ABV. February was British Invasion. The ultimate goal is to win Brewer of the Year—each month you enter offers a chance to earn points by placing first, second, or third in the competition. You can also get points for victories in the Columbus-based homebrew competitions and in the National Homebrew Competition.

SODZ has entered into a barrel project with two other homebrew clubs from Ohio: the Cincinnati Malt Infusers (CMI) and the Dayton Region Amateur Fermentation Technologists (DRAFT). Each club gets a whiskey barrel and is collectively brewing a Russian imperial stout, with the eventual goal of sharing and comparing each club's beer.

Last November, we brewed a collaboration beer with Nocterra Brewing Co. called Something in Common to celebrate Learn to Homebrew Day. The same day, members of SODZ and Homebrewers of Powell (HOP) set up their gear next to Nocterra and did some brewing! Something in Common was released in cans and on draught at Nocterra, and Nocterra even let SODZ design the label!

A number of SODZ members have made the decision to go pro and open commercial breweries, including Ill Mannered Brewing Co., Restoration Brew Worx, The Brew Brothers, and Lineage Brewing.

SODZ is active, strong, and full of people interested in making good beer. Our members have enjoyed our events for 25 years, and we look forward to what the future will bring for the club.



Support Your Local Homebrew Shops

If we hear anyone say *unprecedented* and *abundance of caution* one more time, we might scream. Nonetheless, the ongoing COVID-19 pandemic is the former, and the latter is a critical tool in beating it.

Homebrew shops are the cornerstone of the homebrewing community, and they need our help. As COVID-19 forces more and more people to remain home, many businesses—including our local supply shops—are facing the challenges that come with decreased foot traffic and the ability to carry on typical retail operations.

Luckily, there are still ways we homebrewers can support our local shops during this challenging time. Here are some easy ways to show shops we are here for them despite the challenges they are facing.

BREW MORE

Stuck at home? Plan to brew some beers! In addition to the extensive archive of recipes available in the Zymurgy archives, HomebrewersAssociation.org offers tutorials and recipes for you to browse. Once you pick a recipe, find your local homebrew shop in the HomebrewersAssociation.org directory.

PLACE AN ORDER FOR PICKUP OR DELIVERY

Like many of your favorite restaurants and breweries, some brick-and-mortar homebrew shops remain open for pickup orders. Check your local homebrew shop's website and social media accounts, or give them a call to see if this is being offered. If your local shop offers pickup orders, be sure to follow their guidelines to ensure a safe experience during the transaction. We recently added a new page to the AHA website that lists shops offering delivery and curbside pickup. Visit HomebrewersAssociation.org/COVID-19 to learn more.

ORDER SUPPLIES AND INGREDIENTS ONLINE

While social distancing measures and mandated closures keep many homebrew shops from opening their doors to customers, some still offer the option to order online. Whether you need ingredients or a piece of equipment, placing an online order with your favorite homebrew shop is a great way to support a business during a challenging time while being safe and responsible. The new directory at HomebrewersAssociation.org/COVID-19 has all the details.

BUY A GIFT CARD

If you're not in a position to brew while social distancing, you can still support your local homebrew shop by purchasing a gift card for yourself or a friend. Many homebrew shops offer digital gift cards online, and a gift card is a great way to infuse your shop with some much-needed cash now. Think of it as putting beer in the bank for your future self.

LEAVE AN ONLINE REVIEW

Maybe you're not one to usually leave an online review, but there's no better time than now to spend a few minutes telling the world why it should visit your favorite homebrew shops. Google, Yelp, and Facebook are all easy platforms for leaving reviews.

INTERACT WITH SHOPS VIRTUALLY

We live in an age where we can still be social while being isolated, and social media is a great way to show the local homebrew shops you're thinking of them. Simply liking and sharing posts is a great start, or you can comment and post to show your support. Many shops are on Facebook, Twitter, and Instagram.



While you're at it, don't forget to support your local breweries as well. Many continue to offer beer to go in cans, bottles, crowlers, and growlers, and relaxed alcohol regulations in many states make takeaway pints a reality. If you have a home draught system for your homebrew, all you need is a Sankey coupler and a couple of tailpieces to tap a sixtel or quarter barrel of fresh beer using equipment you already have. And don't forget gift cards! Buy now, enjoy later.

New Book

HISTORICAL BREWING TECHNIQUES: THE LOST ART OF FARMHOUSE BREWING

BY LARS MARIUS GARSHOL

This excerpt is taken from Chapter 1 and has been condensed for length.

Kaupanger is a small village deep in the fjord country of western Norway, about 80 kilometers into the Sognefjord from the sea. Just before Christmas 2013, I was invited to come to Kaupanger to see a group demonstration of farmhouse ale brewing. I was just beginning to study farmhouse ale, so I jumped at the chance, never having seen it brewed before.

The brewer was Carlo Aall, who moved to Kaupanger in 1992. The brewhouse was a room at the end of a barn, with a concrete floor and two fireplaces large enough to accommodate two large copper kettles. The walls were darkened by soot, which made it look very dirty compared to modern kitchens and brewhouses. Water was supplied by a garden hose. There were two large plastic barrels, a small table, and a single chair.

Carlo filled the kettle with water and set about getting the fire started beneath it. Meanwhile, he asked me to go out and get some juniper branches from the plastic bag outside the door. Carlo explained that in Norwegian farmhouse brewing, the liquid used for cleaning and also for the brewing itself is not water, but a juniper infusion. You put juniper branches with needles in the kettle and heat the water to make an infusion of juniper. The result is a highly aromatic, very pale green liquid.

But before that, Carlo said, I had to take one of the branches and split it lengthwise, so that we could extract the sap from the wood. I had never heard of this before. "Why do you do that?" I asked.

Carlo just shrugged, vaguely embarrassed, and said, "I was told this was important, but not why." Then he was quiet for a while. Finally, he said: "When my mother taught me to cook pork steak, she told me I had to cut off the ends before putting it in the oven. When I asked her why she just said 'that's how we do it.' So, I always did the same. Many years later I asked my grandmother why. 'Oh,' she said, 'that's because our old oven was too narrow.'"

When you learn farmhouse brewing, you are learning a process, a sequence of steps that have to be followed precisely. But nobody knows why the process is exactly the way it is, and nobody knows for certain whether all of the steps are truly necessary or not. The reason is that the process has evolved over several millennia of trial and error and none of the people involved had any knowledge of biochemistry at all.



HISTORICAL BREWING TECHNIQUES

The Lost Art of Farmhouse Brewing

LARS MARIUS GARSHOL



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So, I did as Carlo asked, and while the juniper infusion was heated in the kettle, Carlo found four plastic tubs, which he placed on the floor. We waited for the juniper infusion to reach 80°C [176°F]. The temperature should not go higher, Carlo said, because unhealthy substances would be extracted from the wood. We filled the plastic tubs with ground malt and poured the 80°C infusion over that grist using a scoop, stirring it in with a mash paddle.

Carlo said that when the mash paddle could just barely stand upright in the mash, the ratio of water to grist was right. And the temperature should be 72°C [162°F], he added. That is surprisingly warm, but, as we will see, it is by no means unusual in farmhouse brewing—farmhouse brewers like their beers sweet. It was cold in the brewhouse, so we placed some wooden lids and cloths over the tubs to keep the temperature up. Then we had an hour-long break.

The next step was to prepare a large, tall plastic barrel as the lauter tun. Carlo calls it *rostabidnet*, which he explained means "the tun with

[Continued >](#)



Inside the brewhouse at Amble farm. Part of the cooling basin can be seen on the right.

Photos courtesy of Lars Marius Garshol/Historical Brewing Techniques



Making a juniper infusion.

the grating." In fact, the Old Norse term for the tun was *hrosti*, so the word is more than a millennium old. In the bottom we placed juniper branches, to serve as a filter, and then added a piece of wire mesh on top. Now the mash could be scooped up using a steel bucket and poured into the lauter tun.

Once that was done, Carlo placed the bucket under the tap at the bottom of the barrel and let out the first wort. It was steaming hot and deliciously sweet and rich. The first bucket, Carlo said, had to be poured back into the barrel. I asked why. Carlo just looked at me and said he did not know.

Carlo taught us that the wort should be allowed to run off slowly. The stream of wort coming out of the tap should be "as thick as a woolen thread." There was much fine-tuning of the tap to make the wort flow just right. Every time we poured one bucket of wort into the kettle, we would pour one bucket of juniper infusion into the top of the lauter tun.

Carlo told us that for the amount of malt we were using today he would normally take off about 20 buckets of wort. Once there was enough wort in the kettle Carlo started the fire under it again, to boil the wort. When we were getting close to 20 buckets of wort, Carlo started tasting the wort to see when to stop lautering. Eventually he decided it was time. I tasted the wort and you could tell that most of the sweetness was gone. It still had some body, but it was not very sweet. This was Carlo's gravity measurement.

The wort in the kettle was boiled for an hour. Carlo added hops at intervals, measuring out the additions on an electronic scale he had brought. I asked Carlo which hops he was using, and he said he did not know. The homebrew shop had just given him some hops that were suitable for farmhouse ale. It was at this point that doubts started developing in my mind as to whether this guy actually knew what he was doing, and whether this beer would be drinkable.

Once the boil was over, we placed a primitive sieve made of cloth and wooden sticks over the fermentor, and ladled the wort into the barrel. Carlo used whole leaf hops, so the sieve filtered out the hops. Cooling the wort took hours. In the end, it was getting on for midnight before the yeast was pitched.

A few weeks later, a sample of the beer arrived. It had no real head, just a coarse froth around the edge, because the beer had very little carbonation. The body was opaque, nearly black, and hazy light brown along the edges. The aroma was dominated by notes of juniper and roasty, oily banana, and was really quite pleasant. The flavor

"
The process has evolved over several millennia of trial and error.

was similar, but with an additional smoky element. It was sweet, and obviously strong, with a slightly rough bitterness in the finish. Overall, it was a lovely beer, sweet and strong but surprisingly drinkable. And quite different from modern beer.

When I tasted the beer, I discovered that I could not detect any hop flavor whatsoever. The hops were not there for the aroma or even for the bitterness, but to protect against infection. The actual balancing of the beer through bitterness, and the role of flavor addition, was assumed by the juniper, not the hops.

Later, I realized why Carlo had been taught to pour the first bucket back into the lauter tun. The first bucket tends to be full of haze from the malt dust, and pouring it back in serves to filter the wort one more time, making the beer much clearer. In other words, it was vorlauf—the recirculation of the first runnings—and he was definitely right to do so.



Inside Carlo's brewhouse. Part of the cooling basin can be seen on the right.

Visiting other farmhouse brewers, I learned why it was important that the stream of wort from the tap should be so narrow: the filter is just a fine steel mesh and juniper branches. If you allow the wort to run off too quickly, bits of juniper and even grain will be carried along with the fast-flowing wort and may block the tap. It also makes for clearer beer, and many brewers do it to ensure that their extraction efficiency is high.

The visit to Kaupanger was a big lesson for me. Compared to the homebrewers I knew, Carlo seemed like he did not know what he was doing. And he clearly had no idea why he was doing many of the things he did. But he made excellent beer, because the process he had been taught did work. Because he always brewed the same beer, and had been doing so for 20 years, he knew exactly what to do. The theory, and the reasons why he was doing everything he did, turned out to be unnecessary.



Brew Over

In the Mar/Apr 2020 issue of *Zymurgy*, the Last Drop story incorrectly refers to Adriane and Patrick Hughes. The correct surname is Hodges. We'd blame autocorrect, but it's completely our fault. 

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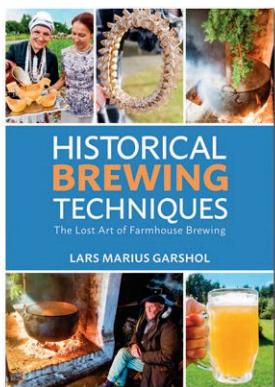


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HISTORICAL BREWING TECHNIQUES: THE LOST ART OF FARMHOUSE BREWING BY LARS MARIUS GARSHOL

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Equal parts history, cultural anthropology, social science, and travelogue, this book describes brewing and fermentation techniques that are vastly different from modern craft brewing and preserves them for posterity and exploration.

// \$24.95

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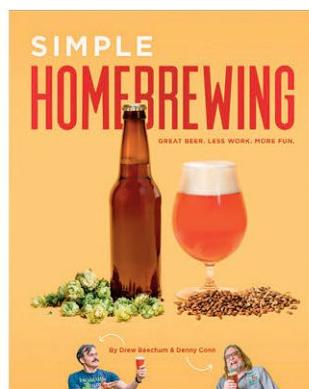


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Homebrewing & COVID-19

A close-up photograph of a hand wearing a bright red nitrile glove. The hand is reaching towards a clear glass filled with a golden-brown beer, which has a thick, white head of foam. The background is blurred, showing what appears to be a wooden structure or furniture.

I find myself revising my column in late March, well after deadline and midway into the second week of mandated work from home due to the spread of the coronavirus. I dare say none of us living today have ever witnessed anything quite like the COVID-19 pandemic.

Between state and local governments restricting activity outside the home and our collective desire to limit the spread of this disease, we are staying home and not congregating. This is particularly tough for those of us who are part of the brewing community, given that beer is an inherently social beverage over which we share conversation with friends and acquaintances.

The impact on homebrewers has been significant as clubs have been forced to cancel or move their meetings online, and competitions and other events have had to be canceled or postponed.



JUNE 18–20
NASHVILLE, TN



NATIONAL HOMEBREW COMPETITION

The AHA had to make the very difficult decision to initially postpone judging the National Homebrew Competition and then ultimately cancel the First Round of the competition. AHA staff and local judge center organizers contemplated many options for moving forward with judging, but none of those ideas would work for all, or even a majority of, judge centers.

It was a heartbreakin decision to have to make, but ultimately we could not justify the risk to the health of judge center organizing teams, judges, stewards, and host businesses that proceeding with judging would have entailed.

Although the AHA offered to refund the competition entry fees of all entrants, we heard from many entrants who, recognizing the AHA had incurred significant expenses to prepare for the First Round of the competition, requested not to have their entry fees reimbursed. I'm sincerely grateful and humbled by this act of generosity by our members. It's truly an honor to serve you.

HOMEBREW CON

As I (re)write this, we continue to move forward with plans to host Homebrew Con in Nashville June 18–20. We are closely monitoring the COVID-19 situation and are getting regular updates from the Centers for Disease Control and Prevention and the City of Nashville. We

“
I’m grateful for my recent therapy sessions with my brew kettle.

have begun exploring options to potentially postpone the event, though nothing is guaranteed at this time.

By the time this issue of *Zymurgy* publishes, the situation will likely have evolved considerably from what I write now. If circumstances demand canceling Homebrew Con, we will of course refund all attendee registrations.

IMPACT ON HOMEBREW SUPPLY SHOPS

We've witnessed the spread of COVID-19 negatively affect many of the local homebrew supply shops that support our community. To assist shops in dealing with the fallout from the disease, the AHA has posted a COVID-19 Resources page to the business section of HomebrewersAssociation.org.

We have also been actively encouraging homebrewers to make use of their extended time at home by brewing more often and purchasing supplies from their local stores, even if that means calling in orders and picking them up at the shop door. I'm doing my part by brewing as often as I have fermenter space available to do so. I'm also buying ingredients from my local homebrew shop in Longmont, Colo.

Looking for other ways to help your local shop during this difficult time? We have set up links on HomebrewersAssociation.org that allow those purchasing new and renewing memberships to select their favorite homebrew shops and have a portion of their dues go to supporting those stores.

On the bright side, we homebrewers have a hobby that we love and that we par-

ticipate in at home, so I sincerely hope you have been able to enjoy a little more time brewing some tasty beers, meads, ciders, wines, whatever, to help put a smile on your face. I know I'm grateful for my recent therapy sessions with my brew kettle.



AHA Membership Coordinator Emily Bishop.

WELCOME AHA MEMBERSHIP COORDINATOR EMILY BISHOP

In November 2019, AHA business programs coordinator Millie Shamburger accepted a position in the events department at the Brewers Association (BA), the AHA's parent organization. We'll miss having Millie on the AHA staff, but we're grate-



ful that she will continue to be involved in Homebrew Con in her new role as BA event coordinator.

As part of the staff transition, we promoted AHA events and membership coordinator Matt Bolling to AHA events planner. Matt now has greater focus on Homebrew Con, homebrew clubs, and the AHA Member Deals program.

I'm pleased to also announce that Megan Wabst has been promoted from AHA administrative assistant to AHA project coordinator, and John Moorhead has been promoted from AHA competition coordinator to AHA competition manager. Congratulations, Matt, John, and Megan!

Emily Bishop joined the AHA team as membership coordinator on March 3. Emily's role covers AHA membership and

our homebrew supply shop programs. Please join me in welcoming Emily to the American Homebrewers Association!

AHA GOVERNING COMMITTEE ELECTION

Congratulations to Chris Hummert of Salem, Ore.; Annie Johnson of Seattle, Wash.; Amy Martin of Frankfort, Mich.; Gail Milburn of Dearborn, Mich.; and Cassie Salinas of Settle, Wash.; your newly elected AHA Governing Committee members. The new Governing Committee members officially join the group on June 1 and will participate in the annual in-person meeting at Homebrew Con in Nashville.

The Governing Committee advises AHA staff and sets the course for the future of the organization. The members of the Governing Committee volunteer many hours

The graphic features the AHA logo on the left, which is a circular emblem with "AMERICAN HOMEBREWERS ASSOCIATION" around the perimeter and a stylized beer glass in the center. To the right of the logo, the text "2020 Governing Committee" is displayed in a large, bold, white font, flanked by decorative wheat stalk icons. Below this, a teal-colored text box contains the sentence: "Your AHA Governing Committee develops member benefits and programs and provides direction for the future of the organization." At the bottom, five individual portraits of the governing committee members are shown in small square frames, each with their name below it: Chris Hummert, Annie Johnson, Amy Martin, Gail Milburn, and Cassie Salinas.

Chris Hummert

Annie Johnson

Amy Martin

Gail Milburn

Cassie Salinas

of their time each year to serve the community of homebrewers through the Governing Committee and its many subcommittees. Pictures and contact info for all Governing Committee members can be found at HomebrewersAssociation.org/ahagc.

I'd like to thank outgoing Governing Committee members Martin Brungard, Phil Farrell, Dennis Mitchell, Jeff Rankert, and Kathy Yan Li for their collective years of service on behalf of the AHA membership.

Thank you to the 18 candidates who ran in this year's election, and thanks to all the AHA members who voted!

HAPPY ANNIVERSARY TO THE OREGON BREW CREW

This year, the Portland, Ore.-based Oregon Brew Crew celebrates its 40th anniversary. The OBC is one of the oldest clubs in the USA and has been around nearly as long as the AHA. The club has been past recipient of the AHA Club of the Year Award (winningest club in the AHA National Homebrew Competition) and the AHA Radegast Club of the Year Award.

Congratulations to the members of the Oregon Brew Crew on hitting this impressive milestone. Here's to another 40 years!

BIG BREW

Saturday, May 2, the AHA's annual Big Brew day celebrates (Inter)National Homebrew Day, which is officially May 7. At this year's Big Brew, which is now in its 23rd year, we're asking homebrewers worldwide to participate by collectively brewing at home.

The official 2020 Big Brew recipe, Pangaea Proxima Polar IPA, is the commemorative beer Jackalope Brewing Co. is brewing for Homebrew Con 2020 attendees. Will you celebrate with us? For more information on Big Brew visit the Events section of HomebrewersAssociation.org and pledge to brew on May 2.

GOVERNMENT AFFAIRS

AHA staff are supporting and monitoring homebrew legislation and regulation in multiple states. In February, the AHA sent an action alert to members in Idaho regarding a bill that would eliminate the requirement that ingredients for home wine- and beermakers be native to Idaho. The bill was passed by both the House and Senate and was signed into law by the governor on March 18. The new law goes into effect July 1, 2020.

In New York state, the AHA sent an action alert to members in support of General Assembly Bill 9037 and Senate Bill 7369, which, if passed, would allow homebrew supply shops to apply for a license



The Oregon Brew Crew was the winner of the 2018 Radegast Club of the Year Award.

to sell beer for off-premises consumption, similar to grocery stores and drug stores. Those bills are currently in committee.

The AHA staff are working with AHA Governing Committee member Elmer Steingass to finalize language for a homebrew bill in Ohio. Currently, there is no state homebrew law in Ohio.

In Wisconsin, the AHA is working with local homebrewers, legislators, and the Department of Revenue to resolve an issue with bringing homebrew from out of state to Wisconsin for events (this issue does not apply to competitions). We are hopeful this can be resolved without need for passing legislation.

In Arkansas, AHA staff are working with local homebrewers and the Alcoholic Beverage Control Board on rules for implementing the homebrew law passed in 2019.

In Nevada, the AHA is working with homebrewers on drafting language for a homebrew bill to be proposed for the 2021 legislative session. Currently, there is no state homebrew law in Nevada.

In South Dakota, the AHA is working with homebrewers on drafting language for a homebrew bill to be proposed for the 2021 legislative session. The proposed bill would expand the use of homebrew for organized affairs, exhibitions, competitions, and tastings.

Until next time, happy homebrewing!

Gary Glass is director of the American Homebrewers Association.



Ship Shape

Dear Zymurgy,

I recently went to a UPS Store to ship a gift set of olive oil to my son. I was surprised when they asked me if they could open the package to make sure it really was olive oil. I asked why and was told that people sometimes try to ship alcohol and claim it is something else, so they ask to inspect ("olive oil" is a trigger term). I could have said no, but then they wouldn't have accepted the package. I was in a hurry, so I said yes, but I won't be going back to UPS to ship olive oil or anything else.

I seem to remember that a couple of years ago, the AHA was trying to work with UPS, FedEx, and maybe other shippers about loosening restrictions on shipping small amounts of beer for competitions. It seems like nothing has changed. Are there any efforts underway or planned at this point? If UPS is opening and inspecting packages, is FedEx far behind? What are the options?

Cheers,
John Coloe
Saratoga Thoroughbrews
Saratoga Springs, N.Y.



AHA competition manager and National Homebrew Competition coordinator John Moorhead responds: Hi, John! I've heard similar stories to yours at UPS, and it varies from store to store. Private courier shipping policies are inconsistent, for better and for worse.

The AHA has attempted to work with private couriers and even support the United States Postal Service (USPS) bill in Congress that would make shipping alcohol permissible through the USPS. The two big private players, UPS and FedEx, have policies of generally not shipping alcohol, but that does not make it illegal to do so.

Private couriers' alcohol policies usually stipulate that shipments must come from an authorized, licensed beer shipper (e.g. liquor store or distributor) and require an adult signature (age 21 or older) upon delivery. If these two requirements are not met, the package is considered a prohibited item and is either destroyed or returned to the original destination.

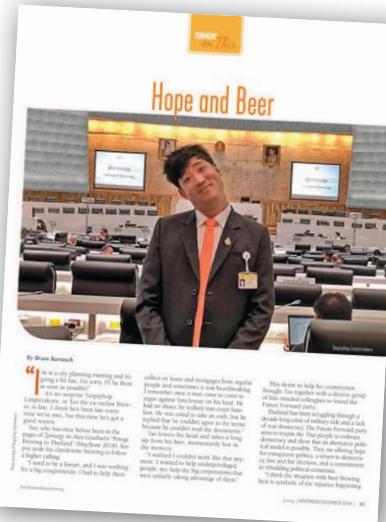
It is not illegal to ship alcohol through couriers (except for the USPS), but it is the

company's prerogative to define an alcohol shipping policy, which is why enforcement varies from store to store and hub to hub.

We did have an issue with FedEx in the Final Round of the National Homebrew Competition last year. The distribution hub had reason to believe, after discovering a leaky package containing homebrew, that many of the packages scheduled for delivery to the homebrew store contained homebrew without proper FedEx paperwork. If homebrew was found, the distribution hub rejected delivery of the package and scheduled the package to be returned to the shipper.

We had conversations with that FedEx distribution hub, as well as FedEx's customer service, support, customer escalation, and legal teams. After many conversations over the course of three days, the hub decided, unannounced, to release all the packages and continue deliveries as normal—again, a lack of consistency.

We're monitoring the situation and continuing to advocate for it.



By Brian Barwick

"I am at my planning meeting and it's a long one. I'm very ill. Be there for my wife and me. I am a member of the Senate Committee on Environment and Public Works. I am a member of the Senate Committee on Environment and Public Works. I am a member of the Senate Committee on Environment and Public Works."

"I am at my planning meeting and it's a long one. I'm very ill. Be there for my wife and me. I am a member of the Senate Committee on Environment and Public Works. I am a member of the Senate Committee on Environment and Public Works. I am a member of the Senate Committee on Environment and Public Works."

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Photo © AP Wirephoto

AP Wirephoto

READER COMMENTS

Dear Zymurgy,

I was disappointed to see the "Brewing With Cannabis" article in the latest issue of Zymurgy. I also speak for a number of AHA members who reached out to me to discuss this topic. Many find marijuana repulsive. And it is still a federally illegal drug, even in states where it is "legal." Since legalization in Colorado, we've seen a major increase in harder drugs, skyrocketing violent crime, and significant, severe health problems. It is not something many readers and members view positively. Nor do we feel marijuana has any place in a homebrewing magazine.

There are numerous outlets for drug-related articles, and I understand there are people who use pot. But please do not turn Zymurgy into a beer-drug publication.

I've been a member and strong supporter of the AHA since the early 1990s. I've brewed three Pro-Am beers for the Great American Beer Festival (all with Wynkoop), and I am the 2009 Beer Drinker of the Year. I have also contributed to Zymurgy. And I would like to see the AHA maintain focus on the brewing community.

Thank you for considering my feedback on your latest issue.

Cody Christman
Golden, Colo.

AHA director Gary Glass responds:

Thanks for writing to us with your concerns about the cannabis article we ran in the Mar/Apr 2020 issue of Zymurgy. We knew when we decided to publish that feature that it would not appeal to a portion of our readership—me included, as I can't imagine personally brewing with cannabis-based ingredients. The same could be said of many other features in Zymurgy; many readers will probably never

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brew a sour beer, but that doesn't mean we won't publish features on sour beers. We don't currently have plans to publish any additional features on brewing with cannabis, and I can't foresee articles on brewing with cannabis becoming a regular fixture of the magazine, so you need not worry about that. Thanks again for taking the time to voice your concerns and thank you for your many years of membership.

Dear Zymurgy,

I realize that the CBD molecular diagram on page 50 of the Mar/Apr 2020 issue is there primarily as artwork, but the formula shown is incorrect. The double bond to C₃H should read CH₂ (the H moved to form the hydroxyl group). The other C₃H groups should instead be written CH₃ (or H₃C).

Sean Timm
Herndon, Va.

Dear Zymurgy,

"Hope and Beer" (Nov/Dec 2019) was an incredible story. It was heartwarming to hear how Tao was inspired to take political action to combat the injustices he saw in his homeland's political system (and enjoy a beer—outlaw or otherwise)—along the

way). I think we could all take a page from that book. It was an all-around great article. Keep up the good work!

Best,
Jacob Shreckengost
Atlanta, Ga.

Dear Zymurgy,

I am writing in response to Michael Berrios's piece in the Jan/Feb 2020 issue of *Zymurgy*.

I am president of a small but mighty homebrew club in Maryland. Our club runs a successful annual bus trip to breweries hours away from us and organizes a strong BJCP-sanctioned homebrew competition. We have lost several homebrewers over the last few years and have had considerable trouble generating more interest.

But I want to respond to Michael's suggestion of why some brewers have lost interest and why the rest of us continue to brew. Like him and many others, I started brewing because I couldn't get beers I was interested in trying. Although we had brands like Löwenbräu, Bass, and Old Peculiar, and much less homogeneity in American lager in the 70s and 80s than people seem to remember today,

there were many styles I had heard of but could not easily buy. The obvious answer, as Michael says, was to begin brewing them myself.

But where I differ is in his saying that that particular motivation is less today. He says, "Now we can get all this without spending so much time to create it."

Sorry, no. If you want overly hopped IPA or sour beer or fruity weirdness, sure. Brewpubs are full of coffee-infused, barrel-aged, hot-pepper, wild-fermented stuff. But where can I get an English mild ale? Where can I find a porter that doesn't need to be chewed? How about a real attempt to make a Kölsch instead of "our take on the style?" One of my favorite beers is no longer brewed because devotees of the above-mentioned weirdness won't drink a really excellent amber ale.

As long as I can still get authentic ingredients, I will continue to brew beer I like. I hope enough people feel the same way to keep the importers bringing in good English crystal malts and other ingredients I depend on.

John Krehbiel
President, MALT homebrew club
Lusby, Md.

The advertisement features a teal background with tropical palm fronds. In the center is the MoreBeer! logo, which includes a red circle with two yellow wheat stalks and the text "MoreBeer!™ Absolutely Everything! for Beer-Making". Surrounding the logo are several pieces of brewing equipment:

- KOMOS:** A white keg cooler with two black faucets and a black vertical keg chiller.
- Torpedo KEG:** Two stacked silver kegs and a white keg with a black lid.
- CANNULAR:** A black canning machine with a silver can and a lid next to it.
- BrewBuilt:** A large stainless steel brewing system with multiple tanks and a central control unit.

At the bottom left, there is a pink flamingo standing next to a stack of three silver kegs. The bottom right corner features a pink flamingo silhouette. The bottom left also has the text "MOREBEER.COM". The bottom right has the phone number "1-800-600-0033".

AN OFF-COLOR COMMENT

Dear Zymurgy,

Thanks to my handy-dandy AHA SRM magnet wheel, I noticed that the recipe for Majestic Sea Cow Pale Ale in the Mar/Apr 2020 issue showed a beer glass icon filled with what seemed to be a much darker beer than the 3–4 SRM indicated in the recipe.

Just wanted to let you know! Keep up the good work!

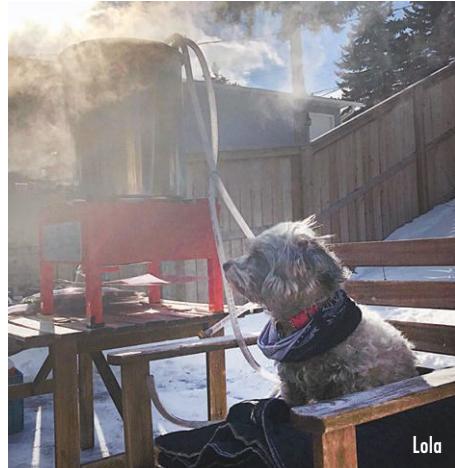
Kevin McCann
Raleigh, N.C.



HOT DOG

Here's little Lola guarding the wort and maybe basking in the heat of the burner on a cool Canadian morning.

Ian Wilson
Barley Conscious Basement Brewers
Calgary, AB, Canada



DEAR ZYMGURGY

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

HOMEBREW LABEL SUBMISSIONS

I made all the beer for my wedding in September. I brewed three different beers and designed labels for each of them. Our wedding was nature themed, so I decided to name the beers after animals. Hope you like them!

Caleb Robinson
Ogden, Utah



In the midst of a busy summer brew schedule, it just so happened that I had planned to make a Belgian witbier on the 50th anniversary of the moon landing. I discovered the coincidence a few days beforehand and decided that I should pay homage to the celebration of such a momentous day.

Over the Moon is a tribute to the joy and excitement felt all over the world on July 20, 1969, and plays on the well-established connection between Belgian witbier and the moon. The label was built around the basic profile and color scheme of NASA's logo and features the bespeckled brew dog, Jack.

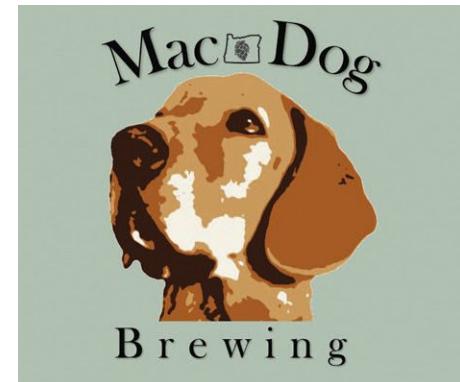
I served the keg at a baby shower thrown for my wife and me, and it was empty in the matter of a few hours!

Max Milan
Bedford, Texas



I wanted to incorporate my Chesapeake Bay Retriever, Taz, into my brewery name and label. My daughter helped me get a picture of Taz down to just four colors, which lends itself to more of a designed label instead of a composite of pictures.

Jim Ambrose
McMinnville Brew Club
McMinnville, Ore.



SUBMIT YOUR LABEL

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

Send them to us at HomebrewersAssociation.org/magazines/submit-bottle-label and we will take it into consideration!



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STÉPHANE MEULEMANS

General Manager, Fermentis.
Brewer for 25 years.



The logo for Fermentis by Lesaffre. It features a stylized circular graphic composed of concentric arcs in shades of orange, grey, and white. To the right of the graphic, the word "Fermentis" is written in a large, bold, black serif font. Below it, the words "by Lesaffre" are written in a smaller, black sans-serif font.

A large, round loaf of sourdough bread with a golden-brown crust and a dusting of flour sits behind a bunch of ripe, dark red grapes. The bread has a prominent circular air hole on its surface. The grapes are clustered together, some with green stems and leaves visible.

Sourdough

By Amahl Turczyn

San Francisco is known for its sourdough bread, but with a good starter, you don't need to be limited to baking those tart, tangy loaves at home. There are a host of risen breads that take well to the natural yeasts and lactic acid bacteria that make up the starter, but finding the correct blend of microbes and maintaining them can be challenging. For this ferment, I'll show you how to do both and present some recipes for putting your precious starter to the best use.



GETTING STARTED

It is possible to simply put out a bowl of flour and water, usually mixed at a 1:1 ratio by volume, on a kitchen counter and hope for the best. As with a Belgian coolship, this food source will attract local microflora, usually a combination of wild yeasts, bacteria, and molds. The goal here, as in brewing, is to collect wild yeasts and lactic bacteria first; with luck, the yeast will take hold and begin reproducing, and the bacteria will be of the desirable lactic sort that will lower the starter pH enough to make things inhospitable for not-so-desirable bacteria and mold.

If this happens in the right order, within days you'll have a bowl of bubbly, spontaneously fermenting starter that smells like yogurt and sour fruit that you can then add to various doughs and batters in your kitchen. But it doesn't always work out. Mold can get the upper hand, as can varieties of bacteria that don't smell that appealing.

To give your sourdough starter a better chance of nurturing the correct blend, recall that fruit growing in the wild tends to attract natural, desirable yeast strains. (Tree bark does, too, but since fruit is generally more edible, we'll stick with that.) Apples, pears, and plums—really, any smooth-skinned tree fruit—are all viable candidates, but one of the more popular sourdough starter additions is the humble grape.

Grape skins, particularly wild red grapes, tend to attract the perfect blend of wild yeasts and bacteria for sourdough. If you can't get wild grapes near you, or if they are out of season, the next best option is to simply buy organic red or black grapes; for convenience, I prefer seedless varieties. Non-organic fruit of any of the previously mentioned varieties will certainly work too, but grapes especially are sprayed with fungicides, pesticides, and other chemicals that you probably don't want in your starter, if only because they will slow the growth of the natural microbes present.

It's really as simple as mixing a cup (250 mL) of flour (bread flour and all-purpose are both fine) with a cup (250 mL) of carbon-filtered or reverse-osmosis water (chlorine will also slow microbial growth) to make a thin batter. Wash about half a pound (225 g) of seedless red grapes (don't worry about washing off the natural yeast—you won't) to remove any dirt or dust, pick off the stems, and throw the grapes right into the batter.

Most people favor tying the grapes up into a piece of cheesecloth and dunking that into the batter. After a day or two of contact, the bag can then be removed from

the starter, and you can squeeze the grapes to get their juice into the batter. I don't have a problem with bits of grape skin—that's where all the yeast is, after all—so I bury the washed grapes in the batter and then hit it with an immersion blender. The sugars in the grape juice will help feed the yeast and get a nice, tart sourdough going.

Cover your starter with a piece of plastic wrap and keep it on the kitchen counter until you begin to see activity. At room temperature, your starter will usually need about three days to get going. Once it settles out in a day or so, you may see a layer of clear liquid over the mixed flour and water. But once the yeast gets going, it will begin to bubble and foam, resembling pancake batter. At this point, give it a sniff. It should smell bready, tart, and yeasty. If there are any rotten, moldy, or sulfur off aromas, you'll know the right yeasts and bacteria did not overcome the less desirable microbes, and you should dump it and start over. Taste a bit; it should have a pronounced tang. Now you need to start feeding it.

CARE AND FEEDING

Storing your starter at room temperature will keep it active, but you'll need to feed it twice daily. This simply means removing about half a cup (about 130 g) of the batter and replacing it with the same amount of a 1:1 batter of fresh flour and filtered water. Stir thoroughly, replace the cover, and allow your well-fed starter to continue fermenting.

The portion you remove can be fed to one of a variety of recipes; as an active starter, it can either take the place of the leavening agent in those recipes or accompany another leavener such as instant dry yeast, baking powder, baking soda, or a combination of these. If you don't happen to be making one of these, you can simply discard the portion of starter you remove, but removing and feeding is important for keeping the starter in optimum health.

If you don't think you'll use your starter as often, another option is to keep it in the refrigerator. In this case, it won't be as active, but you'll only need to remove the measured portion and feed it every couple of days. If you happen to go on vacation or need to neglect your starter for any length of time longer than a few days, don't worry. You should be able to resurrect it by getting back on a regular feeding schedule. It will be sluggish at first, but within a couple of feeding cycles, it should be back to its active self. Of course, if you let it go too long, you may need to dump it and start over, but I've kept sourdough starters



Ferment
This!

Sourdough Pancakes/Waffles

While many sourdough pancake recipes are simply standard 5-minute morning-of recipes that call for a sourdough starter addition to lend a bit of tang, this recipe, based on one provided by King Arthur Flour, incorporates an overnight, do-ahead pre-ferment. This sponge allows more sourdough flavor to develop, although baking soda is also added last minute. Bicarbonate of soda, when combined with low-pH buttermilk and starter in the batter, produces CO₂, which then acts as a leavening agent. (Real buttermilk is a fermented food in its own right, but most “cultured buttermilks” you can buy are pasteurized, with no active cultures. Like beer and sourdough, it’s best to make your own. Look for a future article on buttermilk!) Also, I like using dry malt extract (DME) instead of sugar.

Yield: 24 pancakes

PRE-FERMENT

250 g (2 cups) all-purpose flour
454 g (2 cups) buttermilk or kefir, preferably homemade
28 g (1 oz.) dry malt extract

LEAVENING

245 g (about a cup) sourdough starter
4 g (1 tsp.) baking soda

MAIN FERMENT

2 eggs
57 g (0.25 cups) butter, melted
6 g (1 tsp.) non-iodized salt
6 g (1 tsp.) baking soda

PROCEDURE

Stir starter, flour, DME, and buttermilk in large bowl. Cover and allow to ferment at room temperature for about 12 hours or overnight.

In the morning, preheat griddle or waffle iron. Beat eggs and butter together to emulsify, and stir into the sponge. If making pancakes, you may want to thin the batter at this point with a bit of milk; waffle batter can be a little thicker. When batter reaches your desired consistency, stir in salt and baking soda. Batter should fluff. Pour and bake.

Photos courtesy of Amahl Turczyn

Ferment
This!

Sourdough Dutch Oven Kettle Bread

This is a light, airy, crusty bready that looks and tastes just like the sourdough from your local artisan bakery, and it's very easy to make. But it does require special equipment: two large cast iron or enameled cast iron Dutch ovens, with lids. The recipe can be halved if you only have one, but I usually bake them two at a time, just because you need a good 30 minutes of pre-heating on top of the bake time.

The trickiest part of this recipe is transferring the wet, sticky loaves to your piping hot pots without jostling them too much, which will deflate them. This is all too easy to do—no matter how careful you are, the loaves will want to stick to everything they touch. The key is to let them rise in large, shallow bowls lined with flour-coated tea towels. If you get that layer of flour nice and thick and can gently roll the risen dough into the hot Dutch ovens, you'll have beautiful, impressively round loaves with a fine, spongy crumb laced with big gas bubbles. The extra flour in the kettles won't matter; it will brown, but it shouldn't burn. It takes a bit of practice, but you'll love the result.

Hint: Don't try covering or lining the loaves with plastic wrap, wax paper, silicone baking sheets, or anything else you might consider non-stick. They will stick, tear and collapse. A thick layer of flour is the only way I've found to keep these loaves from sticking.

Yield: 2 loaves

FERMENTABLES

800 g bread flour

YEAST

245 g (about a cup) sourdough starter
3 g instant dried yeast (optional)

OTHER INGREDIENTS

16 g non-iodized salt
580 g filtered, 90°F (32°C) water



PROCEDURE

Add water to a large bowl and sprinkle dried yeast, if using, on top to proof. (The dried yeast is more insurance than anything; if you are confident your starter is in prime, active condition, you can omit the dried yeast, but I usually add it anyway, as it won't hurt anything.) When the yeast is dissolved and begins to foam, add your cup of starter and wash the cup in the yeasty water to get most of the starter off. Then add your bread flour on top, add the salt on top of the flour, and mix everything well. The dough will be very sticky. Cover and allow to ferment for about 18 hours at room temperature.

Preheat your oven to 450°F (230°C). Once it reaches that temperature, and 30 minutes before you are ready to bake, slide your Dutch ovens into the middle oven rack, lids slightly ajar to make sure the insides heat evenly. Once they've been in for 30 minutes and are thoroughly heated, remove them carefully, slide the loaves in, flour and all, cover tightly with the preheated lids, and tuck them back into the oven. Bake for 30 minutes*. Remove the lids and then continue to bake another 7 to 15 minutes, until the loaves are a deep golden brown on top. Remove loaves after a few minutes and move them to a rack to cool for at least an hour.

*This baking time works perfectly for Denver, Colo. You may want to adjust temperature and/or baking time downward slightly if you live at sea level.

Ferment This!

Sourdough Pizza Dough

This particular dough recipe produces 4 or 5 full-sized pizzas, depending upon how thin you like your crust. It makes use of a pre-fermented dough—sometimes bakers refer to this as a sponge or poolish—to develop flavor and consistency. It works particularly well with sourdough starter, as it gives the natural yeast and microbes a chance to get the dough noticeably tart.

Be aware that these same microbes tend to break down gluten much faster than regular baker's yeast, though, so there is a definite window between just enough fermentation and too much. Underdo it, and the tang will be subtle at best; overdo it, and you won't get much spring from the dough when you bake it. The secret ingredient that all homebrewers have on hand, namely dry malt extract (DME), helps fermentation, and during baking it contributes to flavor and color via the same Maillard reactions that occur in the brew kettle.

Yield: 5 thin-crust 16" pizzas

PRE-FERMENT

450 g (1 lb.) bread flour
14 g (0.5 oz.) dry malt extract
550 mL (2.25 cups) filtered water

YEAST

245 g (about a cup) sourdough starter
8 g instant dried yeast (optional)

MAIN FERMENT

450 g (1 lb.) bread flour
18 g (3 tsp.) non-iodized salt
8 g (2 tsp.) olive oil

PROCEDURE

Add water, 450 g flour, DME, yeast and starter to a large stand mixer bowl and mix well (I just use a chopstick for this). The dough will be loose and sticky. Cover and ferment at room temperature for 4 to 8 hours. Mixture should bubble up, doubling in volume.

Add the remaining 450 g of bread flour on top, then the salt, and finally the olive oil. Using the dough hook on your mixer, mix until all the dry flour is incorporated. Let rest 20 minutes to hydrate. Then mix on low for another 20 minutes.

Remove dough from mixer, knead with a bit of bench flour to make sure dough is consistently smooth and elastic, and divide into even portions. Cover (either in a large plastic container with a tight lid, or individually wrapped) and allow to ferment for 12 to 18 hours in the fridge, 37–41°F (3–5°C). They will then be ready to roll, top and bake.



going for months with no issues. They are pretty hardy.

The accompanying recipes illustrate just a few ways you can use this wonderful bit of kitchen-fermented magic. Use your imagination and try incorporating sourdough in any leavened baked good that might benefit from a refreshing lactic zing.

Amahl Turczyn is associate editor of Zymurgy.



OXIDATION

Understanding oxidation begins by looking around the kitchen. Observe bananas that weren't eaten before they developed speckles and stripes. Or scrape away the thin brown layer sitting atop a bowl of guacamole prepared just hours earlier. We may find delight in other oxidized food products such as sherry wine, black tea, and chocolate. Oxygen is at work

all around us! Even components in our skin become oxidized, emitting new, interesting odors as we age.¹

In brewing science, oxidation is complex and not fully understood. We do know that oxidized flavor does not refer to one specific characteristic, but rather dozens of compounds that arise from various chemical and enzymatic processes, some of which may

even occur in the absence of oxygen. We'll limit our discussion here to a number of compounds specifically attributed to oxygen's presence at different stages and clarify some important points regarding beer aging.

ISOVALERIC ACID

Not only should brewers be vigilant against oxygen while handling finished beer, but they need to protect their hops,

too. Oxidation of hops can cause irreparable damage to the flowers or pellets and can result in an aroma reminiscent of aged cheese or foot odor in the beer. The flavor, isovaleric acid, is a fatty acid formed when hop alpha acids are exposed to oxygen. Specifically, a branch of the humulone molecule called the isovaleryl group breaks off and develops a Parmesan-like aroma.



Isovaleric acid smells like cheese and sweaty humans because it exists in these environments, but these cases have bacterial and fungal origins. Some *Lactobacillus* and *Brettanomyces* species produce isoalericic from a precursor called leucine.²

Human sensitivity to isoaleric acid varies from person to person, so it is important to gauge judges' sensitivity before tasking them with identifying these flavors.³ The aroma threshold for isoaleric acid decreases with pH, making it most perceptible once the beer has reached its final pH.⁴ Isoaleric is not always considered a defect: for instance, Belgian lambics require the use of old hops because the degraded alpha acids allow for a friendlier microbial environment. Some combination of aged hops and *Brettanomyces* likely contributes to the nuanced funky characteristic that sets this style apart.

Avoiding isoaleric acid formation in hops is straightforward. The reaction happens more quickly in warm storage than in cold, so brewers are encouraged to store hops between -5°F and 30°F (-20°C and -1°C).⁵ Furthermore, hops should be stored in packaging that has been purged of air and, ideally, vacuum sealed. Last, isoaleric acid formation is inevitable as time passes, so hops should be used while fresh, unless of course you are trying your luck with a spontaneous ferment.

TRANS-2-NONENAL

The quintessential descriptor associated with oxidized beer is wet cardboard. The compound that imparts these flavors is called trans-2-nonenal (T2N), and contrary to popular belief, it is not caused by oxidation of finished beer, but rather oxidation of fatty acids during malting, mashing, and boiling.⁶ Specifically, barley naturally contains an enzyme called lipoxygenase (LOX) and a fatty acid called linoleic acid. During malting and mashing, LOX activates and facilitates a reaction with linoleic acid to form T2N.

Ingress of oxygen during boiling, a.k.a. hot side aeration, can trigger the same reaction independently of the LOX enzyme. The story doesn't end here, though. Trans-2-nonenal then binds with amino acids or proteins, and it remains trapped in this bound state, known as trans-2 potential. In this form, T2N is not flavor active, and it is carried in the beer through the fermentation and cellaring processes. It is only released during aging, and conditions such as warm storage temperature and low pH accelerate this process.⁷

Control of trans-2-nonenal can be approached from several angles. Research



shows that increased mashing temperatures (above 150°F or 66°C) can inhibit LOX activity, but this would effectively inhibit other enzymes essential to brewing, such as amylases and proteases. Reducing mash pH to 5.1 can reduce LOX activity, too, but with a lesser detriment to other goals in hot-side processes.^{6,8} Reducing oxygen ingress in the brewhouse is another effective approach, but the most reasonable recommendation for reducing T2N formation in beer is to simply store packaged beer in refrigerated conditions and to drink it fresh.

OXIDATION OF FINISHED BEER

Although the origins of stale, cardboard flavors do not revolve around oxygen ingress during processing and packaging, oxidation should still be a cause for concern at this stage. Researchers have found that oxygen can activate free radicals, which are highly reactive and result in significant changes in flavor. One reaction that occurs is the oxidation of alcohols, which can lead to development of various aldehydes. Some of these are pleasantly reminiscent of flavors such as sherry and

almond, although oxidation of ethanol forms acetaldehyde.

Acetaldehyde is an intermediate during fermentation, smelling like green apples, pumpkin guts, or paint solvent (see Beer School in the Sept/Oct 2019 issue of *Zymurgy*). It becomes problematic when it remains in finished beer as a result of suboptimal yeast health. In beer with high levels of ethanol and oxygen ingress, acetaldehyde forms in a reverse reaction and may reach perceivable levels. This is particularly relevant to high-alcohol beers exposed to oxygen during barrel aging.

Hop constituents are also vulnerable to oxygen ingress in finished beer. Reactive oxygen species cause isomerized alpha acids to break down, forming a harsher bitterness and astringency. Secondly, researchers have positively linked high levels of headspace air in bottles to a flavor described as "catty" or like blackcurrants.^{6,9}

Controlling oxygen during transfer and packaging can be tricky without the ability to measure its levels in beer. There are a number of instruments available to brewers that measure headspace air, dissolved oxygen, or total package oxygen, with price tags starting at \$1,400. It is important to understand the difference between these types of measurements and what they mean in a quality control context.

Headspace air refers to any atmospheric gases—primarily oxygen and nitrogen—that aren't carbon dioxide. This measurement does not provide certainty around oxygen levels, but there are industry standards for headspace air in packaged products: between 0.2 and 0.5 mL per 12-ounce package, as measured on a Zahm & Nagle Headspace Air Tester.⁵

Dissolved oxygen refers specifically to oxygen that is absorbed in the beer, but it doesn't account for oxygen residing in the space between the liquid level and the top of the container. Total package oxygen (TPO) is the complete picture: oxygen that is both dissolved in the liquid and in the headspace above the liquid. TPO is often what large commercial brewers aim to measure and control.

A thorough discussion of oxidation must also include storage conditions. While oxygen is certainly damaging to beer, its negative effects can be curtailed to an extent by ensuring that finished beer is always refrigerated and that styles best consumed while fresh are done so. Many studies show that beer staling, whether oxidative or non-oxidative, happens at a reduced rate in these conditions.

Finally, brewers should familiarize themselves with flavors associated with

oxidation and apply this knowledge while tasting their beer as it ages. Keeping an archive of packaged beer and cracking a bottle or can every so often can do wonders for understanding how a particular beer changes over time.

RESOURCES

1. Shinichiro, H., Gozu, Y., Nakamura, S., Kohno, Y., Sawano, K., Ohta, H., Yamazaki, K., 2-Nonenal Newly Found in Human Body Odor Tends to Increase with Aging. *Journal of Investigative Dermatology*. Volume 116, Issue 4, April 2001, Pages 520-524.
2. Say "Cheese!" Isovaleric acid in beer. Beer Sensory Science. <https://beersensoryscience.wordpress.com/2010/12/09/isovaleric-acid/>. Published Dec. 9, 2010. Accessed Jan 21, 2020.
3. Moran, L.A., Can You Smell Isovaleric Acid?. Sandwalk. <https://sandwalk.blogspot.com/2007/11/can-you-smell-isovaleric-acid.html>. Published Nov. 1, 2007. Accessed Jan 21, 2020.
4. Ganesan, B., Weimer, B.C., "Amino acid metabolism in relationship to cheese flavor development." Improving the Flavour of Cheese. Woodhead Publishing Series in Food Science, Technology and Nutrition, 2007. Pages 70-101. Science Direct. Web. Accessed Jan 21, 2020.
5. Markowski, P., Techniques and Technologies for Minimizing Air in Bottled Beers. MoreBeer!. https://www.morebeer.com/articles/Minimizing_Oxygen_Bottled_Beer. Published Nov. 30, 2001. Accessed Jan 22 2020.
6. Vanderhaegen, B., Neven, H., Verachtert, H., Derdelinckx, G., The chemistry of beer aging - a critical review. *Food Chemistry*. Volume 95, Issue 3, April 2006, Pages 357-381.
7. Simpson B. Practical Beer Taster Training Course. Lecture presented at: Cicerone Certification Program Office; October 2015; Chicago, IL.
8. Kobayashi, N., Kaneda, H., Kano, Y., Koshino, S., Lipid Oxidation During Wort Production. *Proceedings of the European Brewing Congress*, 1993. Pages 405-412.
9. Clapperton, J.F., Ribes Flavor in Beer. *Journal of the Institute of Brewing*. Volume 83. 1976. Pages 175-176.

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5 STEPS TO BETTER MEAD

By Jason Phelps

I remember when I made my first all-honey ferment in 2005. I didn't know what, if anything, would be different from the beers, wines, and ciders I had already made, and there was a slew of topics I hadn't delved into yet after only two years of homebrewing. I surely didn't know what I didn't know!

In the 15 years since, I've learned a few handy techniques that have allowed me to create delicious, award-winning meads, wines, and ciders as a homebrewer and as a commercial producer. With mead, as with beer, wine, and cider, the educational journey is never over. There is not enough space in one article to cover all of the "good stuff," all the twists and turns we inevitably run into along the way.

So, I've kept it relatively simple, with the goal to open a door in each area, without forgetting to help you chart the path to using these techniques. You are invited to wander in and explore all of them at your own pace.

IMPROVING THE MEADMAKING PROCESS

These tips are useful for novice and experienced meadmakers alike. Those just starting out will gain a high-level view of the overall process, which is useful when thinking about purchasing equipment, planning a space, and so on. Experienced meadmakers will find that these suggestions can open up new horizons to explore and potentially take their meads to a higher level.



So, what does the basic meadmaking process look like?

1. Build a recipe
2. Procure ingredients
3. Clean and sanitize equipment
4. Measure and mix initial ingredients
5. Prepare and pitch yeast
6. Clean and sanitize equipment
7. Feed the ferment
8. Verify complete fermentation
9. Stabilize
10. Finish
11. Package
12. Age and enjoy

A third instance of “Clean and sanitize equipment” could also have been added between steps 11 and 12, but I think you get the point with steps 3 and 6. Keep your equipment clean, and your mead will be clean, too.

Can it really be that simple? Well, as they say, the devil is in the details, and you can make this process as complicated as you want it to be. Added complexity, however, should always create better results. So, what are some ways we can enhance the process to make better mead?

1. Build a better recipe
2. Experiment with yeasts
3. Use better yeast management

4. Employ temperature control

5. Unlock new concepts with honey varietals and blends

Let's get to the meadmaking!

TIP 1: BUILD A BETTER RECIPE

A mead recipe is more than a list of ingredients, as is the case with a beer recipe. The ingredients for both beverages are inputs to a complex mashup at the confluence of art and science. Mead recipes contain measured amounts of fermentable sugars from honey, but other ingredients (acids, tannins, etc.), yeast selection, and equipment logistics all flow from the concept behind the recipe. Luckily, we can work out a recipe for mead that considers some aspects of fermentation management, which can help shape successful outcomes. The path to making better meads begins here.

With most mead recipes, we want a balance between the potential alcohol by volume (ABV) and residual sweetness. This requires that we estimate the sugar contributions of all of the ingredients and estimate a starting gravity. From there, we use information on the alcohol tolerance of our selected yeast to estimate a final gravity and a percentage ABV. We can use this as a base-

line to adjust fermentable sugars up and down as well as substitute different yeasts to produce similar or completely different results along a spectrum of recipes.

A number of tools are available to estimate the original gravity (or Brix) of a proposed amount of honey and starting volume. They can also account for fruit additions and a range of other fermentable sugars, much like the tools—the same ones in some cases—available for building beer recipes. Using such a tool to calculate target gravities and alcohol content yields an expectation that you can work to achieve.

TIP 2: EXPERIMENT WITH YEASTS

As we discussed earlier, yeast selection plays a critical role in your mead recipe. There are numerous characteristics to consider when choosing a strain, but four are particularly relevant for meadmakers.

Alcohol Tolerance

Most alcohol-tolerant beer and wine yeast strains can ferment to between 12% and 18% ABV. How far a yeast ferments is essential to understanding how sugars in the must will translate into a predictable level of alcohol and residual sweetness or dryness.

SOFTWARE OPTIONS FOR DESIGNING A MEAD RECIPE

BeerSmith ([Beersmith.com](https://www.beersmith.com)):

BeerSmith ([Beersmith.com](https://www.beersmith.com)) is BeerSmith 3 introduced many new features to help meadmakers build and manage recipes. Using a “system” profile, much as you would for beer, provides the basis for a fully customizable experience. BeerSmith can calculate estimated gravities and even take yeast alcohol tolerance into account. You can also configure nutrient profiles and add your own ingredients if they aren't provided by default. BeerSmith requires a subscription to use the complete set of features.

Brewers Friend ([BrewersFriend.com](https://www.brewersfriend.com)): This tool allows users to build beer and mead recipes and has the capability to account for your particular brew system as well as fermentables. A free version is available, but paying for a subscription unlocks additional features.

GotMead Calculator ([GotMead.com](https://www.gotmead.com)): The GotMead.com calculator is a very straightforward, and also free, web application that allows you to estimate fermentables for a mead recipe. In many cases this is an easy way to “prototype” a recipe quickly and see what the potential might be.

Meadmakr BatchBuildr ([MeadMakr.com](https://www.meadmakr.com)): The crew at Meadmakr.com have developed a set of tools that allow you to work out recipes using a number of different methods, including support for several popular nutrient profiles.



PRO TIP

Yeast is cheap: make sure you pitch enough! If the original gravity of your must is above 1.100 (23.8°P), I suggest using at least 3 grams of dry yeast per gallon of must (0.8 g/L), if not more. For really high-gravity ferments, a higher pitch rate of 5 or more grams per gallon (1.3 g/L or more) is recommended.

Yeast specification sheets typically include an alcohol tolerance value for each strain, and the Scott Labs Handbook (ScottLab.com) actually includes it in the grid of yeasts that can be found in the first few pages of the manual. Use this value in the processes described above to estimate the final gravity and residual sugar for any recipe you might want to embark on.

Common Usage and Varietal Character

What type of beverage is the yeast strain typically used to ferment? Beer? Wine? Are there any special instructions or specific expectations you should know about? Read the specification sheets for an assortment of yeasts. Some of the details are really interesting and can lead you to creative use of different yeasts for different purposes.

Looking for additional body in low-ABV ferments? Try using a yeast like Lalvin BDX, which is known to produce more glycerol, a fermentation byproduct that increases body, mouthfeel, and “roundness” in wines and meads. Fermenting with apples or cider? Try Lalvin 71B-1122, a yeast that can metabolize more malic acid, the dominant acid in apples, than other wine yeasts. This results in a softer, less sharp finish to recipes that contain fruits high in malic acid.

Yeasts that promote different fruit aromas and flavors or impart spicy, earthy, or other potentially complementary sensory outcomes are also out there. Take a look at the spec sheet for Lalvin BM45 (or BM 4X4). Experimenting with a range of yeasts on different types of ferments opens up a world of possibilities.

Temperature Range

Different yeast strains work in different optimal temperature ranges. Your ability to maintain a fermentation temperature within this range increases your chances of having optimal results for any yeast strain. Yeast specification sheets will again include this value.

One thing to keep in mind is that fermenting at the very bottom or very top of that range may still affect fermentation, for example slowing attenuation at the cooler end or producing unwanted phenols and esters at the warmer end. Knowing the yeast's comfort zone is very important. We'll dig more into temperature control a little further down.

Nutrient Needs

Feeding your ferment is a critical technique in making better meads, so much so that it is actually our next tip. Yeasts have unique nutrient needs and may behave differently in low-nutrient environments. Yeasts prone

to high sulfur production may need more nutrients—you don't want to underestimate this, as excess sulfur is hard to get out of finished meads and wines.

Understanding where a particular strain of yeast is on the scale of nutrient needs and your planned fermentation environment helps you map out how much nutrient to use and when to use it.

TIP 3: USE BETTER YEAST MANAGEMENT

Two yeast management strategies will help make your ferments healthier and more reliable. Yeast is your workforce, and taking care of it ensures you get the most out of its work. As you gain experience, you can use these techniques to further refine how you calculate nutrient needs and apply them to your ferments.

Yeast Rehydration

This is all about giving your dry yeast a good head start. Rehydrating dry yeast is like making an abbreviated starter, but it's only to help the yeast wake up, not to propagate it. A traditional starter can also be used in meadmaking, but that's a topic for another day.

So, how do you rehydrate yeast? Using a small amount of warm water, no hotter



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than 110°F (43°C), and a yeast rehydration agent like Go-Ferm or Startup, create a slurry in which to rehydrate the yeast. After the slurry cools to below 104°F (40°C), the yeast can be stirred in and given five to ten minutes to come back to life.

After a few minutes a small amount of the intended must can be used to temper the yeast slurry and provide some immediate food. Most yeasts will produce noticeable gas and bubbles on the surface of the slurry within just a few minutes. The yeast can be pitched once the temperature difference between the slurry and the must is less than 18°F (10°C). This reduces the risk of thermal shock, which stresses a new yeast colony.

The complete process, including how to calculate ingredient amounts based on batch size and pitch rate, is well documented in the Scott Laboratories Fermentation Handbook, an annually updated reference I strongly recommend meadmakers and ciders make use of (ScottLab.com).

As you experiment with yeasts, make sure to check their specifications for temperature tolerances. You may find that some yeasts or yeast blends require a lower rehydration temperature.

Staggered Nutrient Additions

Once you pitch your yeast, you need to have a plan to keep it healthy by providing it with nutrients. The main one is nitrogen, but there are other micronutrients that yeast can also use to perform optimally. You'll see that there are choices for the sources of these nutrients, and sometimes multiple brands or vendors for each. We will want to include these ingredients in our recipe, and then we'll need a schedule to make them available during fermentation.

There has been much discussion in modern meadmaking around staggered nutrient additions (SNA). The SNA process is actually quite straightforward: you simply supply nutrients in multiple doses over a series of days at the beginning of a ferment. While the process is straightforward, there are several distinct SNA regimens popular with amateur and commercial meadmakers alike. Over the last 17 years, I've tried a number of different methods and have not found any to be objectively inferior or superior to any other.

Different methods may ultimately be more desirable because they are more compatible with a given meadmaker's process or more applicable to specific problems that can arise. Either way, this means we

should know about the different methods and experiment to see how they work with our own meadmaking.

This is all in contrast to classical nutrient models that often recommended adding all nutrients before the yeast is pitched. One of the core philosophies of SNA is that yeast can't metabolize all the nutrients they will need for the entire ferment all at once and that spreading them out during the initial growth phase increases their usefulness and leads to more consistent yeast behavior.

Looking at the process overall, we can see that mixing and degassing the must prior to nutrient additions also reduces another potential stress factor, namely excess CO₂.

While the methods differ, the differences are primarily related to which nutrients are used. Most regimens specify a four-dose plan, with doses provided on the first, second, and third days after the yeast is pitched, and a final dose when one-third of the fermentable sugars have been consumed.

We can revisit one of the tools from the first tip to see several different regimens set up as options. The default regimen in the Meadmakr BatchBuildr is the Tailored Organic Staggered Nutrient Addition (TOSNA), currently supported in its version 2.0 format.

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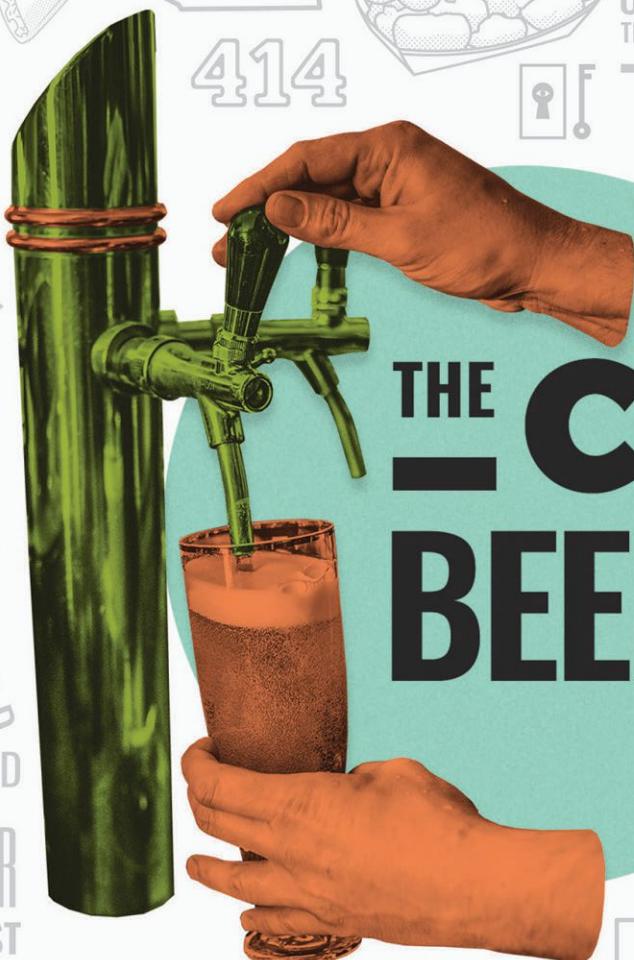
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A GREAT PLACE

TOSNA specifies the exclusive use of the nutrient Fermaid-O, an organic source of nitrogen. This regimen eschews the use of any inorganic forms of nitrogen, typically provided by diammonium phosphate (DAP), which can be found on its own or as part of some nutrient blends. The concern is that DAP can be much like candy in the hands of child: it gives an immediate boost of energy, but the ensuing crash may end up not being worth it. Swings in yeast metabolism because of DAP are definitely worth considering, but in my own mead-making I continue to use DAP, just in much smaller quantities than typically suggested.

The TOSNA regimen uses a standardized calculation based on the gravity, batch size, and nutrients needs of the yeast to determine how much Fermaid-O to use for a particular ferment. You can read all the details on TOSNA at the Mead Made Right website (MeadMadeRight.com).

A variation of this regimen named TiOSNA uses the same basic approach, but the target nutrient is Fermaid-K, a source of both organic *and* inorganic (DAP) nitrogen, as well as a number of other micronutrients.

After taking a closer look, you'll find that other regimens are effectively different mashups of Fermaid-O, Fermaid-K, and straight DAP, as well as yeast hulls, the main component of Fermaid-O, which serve as a source of organic nitrogen. Each method typically uses a similar method of calculating nutrient needs, but the amounts of the different components vary.

The application of any one of these regimens brings us back to where things are pretty approachable. On each of the “feeding days” on which nutrients are needed, the fermenter needs to be opened and the must vigorously stirred to knock CO₂ out of solution, and then the nutrients can be stirred in. This stage is also a good time to measure gravity, temperature, and pH, typically right before nutrients are added.

PRO TIP

Feeding and caring for your yeast will ensure a healthy ferment, and because of the improved health, many yeasts will exceed their stated alcohol tolerance. This is something that should be factored into recipe design so that the amount of residual sugar conforms with expectations even when the yeast overperforms.

Degassing is very important—if you don't do it, there is a very good chance of a mead volcano as all of those powdered nutrients create nucleation sites for CO₂. Degas the mead until the foam doesn't grow or stick around at all.

Exploring and experimenting with this technique can take a couple of different forms. First, the calculations used to determine nutrient requirements assume zero nutrients exist in the raw must, and for 100-percent honey and water ferments, this is often true. But if fruit is added to the ferment, there may actually be an initial amount of nitrogen that the yeast will use as food. The journey here begins with being able to measure the nitrogen, typically expressed as yeast-assimilable nitrogen (YAN) and then use that as an input to a more complex calculation. Measuring YAN, or even roughly estimating it, is beyond the scope of this article, but the topic is ripe for exploration.

The second twist with nutrient application is overlaying the schedule for the intended ferment. Cool ferments, say in the range of 65°F (18°C), have a steady growth phase and fermentation progress that allow you to reliably add nutrients in one-day increments. If you ferment warm, or hot for that matter, the growth phase as well as the pace of the core ferment will move much faster, and your nutrient doses will need to be administered in shorter intervals—sometimes as often as 8 to 12 hours between additions.

TIP 4: EMPLOY TEMPERATURE CONTROL

When we select a yeast for our new mead, there is an optimal temperature range specified for it. While fermenting with yeasts above or below their optimal temperatures is of interest to meadmakers, cool fermentations are usually recommended, given the range of yeasts typically used. So, let's first consider maintaining a temperature at the cool end of the specified range.

Why would we do this? A number of different factors are often attributed to a cool mead fermentation, including

- Better retention of delicate aromas
- Lower potential for fusels and excess alcohol
- Lower potential for phenols, off flavors, and off aromas

Keep It Cool

I didn't use temperature control until eight years into my homebrewing journey, choosing instead to ferment based on the temperatures in my house in New

Brew This!

Strong, Sweet, Simple Mead

Recipe courtesy Jason Phelps.

This is a bare-bones recipe to create a strong, sweet mead.

Batch volume: 5 US gal. (18.9 L)

Original gravity: 1.146 (33.4°P)

Final gravity: 1.036 (9°P)

Alcohol: 14–14.5% by volume

HONEY

20 lb. (9.07 kg) clover honey

YEAST

15 g Red Star Côte des Blancs

MEADMAKING NOTES

Mix honey in fermenter with enough hot water to liquify. Top off to 5 gal. (18.9 L) with cold water. Mix well and take a gravity measurement. Sprinkle dry yeast on must, seal the container, and attach an airlock. Place in a cool 65°F (18°C) room. Signs of fermentation should be apparent within 24 hours, with rapid airlock activity expected within a couple days. Since we aren't providing any nutrients, no additional effort is needed until airlock activity subsides. When activity subsides, check the gravity. A stable (same value over days or weeks) gravity measurement at or near the estimated final value indicates that fermentation is complete.

Hampshire. When I finally integrated temperature control, it was by using an old refrigerator with a thermostat controller. This is a common solution for this technique, and many of the popular models of Johnson and Inkbird controllers available for under \$100 may also have support for warming with an appropriate heating solution. I typically control the ambient temperature of the chamber rather than the fermenting meads directly, most often because I ferment multiple containers at a time in the same space.

A popular range for home fermentation chambers is 63°F to 65°F (17°C to 18°C), a workable range for a good portion of the wine yeasts most often used to make mead. At these temperatures, most wine yeasts

will begin fermenting slowly and will consistently work through the available sugars until they are expended or reach their alcohol tolerance limit. Commercially, I am able to reliably ferment a 9% ABV mead to dryness in 12 to 14 days in this temperature range. For my cooler ferments, I am a big fan of Red Star Côte des Blancs, Lalvin D21, and Lalvin 71B-1122.

Using lower-than-expected or lower-than-tolerated temperatures, either on purpose or accidentally, can increase the chances of a stalled ferment. Most ferments that stall will restart quickly if the temperature doesn't stay too low for too long. Prolonged cold or freezing may result in the need to pitch fresh yeast.

Some yeasts can go lower—50°F to 55°F (10°C to 13°C), say—and all of them will go higher, often into the 80s °F (upper 20s °C), but be aware that many will produce extra esters and phenols, even in the low 70s °F (low 20s °C). Cooler ferments take longer than warmer ones, but as long as they don't stall, the cleaner outcome should be worth the wait. I've been thrilled with the aromatics of some of my cool-fermented meads, and happier still to have been able to plan for more of their retention by keeping the pace of the fermentation slow and cool.

Some Like It Hot

Warm mead fermentations are definitely not new, and historically they could have been more likely, especially in warmer parts of the world before refrigeration was common. Warm fermentations definitely proceed faster, leading to the completion of the primary fermentation stage sooner.

We need to consider fermentation byproducts that a warm ferment might create, and—once again—yeast selection to the rescue! Warm ferments lead to higher yeast metabolism and activity. Running yeasts hot, especially outside their preferred temperature ranges, can be a recipe for disaster. Sulfurs, phenols, fusels, acetone, and “jet fuel” off flavors are some extreme outcomes. More important, though, is the potential loss of aroma through rapid volatilization caused by the increased kinetic activity of a warm ferment. Losing these complex flavor attributes leads to faint aromas and thin, dry, lifeless meads.

We need to use yeasts that will produce desired aromas and flavors when fermented warm in order to ensure that we don't end up with a result that seems like it is fundamentally missing something. For my warmer ferments, I've had success with Lalvin QA23 and Lalvin D21, most often when making fruit meads with red and dark

Brew
This!

Better Yeast Management Mead

Recipe courtesy Jason Phelps.

This recipe makes use of a staggered nutrient addition [SNA] protocol to get more out of your yeast.

Batch volume: 5 US gal. (18.9 L)
Original gravity: 1.146 (33.4°P)
Final gravity: 1.036 (9°P)
Alcohol: 14–14.5% by volume

HONEY

20 lb. (9.07 kg) clover honey

OTHER INGREDIENTS

12 g	Go-Ferm
10 g	Fermaid-K, divided into 4 additions
2.5 g	diammonium phosphate [DAP], divided into 4 additions
20 g	yeast hulls, divided into 2 additions

YEAST

15 g Red Star Côte des Blancs

MEADMAKING NOTES

Mix Go-Ferm into 8 oz. (240 mL) of 110°F (43°C) water. Let temperature fall to 104°F (40°C) or lower, add yeast, and stir gently. Allow to sit for 10 minutes. Meanwhile, mix honey with enough hot water to liquify it in fermenter. Top off to 1 cup (240 mL) short of 5 gal. (18.9 L) with cold water. Mix well. Take a gravity measurement.

Stir the yeast slurry. Add a couple of ounces (30–60 mL) of the mead must to the yeast slurry and allow to sit 5 minutes. Once the temperature difference between the yeast slurry and the must is less than 18°F (10°C), add the yeast slurry to the must. Seal the container and affix an airlock. Place in a cool 65°F (18°C) room. Signs of fermentation should be apparent within 8–12 hours, with rapid airlock activity expected within a day or so.

On days 1, 2, and 3, open the fermenter and vigorously stir the mead to remove CO₂ prior to adding nutrients. This is also the time to measure gravity. Add Fermaid-K and DAP on days 1 and 2. Add Fermaid-K, DAP, and yeast hulls on day 3 and when 1/3 of the sugar has been consumed, i.e. specific gravity has fallen to around 1.072 (17.5°P). No additional effort is then needed until airlock activity subsides. When activity subsides, check gravity. A stable (same value over days or weeks) gravity measurement at or near the estimated final value indicates that fermentation is complete.

fruits. Even after a warm, vigorous ferment, there is still an abundance of complex fruity aromatics with these yeasts—exactly what we are looking for.

One thing to remember is that we'll need to feed warm ferments more aggressively and compress the nutrient regimen into spans of hours versus days in some cases.

In summer of 2019, I experimented commercially with HotHead and Hornidal Kveik yeasts, both from Omega Yeast Labs. I fermented both mead and cider with these strains and was pleasantly surprised at how little sulfur there was, especially in the cider, and how clean, fruity, and distinctive the outcomes were. The fermenta-

tion temperatures were 88°F to 92°F (31°C to 33°C)! Reaching 100 percent attenuation in 48 to 60 hours is another great benefit for a young, growing business.

TIP 5: UNLOCK NEW CONCEPTS WITH HONEY VARIETALS AND BLENDS

I've saved the most fun tip for last: experimenting with different honeys. Making better mead is also about making different meads, making distinctive meads, and making new meads. One of the best ways to change up your meadmaking is to use different honey varietals, either on their own, or as part of a blend.

At my meadery, Ancient Fire Mead & Cider in Manchester, N.H., we have a honey tasting bar where we rotate a selection of honeys from all around the world for visitors to try. Some of these are samples we get from vendors we work with, and others are sourced from local and small

apiaries that have varieties we want to learn more about. This is an exciting journey and coming across new honeys from around the world is a great adventure.

I've come to love a wide variety of honeys, and my favorites include mesquite, raspberry, and blueberry—I use them all frequently.

I especially love the earthy, fruity flavors in mesquite blossom honey, and I've used it to make chile-infused meads with distinctive character for almost a decade.

Raspberry blossom honey is fruity with gingerbread-like spice, and I often pick up a tea-like quality in the finish. This honey is a bit more delicate than other varieties I use frequently, but because of that, it provides a great base and backdrop for the fruits and spices you want to highlight.

I find blueberry blossom to be a bit more "wild" and "leafy" than raspberry, often with a streak of citrus in the finish. It is more floral as well, but still with a juicy fruitiness at the core. I typically pair blueberry blossom with other ingredients that will not overpower it, like citrus and herbs, allowing the wilder honey attributes to contribute more to the finished profile.

Having tried different wildflower honeys from a number of sources, I've found that I prefer the darker wildflower honeys, especially my local, late-season ones. Rich, darker honeys are on a short list of varieties that I often use in blends, much as brewers use specialty malts in percentages of 5 to 30 percent of the total grain bill. The more depth of character a honey has, the lighter a touch can be used while still gaining a noticeable influence even from amounts as low as 5 to 10 percent. Buckwheat and avocado blossom honeys are incredibly dark and rich, allowing for a wide range of interpretation. The base honey for my blends is typically wildflower or a mix of clover and wildflower, but there is plenty of room for interpretation here, too.

GO FOR IT!

When you've got some really great mead on your hands, don't forget to enter homebrew competitions to get feedback and, hopefully, win some hardware to recognize your craft. Even better, study and get certified as a BJCP Mead judge. Not only will you be able to better evaluate your own meads, but you'll be exposed to many more that are both interesting and delicious. Oh, the inspiration!

If you aren't part of a homebrew club, search for one. Sharing your creations with other craft enthusiasts is fun, and you can learn a lot about your meads and others. Many clubs also have BJCP-certified judges who can offer experienced feedback. Every little bit helps with new projects.

Jason Phelps is cofounder and co-owner of Ancient Fire Mead & Cider in Manchester, N.H., which produces draft-style meads, wine-style meads, and ciders, all of which can best be experienced with a taproom visit.



Yeast is your workforce, and taking care of it ensures you get the most out of its work.

Brew
This!

What a Blend! Mead

Recipe courtesy Jason Phelps.

This recipe offers an opportunity to work with several kinds of honey. Feel free to adjust the relative proportions according to your taste preferences.

Batch volume: 6 US gal. (22.7 L)
Original gravity: 1.147 [33.6°P]

Final gravity: 1.025 [6.3°P]
Alcohol: 16% by volume

HONEY

10 lb. (4.54 kg) wildflower honey
10 lb. (4.54 kg) clover honey

2.5 lb. (1.13 kg) avocado blossom honey
1.5 lb. (680 g) buckwheat honey

OTHER INGREDIENTS

12 g Go-Ferm
10 g Fermaid-K, divided into 4 additions

2.5 g DAP, divided into 4 additions
20 g yeast hulls, divided into 2 additions

YEAST

15 g Lalvin ICV D21

MEADMAKING NOTES

Mix Go-Ferm into 8 oz. (240 mL) of 110°F (43°C) water. Let temperature fall to 104°F (40°C) or lower, add yeast, and stir gently. Allow to sit for 10 minutes. Meanwhile, mix honey with enough hot water to liquify it in fermenter. Top off to 1 cup (240 mL) short of 5 gal. (18.9 L) with cold water. Mix well. Take a gravity measurement.

Stir the yeast slurry. Add a couple of ounces (30–60 mL) of the mead must to the yeast slurry and allow to sit 5 minutes. Once the temperature difference between the yeast slurry and the must is less than 18°F (10°C), add the yeast slurry to the must. Seal the container and affix an airlock. Place in a cool 65°F (18°C) room. Signs of fermentation should be apparent within 8–12 hours, with rapid airlock activity expected within a day or so.

On days 1, 2, and 3, open the fermenter and vigorously stir the mead to remove CO₂ prior to adding nutrients. This is also the time to measure gravity. Add Fermaid-K and DAP on days 1 and 2. Add Fermaid-K, DAP, and yeast hulls on day 3 and when 1/3 of the sugar has been consumed, i.e. specific gravity has fallen to around 1.072 [17.5°P]. No additional effort is then needed until airlock activity subsides. When activity subsides, check gravity. A stable (same value over days or weeks) gravity measurement at or near the estimated final value indicates that fermentation is complete.



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In Praise of Small Things

Small Mead after Digbie

By Anita L. Hawkins





Who is Digbie? That would be one Sir Kenelme Digbie (or Digby), the supposed author of a 1669 English cookery book that contains one of the earliest published collections of mead recipes. There are dozens therein worthy of perusal, from basic meads to herbal metheglins. I've been riffing off his basic recipe for small mead, "Weak Honey-Drink," for several years now.

While mixing up batches of small mead to take on my family's annual camping trip in Maine this past summer, dropping backyard flowers and fruits into jugs, I felt inspired to spread the knowledge of this deserving but little-known mead style. Here's why my fellow homebrewers should give small mead a try.

It's the ultimate outlet for spontaneous brewing. Ready to drink in just a few days, small mead is the ultimate "no worries" summer brew. I always intend to make a few batches a week or two before our annual camping trip, but I inevitably make them the day before we leave! With plastic bags secured over the airlocks with rubber bands to make them travel ready, the fermenters spend a few days bubbling away by the canvas walls of our tent before we share them with brew friends.

Small mead is simple compared to most meads. Yeast nutrient is not required—17th-century stores didn't stock it—nor is any special alcohol-tolerant yeast needed. Use whatever basic ale yeast you have around the house, or use the settled yeast from a previous batch. A starter cul-



Line engraving of Sir Kenelm Digby by Burnet Reading after Anthony van Dyck.

ture is not unnecessary for such a small volume, and a 1-gallon (3.8-liter) cider jug suffices for fermentation in most cases.

Small mead is adaptable: just add whatever flavors, herbs, flowers, or fruits you love. Digbie suggests a number of herbs to add to various "meath" (mead) styles. Some are common weeds, while others are used as modern herbs for cooking or fragrance. In his words, "You may use what Herbs or Roots you please, either for their tast or vertue, after the manner here set down."



DIGBIE'S WEAK HONEY-DRINK, 1669

More commonly called Small Mead

Digbie drops a few names along the way, offering recipes for metheglin (any mead flavored with herbs), giving directions for "White Metheglin Of My Lady Hungerford: Which Is Exceedingly Praised" and "Mr. Webbes Meath: Master Webbe, who maketh the Kings Meathe, ordereth it thus." Unsprayed fragrant garden flowers can be lovely, too, but confirm they are edible, first! Just because it's pretty doesn't mean it's not nasty or poisonous (a reliable list may be found at WhatsCookingAmerica.net). Organic fruits or juices, singly or in combination, expand the possibilities.

As a "weak honey drink," small mead uses a lower amount of honey, which means you can indulge in fancy local or imported varieties. A single batch of about 3.5 quarts uses just 1.5 pounds of honey (700 grams in 3.3 liters). The original recipe with orange peel and ginger gives fine results even with ordinary supermarket clover or wildflower honey.

Small mead is fun to drink and liked by nearly all who try it. Lightly sweet and effervescent, the low alcohol means you can enjoy a tall glass cheerfully (or two!). The basic recipe is in the sidebar, but things really get interesting when you adjust the formulation to celebrate the seasons.

SUMMER

To prevent heating and humidifying your house in warm weather, simply bring 3 quarts (2.8 L) of water just to a boil before adding flavorings. The lighter honeys and clear flavors of summer herbs and fruits don't need the caramelizing effects of a long boil. You might want to use filtered honey, as a shorter boil won't allow much time to skim rising debris.

Enjoy the refreshing effects of the basic ginger-citrus small mead by pouring it straight from the fermenter during active fermentation into a chilled glass. Then start a new batch and have fun in this "play-ground" of mead!

MiniMaiMead

Try this version in May, or whenever local strawberries are in season. Use the basic recipe, with these changes.

- **Honey:** use orange blossom, acacia, or linden (or any filtered, light-colored honey with a floral note)
- **Ginger:** omit
- **Citrus:** use peel of half a lemon
- **Add with citrus:** 1 cup (240 mL) strawberries, halved or quartered if large (OK to leave leafy hulls on). Strain these

Take nine pints of warm fountain water, and dissolve in it one pint of pure White-honey, by laying it therein, till it be dissolved. Then boil it gently, skimming it all the while, till all the scum be perfectly scummed off; and after that boil it a little longer, peradventure a quarter of an hour. In all it will require two or three hours boiling, so that at last one third part may be consumed. About a quarter of an hour before you cease boiling, and take it from the fire, put to it a little spoonful of cleansed and sliced Ginger; and almost half as much of the thin yellow rinde of Orange, when you are even ready to take it from the fire, so as the Orange boil only one walm in it. Then pour it into a well-glased strong deep great Gally-pot, and let it stand so, till it be almost cold, that it be scarce Luke-warm. Then put to it a little silver-spoonful of pure Ale-yeast, and work it together with a Ladle to make it ferment; as soon as it beginneth to do so, cover it close with a fit cover, and put a thick doubled woolen cloth about it. Cast all things so that this may be done when you are going to bed. Next morning when you rise, you will find the barm gathered all together in the middle; scum it clean off with a silver-spoon and a feather, and bottle up the Liquor, stopping it very close. It will be ready to drink in two or three days; but it will keep well a month or two. It will be from the first very quick and pleasant.

Taken from *The Closet of the Eminently Learned Sir Kenelme Digbie Kt. Opened: Whereby is Discovered Several ways for making of Metheglin, Sider, Cherry-Wine, &c. together with Excellent Directions for Cookery: As also for Preserving, Conserving, Candyng, &c.* First edition, London, 1669. Page 107.

The full text of the 1910 edition, including a delightful biography of the learned Sir by Anne MacDonnell, is available at Project Gutenberg: gutenberg.org/files/16441/16441-h/16441-h.htm

out after cooling rather than transfer to the fermenter, as they discolor quickly.

- **Optional to add with citrus:** one small, whole vanilla bean.
- **Add with yeast:** about 10 stems, 4 to 6 inches (10 to 15 cm) long of washed fresh or dried sweet woodruff (*Galium odoratum*) leaves with or without blossoms.
- **Serve** with a slice of fresh strawberry in the glass if you like.
If you can't find or don't care for sweet woodruff, alternative herbs include basil,



lemon balm, lemon thyme, pineapple sage, chamomile, borage, and lavender (reduce the amount by half if using lavender, as it can be overpowering).

I prefer not to add green herbs to the boil as Digbie suggests in other mead recipes, as I find it reduces their characteristic flavors and lends a "cooked spinach" undertone and a brownish color, but you may do as you please. Woody herbs such as rosemary (just a sprig or two—it's powerful!) may benefit from a brief boil and can be added with the citrus. Otherwise, tie fresh herbs in a bundle with string long enough to suspend in the fermentation vessel, or enclose in a cheesecloth bag before adding. Then you can remove them after a day or so, whenever the strength of the herbal flavor is to your liking, or when they lose their bright green color.

Later in the summer, if you have a garden—or a friend with a garden—collect leaves and flowers from unsprayed herbs, fruits, and vegetables to add to your fermentation. Why not celebrate the unfolding of each new week's growth with a fresh batch of small mead?

FALL

As summer wanes, many beekeepers will harvest their last honey, so this is a great time to seek out local honey (check out BeeCulture.com for a directory of North American beekeepers' associations). And as the harvest comes in, watch for fruits that would sit well in a small mead. Blackberries are wonderful! Add a pint



Brew
This!

Small Mead after Digbie, Modern Version

Use the citrus peel you prefer: half an orange or lemon, a whole tangerine, a quarter of a grapefruit, etc. Just use the outer colored part; remove the white inner pith, which can be very bitter. Please choose organic citrus. The peel will boil and soak in your beverage for some time, and it's difficult to completely clean pesticide residues from the peel.

Fear not if you have no "warm fountains" as Digbie suggests—filtered tap or spring water will do just fine.

HONEY

1.5 lb. [680 g] unfiltered raw local honey if you can get it

WATER

4.5 qt. [4.3 L] filtered tap or spring water

ADDITIONAL ITEMS

1 in. [2.5 cm] chunk ginger root, peeled and sliced
citrus peel

YEAST

Any basic neutral ale yeast

MEADMAKING NOTES

Boil about 2 hours, uncovered, to reduce volume by 1/3. Skim any foam or debris that rises to the top (there may be very little if your honey is filtered). Add ginger and boil 15 minutes longer. Add citrus peel, remove from heat, and place lid on boil kettle to retain some volatiles.

Cool must to lukewarm with lid on. Simply leaving overnight in a cool place with the lid tightly fitted is fine if that fits your schedule. Transfer must to a clean, sanitized 1-gallon (3.8-L) or larger glass jar or small carboy, scooping or filtering the ginger and peel. As with any fermentation, be sure there is sufficient airspace for vigorous bubbling, and if using fruits or chunky spices, be sure they don't reach and block the airlock.

Pitch yeast after the must is below about 85°F (29°C). A portion of the settled yeast from previous batches can be used—this slurry will keep at refrigerator temperature for several months. Swirl vigorously to aerate and fit with an airlock. Keep at room temperature, 60–70°F (16–21°C), for initial fermentation, which should begin within a day. Vigorous fermentation should ensue for perhaps a week, before slowing.

You can pour young, vigorously fermenting small mead directly from the fermenter into a chilled glass to drink if you don't mind the haze. After fermentation settles down, you may choose to bottle it by racking to plastic soda or seltzer bottles and storing them in the refrigerator. Squeeze the sides of the bottles to push the liquid level up and minimize airspace. The mead will gradually clear but continue to slowly ferment. Loosen the caps to release accumulated CO₂ if the bottles begin to bulge a bit.

In Digbie's time, "stopping it very close" with cork or leather was not a hermetically sealed bottle as is possible with current caps or swing tops. Do not bottle this in modern crown-capped glass bottles! At best, opening them will create a geyser that wastes your precious small mead. At worst, your bottles will explode, potentially causing harm and also wasting your beverage. (Don't ask me how I know this.)

If you are carrying small mead to a gathering and desire a classier presentation, transport it in a stable position to minimize jostling—chilled, in plastic soda bottles—and then transfer to a clear glass bottle with a removable stopper after arriving at your destination. A wine bottle will do, as will a clear 1-liter bottle with a swing-top closure.

This mead is best consumed within a month or two. Some bottles that I "lost" in the back of the refrigerator for a few months had definitely developed some off flavors. With the low alcohol content, there is also the possibility of growing undesirable microbial colonists over time, so drink it up soon!

with the citrus in the basic recipe, along with a few whole cloves. And if you insist on making a pumpkin spice small mead, well...let me know how it turns out.

Winter is Coming Small Mead

As fall moves into winter, try this recipe, using the basic recipe, with these changes:

- **Honey:** wildflower, preferably local
- **Ginger:** omit
- **Citrus:** peel of a tangerine or clementine
- **Add with citrus:** 3-4 tender tips of white pine or balsam fir foliage
- **Add with yeast:** rescue the last few rose petals or buds before the first frost; if you have no rose garden, add dried rosebuds with the citrus (try Middle Eastern markets or online) or a splash of rosewater

If your house temperature is cool, place the fermenter on a thick blanket or towel, wrap it with another, and keep it near a heating vent or radiator for the initial fermentation. Later, this mead can be served straight from the fermenter if stored in a cool corner at "cellar temperature."

WINTER

Thanks to modern transport and markets, there is no need to limit ingredients to what was once seasonally available in your area. Still, it's fun to experiment with the darkest season's riches: dried fruits add depth to a small mead, and many spices go well with darker honey. Warming spices add a nice note: try cinnamon, cloves, or the stub left from a whole nutmeg after grinding it into your eggnog. Use whole spices, as powdered spices tend to float and look like dirt. Add them with, or in place of, the ginger root in the basic recipe. Try not to use too much—half a stick of cinnamon, for instance, is plenty. If you put them into the fermenter, taste test your mead occasionally to see if the flavors are becoming too strong and, if so, remove the spices.

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Winter is also a great time to explore international or ethnic markets in your area. Look for unfamiliar spices (galangal, grains of paradise), fruits (pomegranates, dragon fruit), or honeys (eucalyptus, thyme). Read up on these ingredients and the cultures that use them, and then toast them with a glass of your small mead.

Figgy Pudding

Use the basic recipe, with these changes:

- **Honey:** buckwheat or dark wildflower
- **Ginger:** use slices of candied (crystallized) ginger if fresh is hard to find
- **Add with ginger:** half a stick of cinnamon, a nubbin of nutmeg, a few blades of mace (optional), 3 or 4 dried figs, quartered, and 3 or 4 dates
- **Citrus:** peel of half an orange

Note that the figs and dates, if they go into the fermentation vessel, will eventually settle as an unattractive (if tasty) sludge. Pour the small mead off the muck to serve or bring it out in opaque mugs rather than glasses.

SPRING

As the days begin to lengthen, welcome the return of the sun with bright colors and flavors in your small mead. If you're busy with spring cleaning and planting, use herbal tea bags and/or deeply flavored, preservative-free, 100-percent fruit juices to add flavor and color to your easy springtime small mead.

For Your Honey -

A Valentine's Day Small Mead

Use the basic recipe, with these changes:

- **Honey:** clover
- **Ginger:** omit
- **Citrus:** peel of half a lemon
- **Add with citrus:** a few dried hibiscus flowers, or an herbal tea bag with hibiscus as a major ingredient (Celestial Seasonings Red Zinger is a good one)
- **Add with yeast:** 1 cup (240 mL) deep red 100% fruit juice like cherry, pomegranate, or red currant

Continue to explore the possibilities of this quick and easy beverage, which will be "from the first very quick and pleasant," as Digbie says, and raise a glass to the bees!

Anita L. Hawkins has been indulging her passion for making brews, bread, and yarn in the Mid-Atlantic and New England states for several decades. She currently resides in central Connecticut with her husband and chief taster, Craig, within view of the Connecticut River, whose water is definitely not suitable for brewing.

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In the Land of Mead and Honey

BJCP Mead Judge Exams in Israel

By Scott Kurtz

Mead. It's theoretically the oldest alcohol known to humankind, and one of the first mentioned in written history throughout Europe, Asia, and Africa. As a drink preferred by philosophers, chieftains, pharaohs, and kings and queens of old, there's a sense of irony that the one continent with the shortest written history with it, North America, now has the most BJCP Mead judges. BJCP Master judge Omer Basha of the Homebrewers Guild of Be'er Sheva in Israel felt that needed to change.

"It's been two years since we introduced the Beer Judge Certification Program into the country," said Omer. "One of the main effects of having local trained and certified beer judges was a great leap in the level of beers entered into competitions. Two years after the first BJCP-sanctioned competition, we started accepting cider and mead entries and realized there was a great gap from beer in both the level of the entries and judging."

A NEED FOR MEAD

While beer and mead are judged under specific BJCP guidelines, and judges look for some of the same flaws they do in beer, there are fewer style categories for mead, but much more room left for an extremely broad choice in the ingredients.

Let's take a quick step back and look at one of the differences between beer and mead: the base ingredients. To start, a beer brewer, if he or she chooses to brew a beer style such as an Irish stout, has to stick to a specific range and quantity of barley, hops, adjunct malts, and yeast to create a beer that matches up with the BJCP guidelines. If a meadmaker wants to make a simple traditional mead (also known as a show mead), which consists only of honey, water, and yeast, there are more than 300 recognized varieties of honey to choose from in the United States alone, according to the National Honey Board website. Even wildflower honey can be different in its flavor and aroma composition, depending on the region and terroir of the land the bees harvest.





"Honey is very important in the Jewish culture," said Ohad Boxerman, a homebrewer in Be'er Sheva and a National-ranked BJCP judge. "Israel is said to be the land of milk and honey; it's what we bless at New Year's so that we'll have a sweet year to come. I also have a cousin who's a beekeeper, and I prefer using honey where I trust the source. And being such an expensive source of sugar, getting a good deal from a cousin goes a long way. I prefer making meads where the honey and honey complexity are the main focus."

Taking all that into account, if a meadmaker decides to go beyond traditional mead, adding into the must things such as apples (the United States has more than 2,500 varieties of apples, and 7,000 exist worldwide according to the University of Illinois) or grapes (estimated total varieties across the globe are around 10,000), the possibilities for flavor and aroma are limitless.

"I made my first mead about four years ago," continued Ohad. "As a beer brewer, my friends with a gluten-free diet requested a drinkable option. That was why I got into ciders and later to mead. There weren't many mead options on the market and producing one had to use some imagination. I made it a learning experience for myself and a friend who was interested in helping out. He concocted a spice blend with whiskey, and I was in charge of the fermentation. He chose Power's (an Irish whiskey) and allspice, along with cinnamon, cloves, nutmeg, and vanilla as the spices. I chose a local wildflower honey. This same mead got second place in a local competition here."

Considering all these factors, judging one of the 13 categories of mead in the BJCP mead guidelines is quite subjective.

Based on the intensity and terroir of the ingredients, it is more akin to judging wine than judging beer. Despite this, time is still needed to train potential judges to evaluate all those flavors and aromas, and also to identify the ones that shouldn't be there. Sherry notes are created by oxidation, while sulfur aromas arise from unhappy yeasts or autolysis. With all this in mind, Omer decided to put a plan into motion.

"Since my mead knowledge was very little at the moment, I coordinated a plan with Shmuel Nakry, who is one of the leaders of the meadmaking community in Israel and owns a homebrew shop in Jerusalem, where he lives, named Biratenu."

"I was making mead for three years before I started making beer," said Shmuel. "I got to know the BJCP beer guidelines well before I even thought there was such a thing for mead. In the last several years, with some guys taking BJCP exams and Biratenu conducting a mead competition, I stumbled upon the mead guidelines. It was Omer that inspired me and others to follow and set up a study group for the mead exam."

PREPARATIONS

Omer set a date for the exam—September 13, 2019—and the study group began gathering judges and meeting at Biratenu over the summer to prepare.

"To prepare for the mead exam, Shmuel and I organized a five-part mead exam prep course. The topics were similar to the proposed course on the BJCP website with the addition of an off-flavor workshop at the end of the course. In every meeting, I gave a lecture about a topic in meadmaking and judging followed by evaluating four meads and discussing the scoresheet notes. The topics discussed were an introduction to mead evaluation, meadmaking process, mead ingredients, competitions, the mead scoresheet, and, finally, troubleshooting. In

addition, I gave personal feedback for any participant who asked."

"I decided to join the group because I like to explore and learn more about fermentation," commented Ohad. "I've been a beer judge for two years now and achieved the National rank this past June. The study group was great; it was different from my beer knowledge and experience. We met once a month, so it wasn't too much for my schedule. My favorite meeting was the honey and fruit tasting. We had six or more honey varieties, and it was amazing tasting them side by side."

While setting up the study classes was simple enough, another part of the equation was a little more difficult to solve.

"The BJCP outside of the USA is a very different organization," said Omer. "We do not have local high-ranking judges who are able to proctor exams, so the biggest challenge was finding proctors who would be willing to fly over from the USA for the exam. In fact, I only scheduled the exam after I found two proctors. Sadly, one of the proctors had to cancel because of work obligations, but luckily, I earned the Master rank the week of the exam, so I could proctor instead. In fact, another reason to hold this exam is so that we Europe, Middle East, and Africa homebrewers can become more independent in administering BJCP exams. So far, we have two judges who are pre-approved as beer tasting exam proctors, and hopefully after this exam we will have mead proctors for future ones."

For my part in this story, I saw Omer's post that he was looking for qualified proctors in the BJCP Europe, Middle East, and Africa (EMEA) Facebook group in 2019. I scored high enough on my mead tasting exam in 2018 to qualify as one, and as I'd be proctoring another mead tasting exam in St. Louis the month prior to Omer's, I reached out and volunteered to help. The result? On September 11, 2019, I flew



out of Lambert Airport in St. Louis for my first trip ever to the Middle East and my first time ever traveling internationally as a BJCP judge.

ARRIVAL

After a connecting flight in Newark and more than 10 hours over the Atlantic and Mediterranean, I landed a little bit after noon at Ben-Gurion International Airport in Tel Aviv. I would be meeting one of the local judges and other members of Tel Aviv's homebrew community later that night, so at Omer's advice, I dropped my bags off at my Airbnb, channeled Anthony Bourdain, and headed over to Tel Aviv's Carmel Market.

Established in the 1920s, Carmel is the largest market, or *shuk*, in Tel Aviv, and it closes only on Shabbat, the Jewish Sabbath. Stretching from King George Street at the north end to the Carmelit bus stop at the south end, it's a true sensory experience unique to the Middle East. While walking around, I saw everything from freshly butchered livestock and chicken to dried fruits and vegetables, marzipan candies, Turkish delight, underwear, and cell phones. Even the side streets had a variety of things to offer, with smells of fresh fruit, pastries, and grilled meat wafting up and down the alley. Carmel Market had everything for sale.

After making my first purchase in Israel, a large cup of freshly juiced lemonade, I set off in search of a beer. I found a little stand around the upper middle section of the market called the Beer Bazaar and grabbed an IPA. While it still had an American hoppy flavor and aroma, there was a difference. It had more fruity esters with a sharpness on the back end from high mineral content in the water. It was still extremely enjoyable and immediately washed away any fears I had of being alone overseas.



A few hours later, after sitting on a boardwalk bench near HaKnesset Square and watching the sun set over the Mediterranean Sea, I walked back over to the Carmel Market to meet and have dinner with Alexey "Alex" Potekhin, a BJCP judge in Tel Aviv and my guide to food and alcohol for the evening. Our first stop? M25, a butcher shop and restaurant with a claim to the best steaks and beef in Tel Aviv.

"M25 is one of the top kosher beef places in Tel Aviv" said Alex as we were served a couple pints of Malka, an amber ale from

one of the local craft breweries. "The dish you're going to try tonight, sinnia, is grilled over open flame along with the onions and potatoes. What makes it and M25 such a different take on kosher meat is the different seasoning and spices they use. The menu also changes on a daily basis as well."

The sinnia came out a perfect medium rare, with the potatoes and onions having plenty of flavor from the open flame grill, and all were served with a pleasantly creamy hummus. As we ate, Alex and I talked about why we became BJCP judges.



"I've been involved in the homebrew community here in Israel since 2008 or 2009. I'd always had a good feel of how things should taste or smell in craft foods and drinks, and the owner of the craft beer store I was working at the time, Beer and Beyond, always encouraged us to keep trying new things and learn more about beer and brewing. I'd homebrewed several times when my friend Ephraim Greenblatt, who owns Hatch brewpub, encouraged me to study for and take the first BJCP beer tasting exams here in Israel. Ephraim is originally from the US and was one of the people responsible for helping grow the homebrew scene here. And I've been judging ever since. It's amazing to see how much it's (homebrewing and beer) grown over the past couple of years. It hasn't been easy with some of the laws and how to explain it to people, but it keeps getting better and better."

After a filling meal that definitely lived up to the hype, the next stop was the full-size Beer Bazaar brewpub near the center of the market to meet with Alex's friends Lior and Daniel, the latter of whom brought along a sour beer he was working on. As we walked over, the vendors started closing up their stalls while the restaurants and bars expanded their seating arrangements.

"This happens most nights except for Shabbat," said Alex. "The restaurants and bars are open during the day, but at night they set out more tables and chairs and take over the streets and side streets. The weather here is pretty good most of the year so we take advantage of it."

As Lior and Daniel showed up, we began trying out Beer Bazaar's different offerings. Their lager had fermented a little on the warmer side but was still very clean and drinkable, while their take on rauchbier had a subtle but pleasant and familiar smokiness to it. Daniel's sour had recently taken second place in a homebrew competition in Tel Aviv and used local flowers for

a taste that could rival commercially made hibiscus sours in the US.

The last stop on our itinerary was the Dancing Camel Brewery, the first craft brewery in Israel and one holding a special place in Alex's heart.

"Dancing Camel was started up around 2007 to 2008 by David Cohen, another American who thought Israel would be a good place to start making craft beer. It was a very slow process, as not only he had to really explain to the local authorities what he was trying to do, he was also not an Israeli native. Once he was up and running, he was able to have the bar open on Fridays and more often during the week. I've been helping him out for a while now, and a couple of years ago I came in one night and saw they had a new bartender from New York named Raphaella. After we dated for a few years, one night in the back of the brewery I asked her to marry me."

Raphaella arrived soon after we did, and after introductions she took me up to the bar to order a flight with her recommendations. While all the beers were delicious, two stood out more than others: Old Papa and Gordon Beach Blonde.

"Old Papa is an old ale that uses date honey in the mix, and Gordon Beach is a blonde ale that uses rosemary and mint," said Raphaella. "Mint is used in a lot of Mediterranean dishes, and as we have a hot climate here it makes for a really refreshing beer."

And it did. Even after the beer had warmed to ambient temperature while the group gathered and talked, the mint still gave the beer a cooling flavor, and the aroma from the rosemary kept me coming back for more. It was hands down the best beer I'd had all night. As midnight approached, jet lag started to kick in and I got a ride back to my Airbnb. My mind wanted to keep going, but in the end, an out-of-whack internal clock and drowsiness from multiple beers won out.

"Hopefully after this exam we will have pre-approved mead tasting exam proctors so we will be able to hold a mead course and exam once a year."

EXAMINATION

The next morning, I found my way over to the Tel Aviv HaShalom station and hopped on the next train for a trip through the Israeli countryside and to Be'er Sheva, where Omer was holding the exam. An hour or so later, I was in Ohad's car on the way over to Omer's house. There, I met Omer for the first time, along with the other examinees: Yisrael Atlow, Zvi Sharon, Ephraim Greenblatt (owner of Hatch brewpub in Jerusalem), Dvir Flom (owner of Basha-Flom Brewery), Amit Arnon, Gilad Ne-Eman (owner of Brew Shop Israel in Be'er Sheva), and one of the key people responsible for the exam, Shmuel Nakay (owner of the Biratenu homebrew shop and brewery in Jerusalem).

After introductions and a friendly greeting from Omer's Alaskan malamute, Dido, everyone received their instructions while Omer and I sequestered ourselves upstairs to evaluate the exam's meads provided by local homebrewers. There was a traditional dry mead, a cyser (mead made with apples or apple juice), a blueberry mead, a





Brew
This!

Desert Gold

Semisweet Traditional Mead

Recipe courtesy Scott Kurtz, Saint Louis, Mo., STL Brewminati, St. Louis Brews, St. Louis Area Homebrewers Guild, Route 66 Outlanders.

I decided to use the Almost Mesquite Honey from Trader Joe's on a whim years ago. It became a favorite of a woman very special to me and has been my most successful mead to date, with multiple awards:

Best in show, Mead/Cider, 8 Seconds of Froth 2019

Gold medal, Mead Category, Hammerdown Brew Cup 2019

Gold medal, Traditional Mead, Hoppy Halloween 2019

Gold medal, Mead Category, Bluff City Brewers Annual Homebrew Competition

1st place, Traditional Mead, National Homebrew Competition First Round 2017

Batch volume: 5 US gal. [18.9 L]

Original gravity: 1.090 [21.6°P]

Final gravity: 1.020 [5.1°P]

Color: 2–5 SRM

Alcohol: 8.5% by volume

HONEY

12 lb. [5.44 kg] mesquite honey

YEAST

Fermentis SafAle S-04

ADDITIONAL ITEMS

Fermaid K

diammonium phosphate (DAP)

Go-Ferm

potassium sorbate and metabisulfite

bentonite

medium-toast French oak acid blend

MEADMAKING NOTES

Rehydrate S-04 in 12.5 g Go-Ferm. Dissolve honey in water and ferment at 65°F (18°C). Degas once a day for one week.

Add 2.4 g Fermaid K and 4.5 g DAP on days 1, 2, and 3. Add 2.3 g Fermaid K and 4.5g DAP at 1/3 sugar break [1/3 of available sugars have been consumed] or on day 7. Slowly add 4 tsp. [20 mL] bentonite on day 3.

Add sulfite and sorbate when gravity reaches 1.020 and cold crash. Transfer to keg and add acid blend to taste. Age until clear on 1/4 oz. [7 g] French oak. Carbonation optional.

metheglin (spiced mead) made with cacao and coffee, a traditional sweet mead, and a pyment (mead with grape juice) made with local grapes. While each had minor issues, whether intentional or not, they were still drinkable. The last two meads were on the overly sweet side, but Omer showed me a trick he'd learned a while back to fix that

after we had finished our evaluations.

"I found out from another meadmaker that a drop or two of lactic acid in an overly sweet mead can open it up considerably," said Omer. "It's surprising how big of a difference it makes." And he was right. The pyment, while presenting a pleasant red-grape background, had a little too much



Brew
This!

Primordial Plot

Dry Sparkling Cyser

Recipe courtesy Shmuel Naky, Biratenu, Jerusalem, Israel

Brewed for Rosh Hashana, a Jewish holiday that features a traditional dish of apples and honey.

Batch volume: 60 L [15.9 US gal.]

Original gravity: 1.100 [23.8°P]

Final gravity: 1.000 [0°P]

Color: 2–5 SRM

Alcohol: 12% by volume

HONEY & FRUIT

20 kg [44 lb.] citrus blossom honey

15 kg [33 lb.] mixed sweet and sour apples

YEAST

Lalvin EC-1118

ADDITIONAL ITEMS

30 Madagascar vanilla beans

diammonium phosphate (DAP)

medium-toast French oak

MEADMAKING NOTES

Ferment apple and honey must at 20°C (68°F) for three weeks, with staggered nutrient addition for the first three days with DAP only. When complete, press apples and move to secondary on top of vanilla beans and medium-toast French oak. Filter and force carbonate in kegs.

sweetness and not enough tannin or acid to balance it out. A single drop of lactic acid in the plastic sample cup changed that instantly, and the red grape character broke through with a flavor that reminded me of a sweeter Pinot Noir.

"The meads chosen for the exam were versatile and showed a wide range of mead

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styles," said Ohad. "I'm sure finding them in Israel was really hard and a big shout out should go to the person who found them. The study groups and the exam really made me think about a couple of meads I'd like to try out and also try to create myself."

Once the exam was done, we opened up a pair of meads I'd brought along from Missouri. One was a sweet mesquite mead of my own creation that picked up a couple of gold medals during the spring; the other was a personal favorite, a blueberry blossom mead from Martin Brothers Winery in Hermann, Mo. The blueberry blossom mead was a big hit with the examinees.

"Most of the mead you can find in Israel is made by homebrewers," said Gilad. "We currently only have one commercial mead available."

CULTURED TASTING

Next up, after the exam, was a visit to Gilad's homebrew shop and bar, then to a falafel stand a few doors down. During this time, Gilad told me about the origins of Brew Shop Israel and why he took the exam.

"Before I opened the brew shop, I was one of the founders of the Homebrewers' Guild of Beer Sheva," said Gilad. "Five years ago, we didn't have a homebrew shop within kilometers of here. After figuring out what homebrewers wanted to buy, I opened a store that operated out of my home, and two years later I opened a real storefront. I became a BJCP judge two years ago: it was very important for me, as I wanted to show my customers that I know what I'm doing. In addition to beer, I also want meadmaking to develop in Israel. This is why I decided to take the mead tasting exam. In the future I wish to open a meadery and put more and more meads on my store shelves."

Next up on the itinerary for the day was Shmuel's homebrew shop and brewery in Jerusalem, a visit to Ephraim's brewery, Hatch, in the Mehane Yehuda Market, and then a walking tour in the Old City section. As Shabbat was getting ready to start, we went to Hatch first to try a variety of different beers before it closed. A Berliner weisse with mint syrup set the tone, while a caramel sweet stout and an ale version of a Vienna lager rounded out eight solid offerings. Then it was back over to Shmuel's homebrew shop, Biratenu, for a freshly made plate of the best hummus I'd ever tasted and a sparkling cyser he was working on for Rosh Hashana, the Jewish new year. A popular food combination enjoyed during Rosh Hashana is apples with honey.

"I always liked the idea of a good cyser but only tried a few from the States last

year," remarked Shmuel. "I opened my horizons with good wines two years ago, trying Israeli orange wines that blew my mind. It really changed the whole way I was addressing fruit fermentations. All this in mind, my mind was set on the technique for this, using crushed apples in the honey and just enough water to reach the OG. I barrel aged on vanilla beans, which led to a dry, yet full-bodied, intricate-tasting mead, which I then force carbonated and bottled. In my eyes, Israel has a vague history about the quality and range of alcoholic beverages that were present in old times, so in a sense, we follow the American enterprise of the craft revival along with a growing sense of DIY and you get a rapidly growing scene."

While we were eating and trying different beers, Shmuel gave me a couple pounds each of eucalyptus, citrus, and cotton blossom honey from a family apiary and told me more about his shop and plans for mead. Not surprisingly, his story had similarities to Gilad's in Be'er Sheva.

"We homebrewers didn't have a lot of options for homebrew supply shops around Jerusalem, so I decided to open one for myself. What started that was my brother. He had come on board with a local bar I helped start up called Glen Whiskey and we created a pilot brewery there for new beer recipes. We soon realized we could do so much more for the scene and evolve while helping out with the needs of Jerusalem's homebrewers, which led us to build Biratenu. The shop involves teaching, supplying ingredients, selling local craft beer, and, surprisingly, took only a month to realize and launch."

And as for his plans with mead? "I try to find every excuse to get homebrewers to try to make mead," commented Shmuel. "Using my shop as a platform, I conduct free mead tastings when I can and also release lots of small-batch meads on tap and on the shelves to show people the sheer variety of possibilities in mead. In addition to the honey from the family apiary, I also bring in limited stocks of other kinds of honey I like such as avocado and Jerusalem thorn, just to widen the variety."

Before Omer and I left for the walking tour of Jerusalem's Old City and a viewing of the Western Wall, Shmuel had one more surprise for me to take back to the States: a bottle of his fermented mango hot sauce. "I got into making fermented hot sauces as a Tabasco fan, and after visiting some Chinese restaurants that served their own house-made sauces, I realized how easy it is to do yourself. This batch was my first try of a recipe using ripe mangoes for extra tropical notes and fenugreek to get the funky maple-

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like aromas and tang with hot peppers and chile extract for an extra kick. I try to maximize flavor by letting the microbes enjoy the mix, giving me a well-preserved, funky food I can enjoy and share."

After finishing up at Biratenu, Omer and I began the walking tour of the Old City, stepping on stones tread by European generals, world leaders and politicians, Roman soldiers, figures from the Jewish, Christian, and Muslim holy scriptures and histories, and countless other generations over the course of 3,000 years. At the end of the walk was the Western Wall, one of the most noteworthy and central sites of all three religions. As we left, Shabbat officially started as Jewish Orthodox worshippers began their prayers, followed by the call to prayers from the Muslim Quarter while Armenian priests came down, followed by a bagpipe band marching through the structures. It was truly an experience I'll never forget.

More beer and food followed later that evening, and Omer discussed what the future plans were for Israel's homebrew community now that the exam was complete.

"Hopefully after this exam we will have pre-approved mead tasting exam proctors so we will be able to hold a mead course and exam once a year. Next year, I already have a cider judging exam approved to bring the cider judging program to our region."

I spent the next day exploring Tel Aviv by myself before checking into a hotel near the airport for my flight out Sunday. I was only able to stay a few days in Israel due to limited vacation time, but with everything I had seen and done, it felt as if it had lasted longer. Israel may be a desert country, but you will not find yourself short of delicious food to eat, and there's plenty of good beer—and, soon, more mead—to enjoy, whether it be commercial or homebrewed.

EPILOGUE

On January 7, 2020, the exam results were posted and announced that all the examinees had officially passed the Mead Judge Tasting Exam to become Israel's first BJCP Mead judges. Additionally, Amit, Ephraim, Gilad, and Ohad scored high enough to qualify as proctors for future mead exams.

Scott Kurtz is founder of the St. Louis Area Homebrewers Guild, former commissioner of the St. Louis homebrew clubs officer's council, former vice president of the STL Brewminati homebrew club, and meadmaker at Bluewood Brewing in St. Louis.

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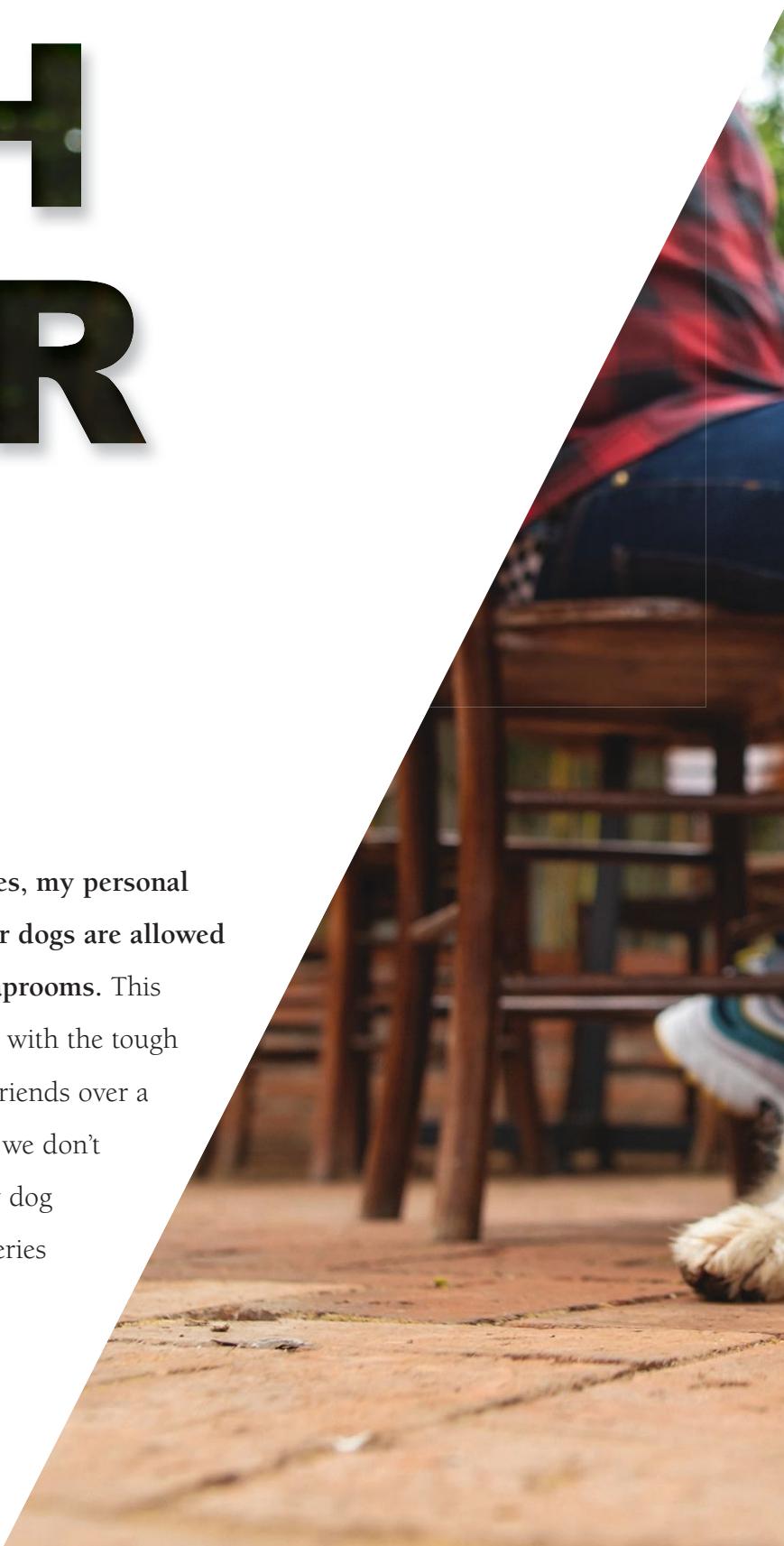


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DRINKING WITH YOUR DOG



By Amber Quann, KPA-CTP, CPDT-KSA

Of all the things to love about craft breweries, my personal favorite is that in many states and cities, our dogs are allowed to join us on the patios—and often in the taprooms. This means that after a long day's work, when faced with the tough choice between hanging out with our human friends over a beer or spending time with our dogs at home, we don't have to choose. We can do both, and for many dog owners like me, that makes dog-friendly breweries our favorite hangout spots.



But visiting a brewery with your dog doesn't always go smoothly. Dogs experience the brewery environment quite differently than we do. Let's imagine what a visit to a brewery with Samantha and her dog Piper might look like from Piper's perspective.

A TRIP TO THE BREWERY

Samantha is new to town, and after a long week of working overtime at her new job, she is ready to explore the area. She's heard that the local brewery is dog friendly, so what better way to enjoy a beautiful Saturday afternoon with Piper than to check it out together? Samantha decides it is the perfect opportunity for Piper to get some exercise after being cooped up all week, and for Samantha to enjoy a well-deserved cold drink. Even though Piper has never been to a brewery before, Samantha knows Piper loves other dogs, and people, and balls, and sticks, and Frisbee, and exploring. She'll love the brewery just as much.

As Piper and Samantha arrive and pass through the gate onto the brewery patio, the energizing ambiance hits them both almost immediately. For Samantha, the loud music rushes in, bringing with it simultaneous feelings of ease and exhilaration. On the other end of the leash, Piper's happy tail drops down a bit and her eyes widen—dog body language for "This is a lot, all at once."

Samantha doesn't notice Piper's concern. It's time for a beer, and since there are only a few seats left at the picnic tables outside, it has to be ordered quickly! Piper and Samantha head toward the taproom together; as they pass a rowdy game of cornhole with beanbags slamming and people cheering, Piper visibly flinches and tucks her tail a little lower.

On the way to the counter, Piper touches noses with a few other dogs hanging out near their owners, and each time, Piper is quickly dragged away as Samantha moves with purpose towards the bar. Both Piper and the other dogs seem a little irked at these tight-leashed interactions, but again, this frustrated body language goes largely unnoticed by the people involved.

At the counter, Piper tries to make a friend of the bartender by putting her paws on the bar, but in doing so accidentally knocks over the tip jar and leaves behind dirty paw prints. Even though the bartender makes an effort to be friendly, Samantha notices a bit of irritation in his expression as he cleans up the mess. Her stress level rises a notch or two as she pays and picks up her drink. Piper can tell her

human is a bit upset, which makes Piper all the more uneasy.

Then, as Samantha turns away from the bar with her beer, there is a crescendo in the live music. As a result, Piper makes a sudden effort to flee from the taproom altogether, dragging Samantha behind. Her beer goes from sixteen ounces to twelve, her shoulder is sore from the jolt on the leash, and by the time Piper has calmed down again, the patio seats are all taken. With a wet hand and Piper coughing from having her collar yanked during her attempted getaway, Samantha wonders if this visit was such a good idea after all.

DWYD FOR DOG OWNERS

It is out of a range of experiences similar to Piper's that the Drink With Your Dog Project* was first born. The DWYD Project is education for dog owners and breweries, all centered around creating more brewery-friendly dogs and dog-friendly breweries.

During many brewery visits with my Australian Shepherd, Roo, and my work as a dog trainer in Fort Collins, Colo. (known for its more than 20 craft breweries), I have seen a lot of dog owners struggle to communicate with their dogs in the brewery environment. The good intentions are there, and I love seeing dog owners include their dogs in out-of-the-house activities. But without an awareness of what your dog experiences when they visit a brewery with you, and without knowledge of how to help them be successful there, you can put them and other visitors at risk.

Not only that, but dogs and dog owners who earn a bad reputation at breweries can have their invitations rescinded by individual brewery rules, local health departments, or state legislation. The Drink With Your Dog Project is all about creating positive experiences through education and advocacy to keep dogs welcome in breweries.

Dogs have to deal with a lot in the brewery environment that most of us don't even register: tight spaces, loud noises, lots of people, kids, and other dogs all crowded together. The brewery is primarily, after all, an environment created by humans for humans—most of the time, dogs and their needs are secondary considerations. That's not to say that it can't be a great place to hang out and enjoy time with our dogs, but we have to remember that the burden is on us as humans to help our pets successfully navigate this type of environment.

That's where the first piece of the Drink With Your Dog Project, the Brewery Manners class for dog owners, comes into play. In this class, dog owners like

GEAR UP

When adults head to a brewery, usually all we need for a good time is our ID and some cash. But when we bring our best buddies along, there are a few other supplies that will help them have a good time too.

- **Leash:** Even though your dog may be very well trained, breweries are public places, and thus leashes are always required.
- **Blanket:** Brewery floors are often cold and hard.
- **Toy or bone:** Toys stuffed with peanut butter make great licking games for your dog while you enjoy your beer.
- **Treats:** Just as you reward yourself with a beer, reward your dog's good behavior with something he or she will enjoy as well.
- **Water and bowl:** Many dog-friendly breweries will provide dog water on request, but it's always good to be over-prepared—make sure your thirsty brewery buddy can have a drink, too.



*Drink With Your Dog is a trademark of Amber Quann.

Samantha learn how to support their dogs through a brewery visit, and the dogs have a chance to practice good brewery behavior.

One of the first things we discuss in class is good brewery etiquette, such as cleaning up after your dog and keeping your dog close to you to avoid tripping passersby with their leash or disrupting brewery staff operations. If dog owners in the brewery go above and beyond to demonstrate courtesy to other brewery visitors and staff members, it goes a long way toward creating a positive impression of dogs in breweries and making sure they remain welcome long into the future.

Another important element for setting our dogs up for success in the brewery is teaching them how to behave there. Dog owners can do this by planning visits at an appropriate time for the individual dog's skill and confidence level and bringing some supplies to help them choose appropriate behavior.

Visiting a brewery for the first time on a busy weekend afternoon as Samantha and Piper did may not be the best way to get your novice brewery dog comfortable and well behaved in the environment. Instead, try a weeknight first, and call ahead to see if there will be live music. Bringing a few simple items on your brewery visit can help as well. Think about it—the brewery will have most everything you need to enjoy your time there, but most breweries can't provide the same level of accommodation for your dog. Toss a few things in a backpack to help your dog enjoy the experience just as much as you do. See the sidebar for some ideas of what to bring.

Another aspect of the brewery prep class is teaching good brewery skills. What should your dog actually be doing when you go up to the bar to order your beer? In most cases, it is appropriate for your dog to sit quietly beside you while you talk with the bartender and then walk with you to your table while you hold your beer in one hand and their leash in the other. Without practice, these skills aren't natural behaviors for most dogs in the brewery setting.

Another essential brewery skill is "Settle Under the Table." By teaching our brewery dogs to lie on a mat or blanket under the table, we are helping them know exactly where to hang out instead of leaving them to their own devices—which usually means wandering to the edge of the leash boundary and causing potential traffic obstacles in the brewery walkways. Practicing these and other good brewery behaviors with our dogs makes brewery visits more pleasant for everyone.

“
**Better communication
between dogs and the
humans who bring
them to breweries
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and happy during
brewery visits.**



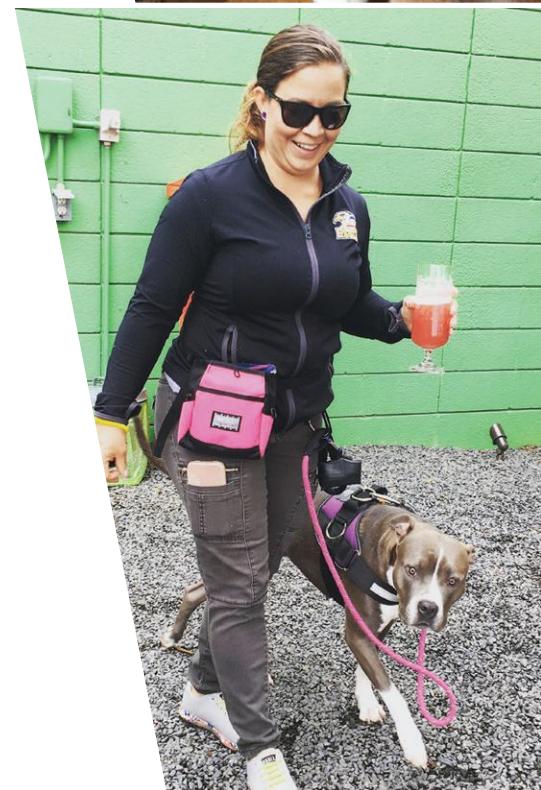
Graduates of DWYD Brewery Manners classes have much better communication with their dogs and with other dog owners after participating in the project. Brewery Manners graduate Jeff says that he and his dog Olivia "receive compliments regularly when we are visiting establishments" and that "the work we put into the training shows every time we are out." They also see their work pay off in other aspects of their lives: visits to friends' houses and to other public areas improve as well.

Another class graduate, Saskia, is pleased that her beer now survives the trip from bar to table: "I get to enjoy all 16 ounces of a pour, versus losing a few ounces to the floor trying to carry a beer while managing my pup." The class has made it possible for them to visit more places together and has strengthened their relationship.

Better communication between dogs and the humans who bring them to breweries is important to keep everyone safe and happy during brewery visits. If you plan to visit a brewery with your dog, think about what to bring with you and what skills to practice before your visit, and you'll be much closer to a more harmonious visit.

DWYD FOR BREWERY STAFF

Just as I have heard from dog owners about their challenges in the brewery, I have also spoken with brewery staff members about their frustrations and fears with hosting dogs in their taprooms and patios. Many breweries recognize the benefits of welcoming dogs as a way to curate a comfortable, laid-back ambiance that ultimately sells more beer. But as it has become more popular to bring dogs of all skill levels to the brewery, more safety and liability concerns have arisen.



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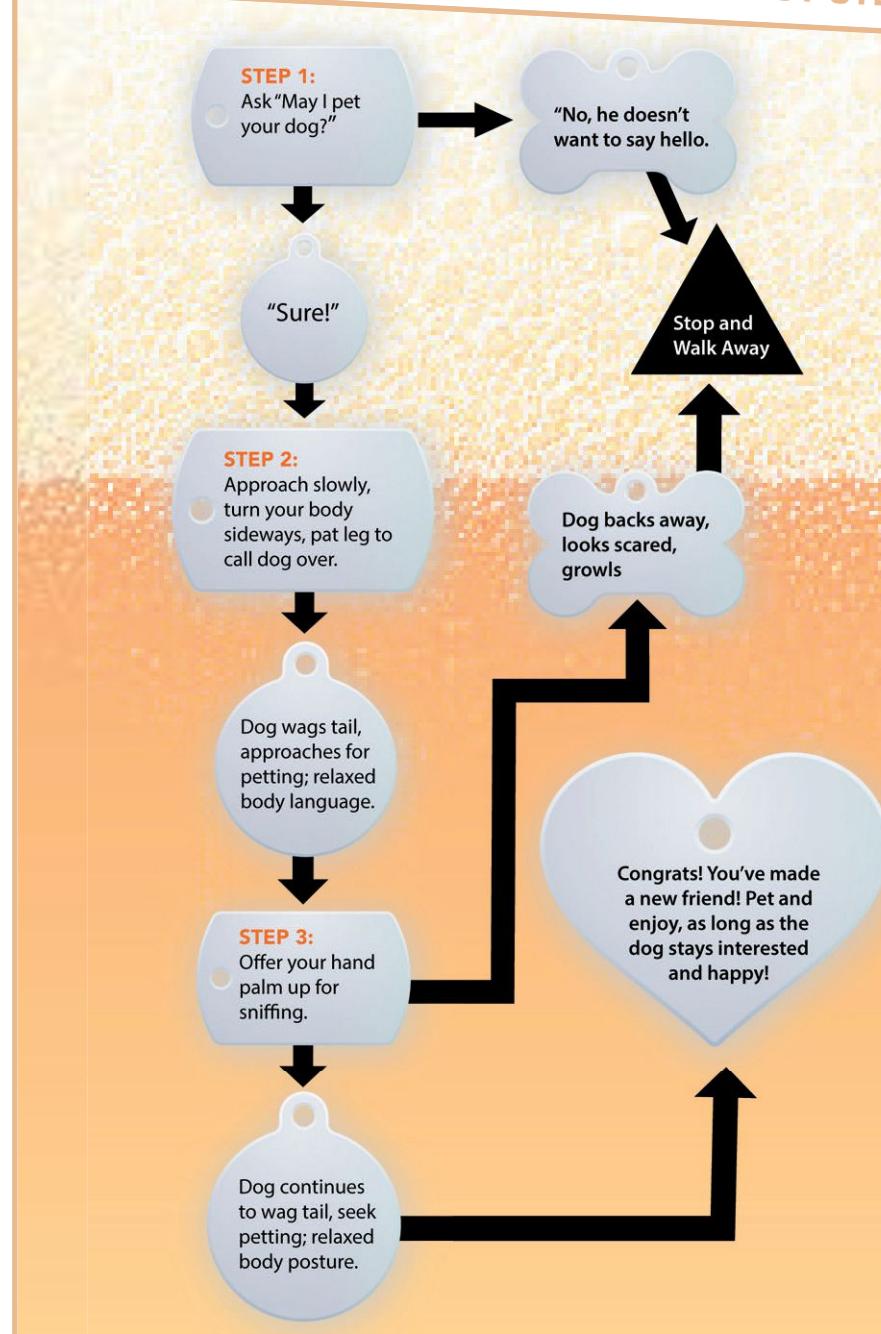
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Because of this, an additional aspect of keeping dogs welcome in breweries is education for brewery staff members on how to safely welcome dogs into their spaces. The brewery staff education component of the Drink With Your Dog Project focuses on understanding dog body language, learning how to greet a dog appropriately, and talking with confidence to dog owners about any unwanted behavior.

The more brewery staff members understand about dog behavior, the more confidently they can handle a variety of dog situations that come up in the brewery setting. Even though it isn't a bartender's job to make every person-and-dog interaction completely harmonious, knowing a little bit about what to look for and how to respond goes a long way toward making a brewery truly dog friendly.

One challenge many breweries face is dog owners keeping their dogs on a leash and close to their sides. I've spoken with many brewery staff members who tell me stories of owners coming into the taproom with off-leash dogs who immediately run behind the bar, a strict no-dog zone in most breweries. Another common story is of on-leash dogs tied to the base of a table or a chair instead of in the owner's hand, which allows the dog unrestricted access to greet (often by jumping upon or clotheslining) everyone who passes by.

Leash challenges cause significant problems in the brewery setting. Off-leash dogs behind the bar can be a tripping hazard for staff members at best, and a health code violation at worst. Dogs tied to the bases of tables and chairs, or generally allowed to wander at the end of their leashes, cause traffic flow challenges, annoyances to other brewery visitors, and other safety concerns.

In our Drink With Your Dog workshop for brewery staff members, we brainstorm different ways to approach dog owners who cause disruptions like these. The trick is to use positive, friendly language that helps the dog owner know exactly what they should be doing with their dog rather than just what *not* to do.

For our leash examples, I have brewery staff members practice phrases like "Thanks for bringing your dog in. Would you mind holding the leash in your hand instead of attaching it to your chair?" or "Can you call your dog and attach your leash, please?" By offering direction to the behavior we do want to see from dog owners in the brewery instead of focusing on what the brewery guest is doing wrong, staff members can keep the experience focused on everyone's enjoyment of the beer.

Brewery staff who have completed the Drink With Your Dog brewery staff training have reported an increase in their ability to understand what dogs were feeling in their taproom, how to better redirect dog owners to more appropriate behavior, and overall, to help them make interactions with dogs safer and more enjoyable for everyone.

SUCCESSFUL OUTCOMES

If you are a dog owner who loves to visit breweries with your dog, remember that there are a few things you can do to keep the experience harmonious, such as bringing supplies and teaching your dog good

brewery behavior ahead of time. If you are a brewery visitor without a dog, or a bartender at a dog-friendly brewery, you can help the dogs by asking their owners before petting, watching for signs that the dog is uncomfortable with your interaction, and kindly and confidently speaking up to the dog owner if you see that a dog isn't doing well. Better communication on all sides is key to dogs continuing to be welcome in breweries and for more good times to be had by all.

Piper completed the Brewery Manners class and learned skills to help her with each of the arousing stimuli she encountered on her first day at the brewery. First, her mom



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—RANDY MOSHER, AUTHOR OF
TASTING BEER AND RADICAL BREWING



BrewersPublications.com



Author Amber Quann

Samantha learned when she should bring Piper and when she should stay at home. Their next brewery visit was on a Tuesday instead of a weekend, and they brought a blanket, a frozen peanut butter treat, and a bowl for water. They scoped out the quietest part of the patio and got settled before they went to the counter to order.

Piper showed off her sitting skills while her human got a beer, and Samantha was

aware of the noises around them in case Piper showed signs of being uncomfortable. They saw other dogs between the bar and their table, but they asked the owners' permission before they approached, and ended the interactions after a brief sniff. Samantha paid close attention to Piper's body language, and later Piper enjoyed her frozen treat while Samantha drank all 16 ounces of her

beer. They left as it began to get busy, and both felt relaxed, happy, and pleased with their progress. They'll be back again to enjoy another brewery adventure together soon.

Amber Quann is owner and head trainer at Summit Dog Training in Fort Collins, Colo. She is the creator of the Drink With Your Dog Project.

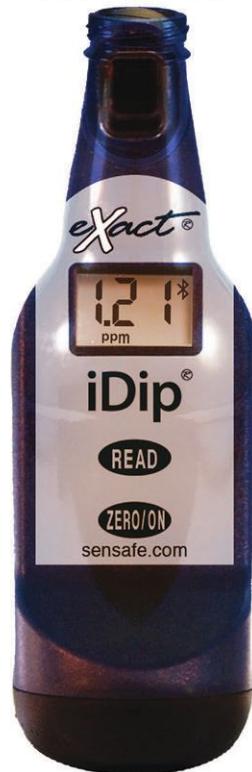
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R0719

A close-up photograph of a meal. In the background, there's a glass of light-colored beer and a dark can of beer. In the foreground, a white plate holds several rectangular pieces of food, possibly a type of pizza or flatbread. These pieces are topped with melted cheese, sliced ham, sun-dried tomatoes, and green onions.

EAT THIS, DRINK THAT



Successful Beer and Food Pairing Events for Homebrew Clubs

By Ron Minkoff

Homebrewers love to show off their brewing skills. Who doesn't dig the dopamine hit that comes from seeing someone enjoy their latest liquid creation? Usually, homebrewers can only do this with family, friends, and fellow club members: relatively few get to show off to the public like a commercial brewery does. But for those who do, there's something extra special when a complete stranger—who doesn't have to like anything about you—tries your brew and lights up with glee.

A few years ago, I brainstormed to come up with a program for my Gainesville, Fla., homebrew club, the Hogtown Brewers (2016 Radegast Homebrew Club of the Year), to provide public-facing opportunities for our club members to bring their A-game and show off their culinary kung fu. Our program currently has two main events that provide such an outlet.

The first avenue is through our local Oktoberfest, which attracts more than 3,000 patrons. It's similar to participating in a beer festival, except we're the only

ones pouring complimentary samples. We hand out over 1,000 pours to happy, surprised, appreciative patrons. It's a great opportunity to show off. Perhaps your own town has an Oktoberfest or similar event in which your homebrew club can participate.

The second, and many say best, activity for showing off to the public is our Hogtown Brewdown beer and food pairing events. Inspiration for these twice yearly events comes from Tampa Bay BEERS' Try This! beer and food pairing social and the North Florida Brewers League's Pints for Paws homebrew pouring festival.

The beauty of serving your creations at a beer and food pairing event is that patrons tend to focus on and appreciate the quality and creativity of your samples more than they can in the chaos of a beer festival. Plus, each beer and food pairing event raises funds—typically around \$3,000—for a nonprofit organization. To be clear, the primary reason we do beer and food pairings is not for charity, but to provide a fun outlet for our members. It's just that

our happy implementation also happens to benefit charities.

FIRST THINGS FIRST

If you made it to this paragraph, perhaps you're also a big fan of show-and-tell and are interested in setting up a beer and food pairing event for your homebrew club. To organize a successful pairing event that highlights your club's homebrewing talents, it must be

1. Fun for homebrewers to participate in
2. Attractive to members of the public
3. Sustainable
4. Legal

When hosting a beer and food pairing event, why partner with a charity? To raise money for a good cause, right? Yes, of course, that's a great reason. But there is also an important logistical reason we do it, which covers the second and fourth of these criteria.

Our pairing events establish clear responsibilities for the charity and for our homebrew club. One of the most →

important responsibilities for the charity is to market the event and handle ticket sales (donations). That's a burden we gladly let the charities do. After all, they tend to have a huge list of supporters for their cause, and many of those supporters like good beer and food. So, we let the charity do the heavy lifting for marketing and bringing in the people.

You also want the charity to handle virtually all funds for the event since, as everyone knows, you cannot sell homebrew. Keeping the handling of funds separate from the club and the homebrewers helps avoid legal issues. Any payments submitted by patrons are handled by the charity and are considered donations. The charity uses a portion of those funds to buy or rent supplies such as plates, utensils, tables, etc.

You may ask: if patrons pay a donation to get access to the homebrew that is poured, isn't that the same as paying for homebrew? Not in our implementation. Here's why.

We open these events to non-donor members of the public in addition to donors. If a non-donor (we use wristbands to identify donors) asks to try a sample of homebrew, they are allowed to have one. Of course, they must first be carded, given a dissertation on the wonderful work our charity partner is doing, learn why we're here, and endure other hassles!

In reality, there have been zero issues with this and no weasels (so far) have tried to score free beer without being a good participant and donor. Now, if a non-donor asks for a free food sample, that's a hard no, and the request is denied. You can do that for the food portion. But again, we've had yet to see any freeloaders try this in our experience.

KEEP IT SUSTAINABLE

As much as homebrewers love to show off their brewing and culinary skills to get their coveted dopamine hit, that's not a cheap thing for them to do, especially in a repeatable manner. The ingredient cost for 5 gallons of homebrew isn't too bad, but that's not necessarily true for food.

Important questions have to be answered:

- How do you keep participation affordable so your club members can brew and cook for many pairings to come?
- How many people do you need to prepare food for, and what size portions will you offer?
- How many pairing stations are enough, and how many are too few?
- How long is the event?
- What should the charity's suggested donation be for patrons?



EXAMPLE BEER AND FOOD PAIRING STATIONS

Homebrewers are some of the best chefs out there! Here are example pairings from past events.

- Thai chicken satay / pale ale
- Italian eggplant with garlic, oregano, olive oil, and sharp provolone / rauchbier
- Slow-cooked Hawaiian pork barbecue on sourdough toast / double IPA
- Bread pudding with bourbon sauce / Irish blonde ale
- Banana Nutella wonton with vanilla ice cream / hazelnut brown ale
- Smoked pork and sausage medley / German doppelbock
- Scotch eggs / bourbon-barrel Scotch ale
- Whipped goat cheese and caramelized onions on sourdough toast / nut brown ale
- Giant wild fried shrimp breaded with cornmeal breading / German hefeweizen-style Scotch ale
- Chicken rice curry / ginger and pepper saison
- Pork rillettes on fresh baguette / smoked brown porter
- Waffle-battered fried chicken with spicy maple syrup / mimosa Kolsch
- Mini sweet potato pie with candied pecan topping / pecan brown ale

BEER AND FOOD PAIRING CHEAT SHEET

For an event of up to 100 guests with a suggested per-patron donation of \$30, we host 10 to 15 beer and food pairing stations. Each station provides a small appetizer-sized portion and a 2- to 3-ounce beer sample. The event runs for three hours, usually on a Sunday from 1 p.m. to 4 p.m. In the people's choice competition, patrons vote for best food, best beer, and best beer/food pairing. Estimated net proceeds of \$2,000 to \$3,000 are donated to charity.

Charity Responsibilities

- Market the event
- Host the event at a venue (including chairs, tables, tablecloths, etc.)
- Sell tickets (as donations) prior to event
- Card and stamp guests to ensure patrons are of legal drinking age
- Provide and issue wrist bands
- Supply a food stipend (up to \$50 per station)
- Provide plates, bowls, utensils, and napkins (approx. 600 small plates)
- Provide and count voting ballots
- Provide ballot prize(s) (optional)
- Organize music (optional)
- Host a silent auction (optional)

Homebrew Club Responsibilities

- Homebrew beer samples for each station (as donations)
- Prepare food samples for each station
- Ensure compliance with food safety regulations
- Supply sample cups
- Create signs for each station
- Supply food gloves and serving equipment
- Deliver lists of beer and food pairing details to charity (for voting ballot)
- Supply hand stamps
- Supply dump buckets and/or pitchers

Having organized multiple Hogtown beer and food events, I'm happy to report that there are concise answers to all these questions.

To strike a balance between a high-energy event with a nice crowd and one that's not overwhelming for homebrewers to prepare for, we've determined the maximum crowd size to be 100. A satisfying number of beer and food pairing stations is 10 to 15, though 12 to 15 is better. Two homebrewers typically staff each station.

Actually, we don't plan for just 100 patrons, but for 140 attendees total. Remember, your participating club mem-



Artwork used by the Florida Springs Council to promote the Hogtown Brewdown.



A silent auction benefits the Florida Springs Council.

bers and staff from the charity get to eat and drink, too. Assuming a full 15 stations (each with an average of two club members) and probably up to 10 charity staff members onsite, that will come out to about 140 people.

Homebrew samples can be 2 to 4 ounces (60 to 120 mL). If the homebrewer can only bring 3 gallons (11 liters), then 2-ounce (60 mL) samples will get them through the event successfully. If they can bring 4 or more gallons (15 liters), samples can be more generous. Food samples are one to three bites, depending on the dish.

It's very much like tapas or hors d'oeuvres. If you're wondering if these small-sized samples actually satisfy a patron, I can tell you that if you go around a room and enjoy 12 to 15 of these food samples, each accompanied by a tasty beer sample, you'll be full—very full! And happy!

Depending on what is featured, we've had some homebrewers prepare delicious food samples for the entire crowd from as little as \$20 in ingredients, while others have spent more than \$100. To keep the homebrewer chef in the game, the event offers the chef a stipend of up to \$50. That is, if they spend \$50 or more on ingredients, they get \$50. If they spend less than \$50, the actual amount

FAQ FOR CLUB MEMBERS

Q: Hmm, we're serving to people outside of the club. Should I brew/cook my best stuff to impress them?

A: Absolutely. Bring your A-game! The beer and food served reflects on you, the club, and homebrewing in general.

Q: How big will the food and beer samples be?

A: For beer, probably 2 to 4 ounces. For food, it will be small, like a bite or two of an appetizer (depending on what you make).

Q: How much should I bring?

A: Enough samples for 140 people. For beer, a minimum of 3 gallons (4 gallons or more is even better).

Q: I have a keg that's mediocre I've been trying to get rid of. This event seems like a good way to get rid of it, right?

A: You should stay home.

Q: What about homebrewed cider or mead instead of beer?

A: Sure! As long as you can make a good pairing with it. (Obviously a home-distilled spirits pairing is not an option.)

Q: Will a stipend be provided for the ingredients?

A: Yes, up to \$50 for food ingredients. If your ingredients cost you less than \$50, then you get that smaller amount. For beer, there may also be a separate stipend provided by the club.

Q: I'd love to participate, and I've been turning out some good brews, but I'm not much of a cook. Can I team up with another member who's good in the kitchen?

A: Definitely. That's encouraged. And vice versa.

Q: How many beer/food pairing stations should there be?

A: Target 12 to 15 stations.

Q: How many club members are allowed per station?

A: Up to two club members (three if there's a really good reason).

Q: Can other club members attend even if they do not plan to create and serve beer or food?

A: Yes, though they would be expected to pay the suggested donation to the charity.

is reimbursed. This stipend comes from the charity. One of our recent charity partners had the clever idea of pre-selling pairing station sponsorships for \$50 to help pay out the stipends. They were able to get local businesses to sponsor several stations, with names and logos prominently displayed.

What should the suggested donation be for patrons? We have found the current sweet spot to be \$30 per attendee, so 100 patrons bring in \$3,000. With expenses, including the food stipend, this means net proceeds hover somewhere over \$2,000. However, earlier I mentioned net proceeds can be over \$3,000. We make up the gap with a traditional silent auction, which is handled entirely by the charity partner.

I CAN TELL YOU THAT IF YOU GO
AROUND A ROOM AND ENJOY 12
TO 15 OF THESE FOOD SAMPLES,
EACH ACCCOMPANIED BY A TASTY
BEER SAMPLE, YOU'LL BE FULL—
VERY FULL! AND HAPPY!

What about ingredient stipends for the brewer? We do provide stipends for the brewer, but the brewing stipend comes from our homebrew club funds, not the charity partner. If your club is putting on a beer and food pairing event, I would say it is up to your club's executive board to determine what stipend, if any, your club is willing and able to offer based on its resources. If it can provide something to help your members participate, that's great! If not, that's OK, too. Your club is still putting in an amazing effort to prepare tasty beer and food that's enjoyable for the homebrewer to show off and also helps raise funds for the charity. That absolutely has value!

THE VENUE

We leave it up to the charity partner to secure a venue to host the event. Sometimes the charity has its own space, but for those who don't have that luxury, we step in to help find a place. So far, we've been fortunate to have one of our local breweries host the event without charging the charity. This is still a win-win for the brewery since it gives them an opportunity for community relations. Plus, it brings



Dining area.



A silent auction benefits the Florida Springs Council.



Left to right: Dan Short (3rd place Best Beer), Bill Edwards (1st place Best Beer, 2nd place Best Pairing, 3rd place Best Food), Ron & Kris Minkoff (2nd place Best Beer, 3rd place Best Pairing), Evan Waters (2nd place Best Food), Bruce & Beth Hicks (1st place Best Food, 1st Place Best Pairing). Not pictured: Tim Taylor.

YOU CAN HAVE
THIS



OR YOU CAN HAVE
THAT



THE CHOICE IS YOURS



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in several people who have never visited their establishment before, which hopefully helps them pick up new craft beer fans.

When scoping out a venue, you will obviously need to evaluate if there is sufficient space for 15 beer and food stations, a registration table, perhaps an area to showcase a silent auction and musicians, and, of course, 140 people to mill about. You will want to ask if the venue can provide any complimentary tables and chairs—it is up to the charity to procure any additional furniture.

Brew
This!



Sweet Stout

Recipe courtesy Tim Taylor.

This beer was paired with the dessert Sweet Stout Apple Crisp to win Best Pairing. It was also infused into the dessert's caramel sauce.

Batch volume: 5.5 US gal. (20.8 L)

Original gravity: 1.063 (15.4°P)

Final gravity: 1.021 (5.3°P)

Color: 41 SRM

Bitterness: 27 IBU

Alcohol: 5.6% by volume

MALTS

10 lb. (4.54 kg) UK pale malt

1 lb. (454 g) black patent malt, 500°L

12 oz. (340 g) caramel malt, 80°L

8 oz. (227 g) pale chocolate malt, 200°L

HOPS

1.5 oz. (43 g) East Kent Goldings, 4.7% a.a., first wort

ADDITIONAL ITEMS

1 lb. (454 g) lactose @ 0 min

YEAST

White Labs WLP005 British Ale Yeast

BREWING NOTES

Mash at 151°F (66°C) for 60 minutes. Boil 60 minutes, adding hops and lactose as indicated. Ferment at 67°F (19°C).

EXTRACT VERSION

Replace pale malt with 7.4 lb. (3.35 kg) liquid pale malt extract. Steep remaining grains at 155°F (68°C) for 30 minutes. Drain, rinse grains with RO water, and dissolve extract into resulting wort. Top off to desired boil volume with RO water and proceed with boil as above.

Sweet Stout Apple Crisp with Stout-Infused Caramel Sauce

This dessert took first place in both the "Best Food" and "Best Pairing" categories and is provided courtesy of Bruce and Beth Hicks.

STOUT REDUCTION

Pour 24 oz. (710 mL) of stout into a nonstick skillet over medium heat. Stirring constantly with a rubber spatula, boil until it thickens and has the consistency of light syrup. Set aside in a small prep dish. You may not use all of this. It is quite bitter—just taste it—and a little goes a long way.

CARAMEL SAUCE

⅔ cup (160 mL) sugar

½ cup (120 mL) heavy cream

1 Tbsp. (15 mL) unsalted butter

stout reduction

Cook sugar in dry saucepan over medium-low heat, stirring slowly with a fork, until melted and light golden. Continue to cook sugar without stirring (just swirling the pan) until melted, and a deep golden color. Remove from burner and pour the cream down the side of the pan. It will steam up a lot.

Return pan to the heat, stirring, until the hardened caramel is smooth again. Remove from heat and stir in butter until just incorporated. Move to a microwaveable bowl. Stir in some of the stout reduction, tasting as you go, until the flavor of your stout comes through just after the nutty sweetness of the caramel.

Cooled sauce can be refrigerated for a week in an airtight container. Reheat gently in the microwave.

APPLE CRISP

4 apples, peeled and sliced

stout reduction

¾ cup (180 mL) quick oats

¾ cup (180 mL) brown sugar

½ cup (120 mL) all-purpose flour

1 tsp. (5 mL) cinnamon

½ cup (120 mL) cold butter, cubed

Spray a 9"×9" baking dish or pan with nonstick cooking spray. Layer the apple slices in the bottom of the pan. Drizzle some of the stout reduction over the apples.

Mix all the other dry ingredients in a bowl. Cut in the cold butter with a pastry cutter. Sprinkle this topping mixture evenly, but loosely, over the top of the fruit. Bake at 350°F (180°C) for 35–40 minutes.

Top each serving with your choice of whipped cream or ice cream.

Drizzle some of the stout caramel sauce over the top. Enjoy with a glass of your stout.



And we mustn't forget: go find all the power outlets! If possible, evaluate which outlets are on different circuits. If a number of stations require power for a grill, toaster, or warmer, it's easy to throw a breaker, so you want to spread out the electrical load over multiple circuits. On that note, find out ahead of time where the circuit breaker box is. You'll thank yourself later.

TEAMING UP

We can't have a pairing event without chefs and brewers, so we must recruit beer and food station teams. To do this, we simply send an announcement to club members providing event information and an FAQ (see sidebar). We give willing participants a choice when they RSVP:

1. Brewer only
2. Chef only
3. Brewer and chef

This way we can identify and pair up any brewing and cooking orphans who need partners. Most teams won't know what they want to cook until nearer the event date, so about two weeks before showtime, we query teams for their offerings so we can create menus. At the same time, we poll the chefs to find out which teams require power and what appliances they need the power for. This is critical for laying out the station "seating chart" so you don't have too many devices ganging up on the same power circuits.

BELLS AND WHISTLES

We like to throw in some nice additions that aren't critical but are effective at punching up the experience for patrons, chefs, and brewers alike. The main one is a people's choice competition for three categories:

- Best Beer
- Best Food
- Best Pairing

Each patron is given a menu that also serves as a ballot. Patrons are asked to rank their top three choices within each of these three "best of" categories. Over the course of the three-hour event, patrons have the first two hours to sample each station, fill out their ballots, and hand them in. The charity partner tabulates the votes (3 points for first place, 2 for second, and 1 for third), and the results are announced to the crowd during the last half hour.

Though not required, the charity partner is often nice enough to arrange a prize for each of the three first place winners, usually via in-kind donations from sponsors. Occasionally, we can pile on other awards, such as the Best Beer category winner brewing their beer at the host brewery. A prize for the winners at our December 2019

event, which benefitted our charity partner, Florida Springs Council, included getting their recipe published in a humble article in Zymurgy! That's a double dopamine hit.

FINAL COURSE

Hosting a beer and food pairing event offers numerous benefits to homebrewers. It's like a wonderful, glorified keg share coupled with amazing foods that you and your fellow co-brewers have come up with. It's great PR for your club. It's a way to meet other craft beer fans and food aficionados. It's an opportunity to raise a nice amount of cha-ching

for your charity partner. And, it's a chance to win over a whole crowd with hard-earned praise from a people's choice award. That, my friend, is bringing your A-game!

Ron Minkoff has been brewing in the comfort of his driveway since 2003. He is a past president of the Hogtown Brewers and a BJCP-certified judge. He has cohosted Grow Radio's Homebrew Talk podcast at homebrewjockey.com since 2010, where he and cohost partner John spread the homebrew gospel one carboy at a time.

*Brew
This!*



Opus Coffee Baltic Porter

This recipe, courtesy of Bill Edwards, won Best Beer at Hogtown's December 2019 beer and food pairing event.

Batch volume: 5.5 US gal. [20.8 L]

Original gravity: 1.089 [21.4°P]

Final gravity: 1.027 [6.8°P]

Color: 34 SRM

Bitterness: 35 IBU

Alcohol: 8.2% by volume

MALTS

8 lb.	[3.63 kg] Maris Otter malt
5 lb.	[2.27 kg] Weyermann Munich Type II malt
4 lb.	[1.81 kg] Vienna malt
12 oz.	[340 g] Weyermann CARAMUNICH Type III malt
8 oz.	[227 g] Weyermann CARAFA Type 2 malt
8 oz.	[227 g] chocolate malt, 450°L
8 oz.	[227 g] flaked oats
8 oz.	[227 g] rice hulls

HOPS

0.8 oz.	[23 g] Magnum, 11.1% a.a., first wort hop
1 oz.	[28 g] Hallertauer Mittelfrüh, 4% a.a., whirlpool

YEAST

3 L starter White Labs WLP833 German Bock Lager Yeast

ADDITIONAL ITEMS

1 tablet	Whirlfloc @ 15 min
16 oz.	[473 mL] Opus Coffee Cold Brew Concentrate at packaging (opuscoffee.com)

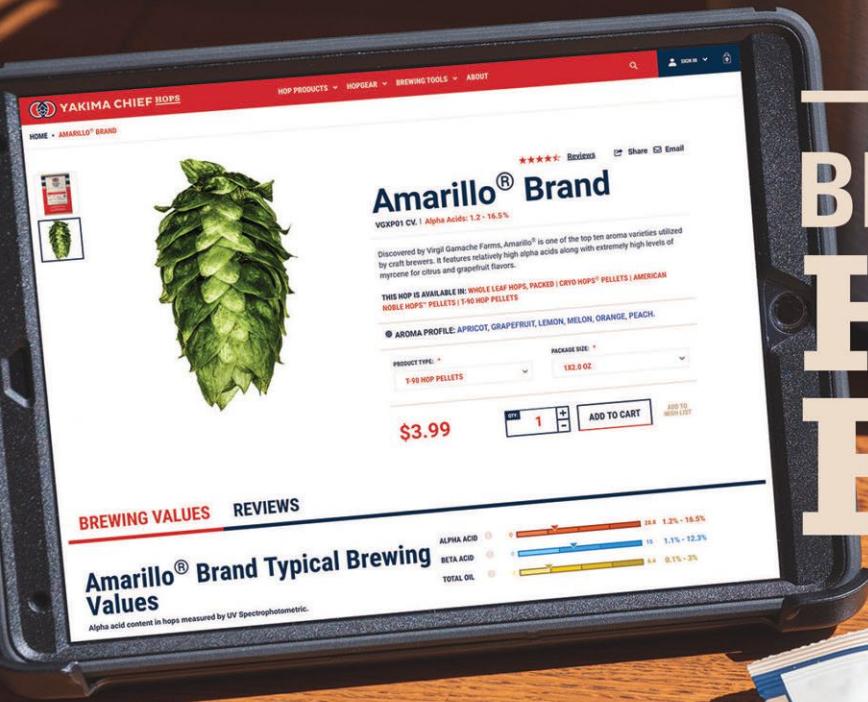
BREWING NOTES

Mash 60 minutes at 156°F [69°C] and sparge with 168°F [76°C] water. Boil 90 minutes, adding hops and Whirlfloc as indicated. Chill wort to 45°F [7°C], oxygenate, and pitch yeast. Raise temperature to 48°F [9°C] and ferment about 2 weeks or until activity slows. Gently raise temperature to 65°F [18°C] for 2–3 days for a diacetyl rest. Slowly lower temperature to 33°F [0.6°C] and hold 2–3 days. Clarify with gelatin and keg, adding Opus Coffee concentrate at packaging. Lager 4 weeks at 33°F [0.6°C] and serve.

EXTRACT VERSION

Replace all but 2 lb. (907 g) of the Maris Otter malt with 4.5 lb. (2.04 kg) Maris Otter liquid malt extract. Replace Munich malt with 3.4 lb. (1.53 kg) Munich liquid malt extract and Vienna malt with 2.8 lb. (1.27 kg) Vienna liquid malt extract. Mash 2 lb. (907 g) Maris Otter with remaining grains (rice hulls optional) at 156°F [69°C] for 45 minutes. Drain, rinse grains with reverse osmosis (RO) water, and dissolve extracts into resulting wort. Top off to desired boil volume with RO water and proceed as above.

— FROM — BREWHOUSE TO HOUSE BREW



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War of the Worts 2020

By Amahl Turczyn

The 25th annual running of this popular competition took place February 22 and was organized by the Keystone Hops Homebrew Club of Montgomeryville, Pa. Not only does War of the Worts (WotW) hold the distinction of being one of the largest competitions on the East Coast, but it's also the first of three legs of the Keystone Cup club competition. Homebrew clubs accumulate points at War of the Worts in the spring, Keystone Barrel Brew Championship in the summer, and Malt Madness in the fall. The club with the most points at the end claims the Keystone Cup.

War of the Worts is also the first leg of the Eastern Pennsylvania Homebrewer of the Year competition. The other three are Buzz Off, Malt Madness, and the Stoney Creek Homebrewers Amateur Brewing Championship.

Competition organizer Douglas Dinwoodie got together with other members of the Keystone Hops to provide some background on their club and its legendary homebrewing event.

Will Cass, best-of-show winner, War of the Worts



"Our club was established in 1993," he explains. "We're an active club, and preparing and organizing War of the Worts is the major focus of our year. We do other annual events, but this is the big kahuna and we're proud of the quality of competition. We have a committee with two co-chairs that serve three-year terms. I've only been with the club for five years, but this is my third year as organizer, along with co-organizer Jack Robbins and our new co-chair Kevin Sheehan. We also have an appointed judge wrangler, cellar master, prize czar, and social media chair. We trust our people to do their jobs and treat this more like a corporate project than a hobby. (Slack is our lifeblood!) In the past, it was usually ONE guy, and I can't fathom how that person managed."

To lend some perspective, WotW 2020 had 584 entries from 13 states and Canada, down slightly from 652 the previous year. In its peak year, the event judged over 800 entries.

Dinwoodie recalls that Jason Harris ran it solo for some time, as did Andy Hejl and then Jim Alexander, among others, all before the committee was formed. But it's always been a big undertaking, especially since the club believes in going the extra mile to make it a top-quality, smooth-running enterprise from start to finish.

"We treat judges as well as we can—hot lunches, store discounts, roomy tables, and a competition that runs like a well-oiled machine to keep things moving. We also do our best not to overwhelm anyone with more than eight entries per flight. Also, we use different commemorative competition glassware each year, adding to its collectability. Because of our age, our location, and our reputation, we get a lot of Master and Grand Master judges. It's always a treat for new judges to sit with them and learn."

In fact, the focus on education is something else that makes this competition stand out. "We partner with Keystone Homebrew to offer an eight-week BJCP judging class and exam that is timed so the class is wrapping up when War of the Worts hits, and the students get hands-on learning before they take their exam. We usually get great results and good judges in the area from this pipeline. (The class is paid, but basically at cost.) I'm actually teaching it this year and am quite honored to be doing so in the footsteps of previous masters."

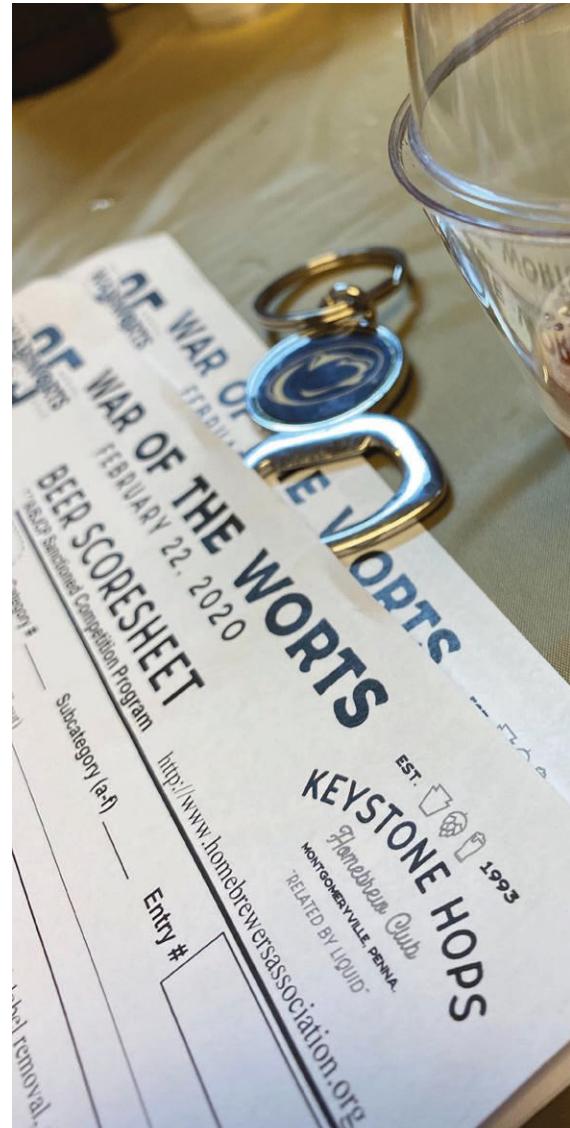
No surprise, then, that all that education has paid off. "Our Pro-Am winners have been quite successful," Dinwoodie says with



“
It’s also a
heck of a
lot of fun,
and not that
intimidating.

pride. "Three of them in the last four years have made it to the final table at GABF [Great American Beer Festival], one with Neshaminy Creek and two with Iron Hill."

Other key features of the competition—beyond its "super-snazzy ribbons"—include a novel way to maximize sponsor visibility and a brilliantly educational way to make use of leftover entries after judging has concluded.



"We do digital scoresheets, which isn't uncommon anymore," Dinwoodie says, "but we prepend the sponsor sheet to each scoresheet so our sponsors get as many views as possible. I also came up with an educational system for using the 'B bottles' we used to give away or toss. After the competition, we go through the list of B bottles and find 'trios.' These are sets of three entries that are all in the same subcategory and have widely different scores. One has to score 26 or less, one scores 27 to 33, and one is 34+ (or else it medaled, which sometimes happens with a 32 or 33). Also, this only works for 'standard' styles, or a very specific specialty like Bourbon-barrel imperial stout—the goal is that they're all going for the same thing. Then, we get a group of five to eight people together who have never judged before and serve them up a flight of five trios."

"For each trio, the taster is supposed to take a sample and decide which beer is great, which one is just OK, and which one isn't good. We encourage them to comment on why and what the essence of the style is. The point of all this is to teach people about styles, judging, brewing practices, and how to taste something deliberately—but even more so, it's to encourage those who think, 'I could never be a judge'. People are often pleasantly surprised by how well they do, and I've gotten a lot of positive feedback. We will probably do two or three of these events in upcoming club meetings to educate and encourage. It's also a heck of a lot of fun, and not that intimidating."

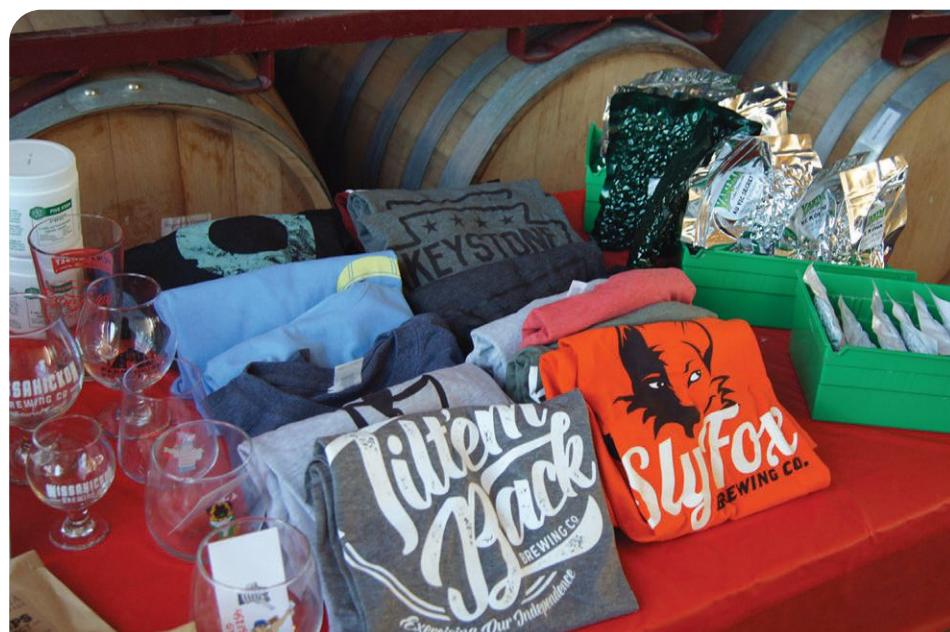
And speaking of positive feedback, Dinwoodie notes that as of 2019, the competition adopted the Hogtown best-of-show round method that focuses on positivity rather than "which beer to kick." (see "Hogtown House Rules" in the Mar/Apr 2019 issue of *Zymurgy*).

One last element to War of the Worts that makes it truly unique is its affiliation with Keystone Homebrew, which serves as the competition venue and a haven for the club. "It's the biggest, best homebrew shop around," Dinwoodie asserts. "It's a place with great equipment, supplies, and a knowledgeable, helpful staff. It used to be a furniture factory, so it's quite large and includes a retail floor, a set of offices (and our club storage), a classroom, a pub and hangout area where we do our competition judging, a production winery



Write Style Here					
Entry # here Notes here	✗ ✓ 🏆	✗ ✓ 🏆	✗ ✓ 🏆	✗ ✓ 🏆	✗ ✓ 🏆
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Using a "trio" judging mat like the one shown here, new judges can experience the differences among beers with different scores.





Brew
This!



Solstice

American stout

Recipe courtesy Will Cass, 2020 War of the Worts best of show

Batch volume: 5 US gal. (18.9 L)

Bitterness: 37 IBU

Original gravity: 1.063 (15.4°P)

Color: 40 SRM

Final gravity: 1.010 (2.6°P)

Alcohol: 7.2% by volume

MALTS

10 lb. (4.54 kg) Malting Company of Ireland Stout Malt

1 lb. (454 g) UK roasted barley, 550°L

1 lb. (454 g) coffee malt

8 oz. (227 g) flaked barley

HOPS

1 oz. (28 g) Northern Brewer, 8% a.a @ 60 min

1 oz. (28 g) HBC 342 [Experimental], 10.9% a.a. @ 5 min

1 oz. (28 g) HBC 342 [Experimental], 10.9% a.a., 15 min. hop stand @ 120°F (49°C)

YEAST

1 L starter White Labs WLP090 San Diego Super Yeast

BREWING NOTES

Mash crushed grains at 150°F (66°C) for 60 minutes, mash out at 168°F (76°C) for 10 minutes, and sparge gently to collect 7.5 gal. (28.4 L) of sweet wort. Boil 60 minutes with Northern Brewer hops, adding 1 oz. HBC 342 at 5 min. Chill to 120°F (49°C), add 1 oz. HBC 342, and hold for 15 min. Chill to 65°F (18°C), transfer to fermenter, oxygenate, and pitch yeast slurry at same temperature. Ferment 7–10 days at 65°F (18°C), then warm to 68°F (20°C) and hold 2–3 days. Transfer to secondary once gravity stabilizes. Cold crash if kegging. Keg or bottle.

EXTRACT VERSION

Reduce stout malt to 1.75 lb. (794 g). Mash with remaining grains at 150°F (66°C) for 45 minutes or until full conversion of starches. Rinse grains, dissolve 6 lb. (2.72 kg) liquid pale malt extract thoroughly in resulting wort, and top up with reverse osmosis water to desired boil volume. Proceed with boil as specified above

Beyond his local craft breweries, Cass finds his work inspired by classic styles and craft beer farther afield, but he's also driven to brew certain styles at certain times of the year. "My all-time favorite beers to experience are some of the Bavarian classics such as Ayinger Altbairisch Dunkel and Belgian saison," he admits. "Saison Dupont is still one of my absolute favorites. Closer to home, we vacation in Cape May, N.J., and I have loved the growth of Cape May Brewing and how far their beers have come—Summer Catch is the perfect beach beer, and King Porter Stomp is one of the best porters I've had lately."

"As for my own brewing, the last few years I have focused less on particular styles or regions and more on brewing for the season—lighter, more refreshing beers during the warmer months,

moving to amber and dark as the cooler months progress into the colder months, then reversing as the seasons restart. It's important to experience brewing across the spectrum, so I challenge myself with styles maybe I have not brewed before."

Brewing process and technique lay the groundwork for competition success, in his mind.

"Prepare, prepare, and prepare some more. Process excellence is critical to brewing and fermenting good beer. Don't get discouraged when your scoresheets come back. I have taken blue ribbons, but I have also gotten some underwhelming scores, too. The key is to learn, improve, and take the feedback to heart. Make necessary adjustments, try a new process, change your equipment up—strive to make the best beer you can, and put it out there. The

and cidery (and a guest meadery), and a small bar designated for wine, beer, cider, and mead. It's a wonderland for anyone involved in the hobby at any level. The club is affiliated with the store, but they leave us be and give us our space (literally and figuratively). At one point in the past, the two were tightly coupled, but Jason [Harris] let us go independent, while keeping many of the benefits of affiliation. We're pretty lucky that way."

Will Cass walked away with best of show at this year's competition. A homebrewer since 2000, Cass took the plunge after finding an unused Mr. Beer kit that had been a gift to his father.

"A few weeks later, I had a fizzy yellow beer that wasn't half bad," he remembers. "I was nonetheless bitten by the brewing bug and procured a 5-gallon kit from Beer Unlimited, my local homebrew shop. From there, I climbed the ladder of extract brewing, to following recipes from books, to developing my own recipes, and finally graduating to all-grain within a few years. Then came learning advanced brewing techniques and building my own brewing equipment. Twenty years later, I'm still learning and expanding my techniques to brew better beer across many styles."

Back when Cass started, internet forums and YouTube videos weren't available as they are today, so he relied on brewing books to fill the gaps in his knowledge.

"Stephen Snyder's *The Brewmaster's Bible* was the book that helped tremendously with my transition to all-grain brewing and being able to formulate my own recipes," he says. "Fast forward to 2012 when my wife and I bought our first home in Ardmore, Pa.: Tired Hands Brewing had recently opened and quickly became an influence on my own brewing. I have found how [brewer and co-owner] Jean Broillet can push the boundaries with certain styles, reimagining beers with unique ingredients, but also brewing very traditional European styles. It's been very influential on how I brew my own beer. I had also exhausted the brewing reading material at that point but found *Zymurgy* and *Brew Your Own* magazines great resources for education and brewing trends. The original Brewing TV with Michael Dawson and Chip Walton also had some great pieces on techniques such as decoction mashes, where visualization really helps with explaining and applying."

key is to amplify the hallmarks of the style, make it your own, but still stay within the confines of the guidelines."

Cass has set his sights high for follow-up success as a brewer. "The biggest goal I have is to win the pro-am at a future competition. I would love to experience brewing a recipe of mine at a professional level and enter it into the Great American Beer Festival®."

He has generously shared his recipe for Solstice, the American stout that claimed top honors at the War of the Worts. Cass thought very carefully about what he wanted the flavor profile to be like, and his planning paid dividends.

"I decided to make an American stout last year as my December-to-January dark beer, since its dark, roasty, and chocolate notes pair well with all the holiday treats that infiltrate our home. I took my time formulating the recipe since I knew the War of the Worts was coming and this would be an entry in a very competitive category. I modeled the sensory profile after the description on a package of high-end coffee beans—highlight the roast, but with

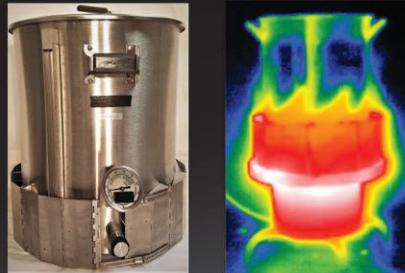
enough hop bitterness and citrus notes to complement and make sure it stays in the American stout realm."

Amahl Turczyn is associate editor of Zymurgy.



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Relax, Don't Worry, Have a Homebrew!

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

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



ON THE WEB

For more detailed info, head over to HomebrewersAssociation.org 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 (density of wort or beer)

RIMS – recirculating infusion mash system

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

SG – specific gravity (wort/beer density)

SMaSH – single malt and single hop

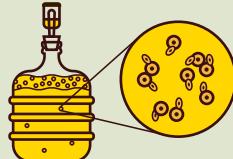
SMM – S-methyl methionine, precursor to dimethyl sulfide (DMS)

SRM – Standard Reference Method (beer color)

FERMENTING & 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

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Sanctioned Competition Program

NOVEMBER 2019

5º Concurso Cervejeiro da Confraria do Cerrado, 41 entries
Alessandro Dias, Goiânia, Brazil

1º Concurso Casa OLEC Poços de Caldas, 29 entries
Gustavo Pagan São Julião, Poços de Caldas, Brazil

DECEMBER 2019

LIBME Pro-Am, 32 entries
Gregg Kelley

JANUARY 2020

Winterbrew 2020, 186 entries
Brandon Kessler, Chicago, IL

CHAOS Dark Ale Club Competition, 15 entries
Jason Gozy, Chicago, IL

St. Cloud Craft Beer Tour Homebrew Competition, 19 entries
Ryan Stack, St. Cloud, MN

Copa Homo Cervecerus, 54 entries
Kike's Team, Quito, Ecuador

WHBC Midlands Invitational, 58 entries
Robert Gallagher

ZCZ-Draught Works 2020 Pro-Am, 21 entries
Jeff Shearer, Missoula, MT

Copa Verano Fermentos Caseros, 34 entries
Miguel Villalobos, San José, Costa Rica

Kris Kringle Challenge, 6 entries
Dan Strawn, Ontario, OR

KLCC Homebrew Competition 2020, 195 entries
Kunal Shah, Issaquah, WA

El Dorado County Fair Homebrew and Commercial Competition, 141 entries
Terrell Hillard, Clyde, CA

Stout Bout, 81 entries
Ian Romanick, Portland, OR

2020 Doug King Memorial Homebrew Competition, 119 entries
Ty Shively, Roseville, CA

DOZE Club Competition, 29 entries
David Jacoby, Lafayette, CA

SCB Annual Competition, 35 entries
Harry Kirkham, Edinburgh, Scotland

QUAFF COC British Beers, 31 entries
Travis Hammond, San Diego, CA

Fecha Final Campeonato Chilebruers, 30 entries
Erik Simoes y Alejandra Niegel

FEBRUARY 2020

Domras Cup Mead Competition 2020, 200 entries
Kristopher Pruitt, Elizabeth, CO

Homebrew Alley XIV, 588 entries
Mark Zamaitis, New York, NY

America's Finest City Homebrew Competition, 479 entries
Ralph Carrasquillo

Rhapsody in Brew, 54 entries
Chris Meta, Pittsburgh, PA

5th Annual 50 West/Ocelot Classic, 112 entries
Richard Deangelis, Stafford, VA

GEBL IPA Challenge, 130 entries
Matt Hibbs, Auburn, WA

Hop Idol Homebrew Competition 2020, 120 entries
Alex Kuyper, Seattle, WA

Maineiacs Groundhog Day Homebrew Competition, 71 entries
Dave Williams, Swampscott, MA

Hogtown Brewers Fruit and Spice/Herb/Veg Intraclub, 11 entries

Bill Edwards, Evinston, FL

III Bay of Biscay Homebrewer Cup (Basquery BBeer), 62 entries

Jon Ander Tejada, Vitoria-Gasteiz, Basque Country, Spain

UK National Homebrew Competition, 325 entries

Matthew Scorer, Leicester, UK

SNAFU's 2020 Winterfest, 82 entries
Shaun Laughlin, Las Vegas, NV

Amber Waves of Grain, 535 entries
Daniel Hamm-Johnson, Corfu, NY

Craft Brewer Beer Competition, 120 entries
Byounghee Lee, Seoul, Korea

Beerfest 2020, 157 entries
Hayden Henderson, Mentone, Australia

LIBME Pro-Am (February), 31 entries
Ryan Braswell, East Patchogue, NY

Mellarius Cup 2020, 30 entries
Pierre Rodrigue, Lloydminster, AB, Canada

Queretaro Homebrew Cup 2020, 119 entries
Guillermo Velasco González & Sara Isabel Plascencia Cuellar, Tijuana, Mexico

Celebrity Deathmash 2020, 83 entries
Michael Neville, Dearborn, MI

Bockfest, 33 entries
Don Marsh, Cincinnati, OH

Cowtown Yeast Wranglers Homebrew Roundup 2020, 446 entries
Trevor Armstrong, Whitby, ON, Canada

Bluff City Brewers & Connoisseurs Extravaganza!, 223 entries
Nik Volkert, Acworth, GA

Shamrock Open XXV, 370 entries
Mike Rousseau, Charleston, SC

2nd Annual Garden State Homebrew Competition, 348 entries
Chris Bellina, North Plainfield, NJ

MARCH 2020

Wolfgang Cup, 21 entries
Cameron Gray, Cape Town

Champion of the Pint, 301 entries
Dave McWilliams, St. Louis, MO

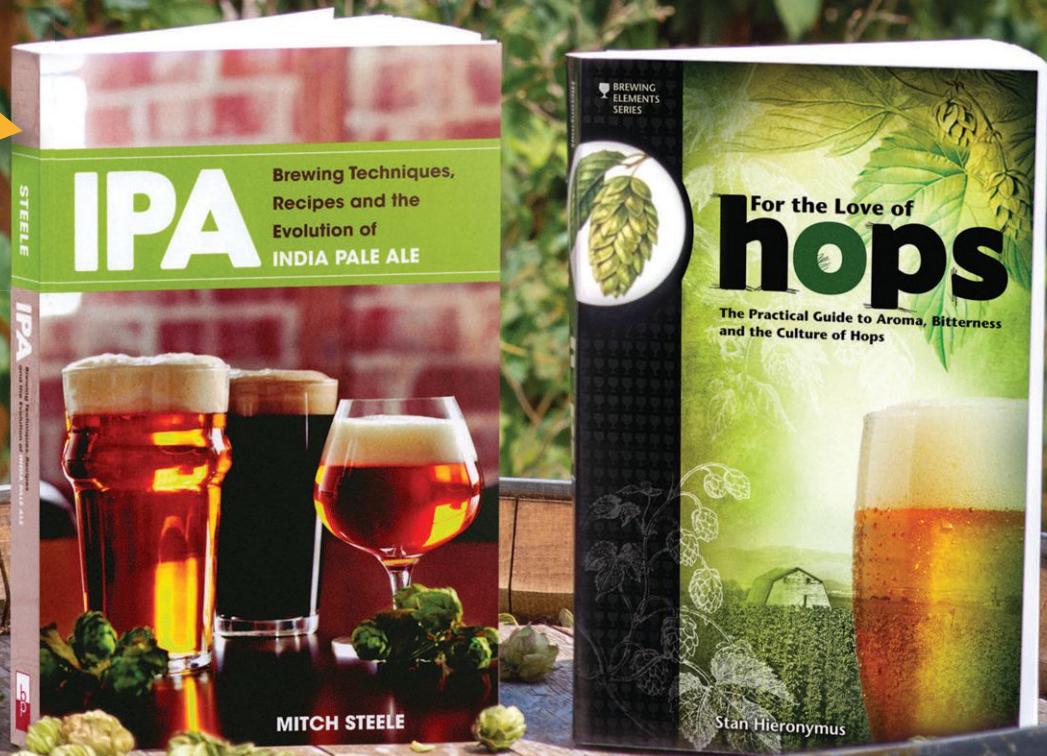
Lager Than Life, 90 entries
Dave Strachan & Richard Davies, UK

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Baltic porter is a tricky beer to get right. It is a black beer with the smoothness of a lager, much like a schwarzbiere, but with higher alcohol. It has the roasted but not burnt flavor of an English porter but can be nearly as strong as an imperial stout. Getting just the right balance between bitter black grains, caramel sweetness, fruitiness, toasty malt depth, and hops is a daunting task, but we found two craft brewers who seem to have perfected the technique. →

Judges' Score THE DUCK-RABBIT BALTIC PORTER

Duck-Rabbit Brewery, Farmville, N.C.

BJCP Category 9C, Baltic Porter



DAVE HOUSEMAN



SANDY COCKERHAM

→ Duck-Rabbit Brewery in Farmville, N.C., has won multiple awards for its Baltic porter and other beers. Brewer Paul C. Phillipon is a master craftsman and a perfectionist when it comes to top-quality beer, putting his small brewery on many craft enthusiasts' must-visit lists. Phillipon's Baltic porter is rich and velvety, with no burnt edges, 9% alcohol by volume, but somehow approachable and easy to drink. It won medals at the Great American Beer Festival (GABF) in 2009 and 2015.

Jack's Abby Craft Lagers in Framingham, Mass., also has a reputation for excellence when it comes to craft beer, and its three founding brothers—Jack, Eric, and Sam Hendler—brew a Baltic porter called Framinghammer that has a wide following of its own. At 45 IBUs and an initial gravity of 23.5°P, it makes use of brown sugar to hit 10% ABV, yet remains smooth and balanced. Oats lend a silkiness to the body of this chocolate monster, and a lengthy cold-conditioning period ensures a clean, smooth finish with very little heat.

Framinghammer won a gold medal at the 2014 World Beer Cup, and because of its popularity, the brewery follows up its seasonal release with several different versions, including Barrel-Aged, S'Mores Barrel-Aged, Coffee Barrel-Aged, Graham Cracker Barrel-Aged, and even a PB&J Barrel-Aged, among others.

Many thanks to both breweries for hooking up our lucky judges with these dark, delicious elixirs.



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AROMA

There is a rich, complex combination of roasted malts, very light hop aroma, and ethanol. Roasted malts are caramel and chocolate with no burnt, roasted barley, or coffee notes. There is a very low ester profile, although chocolate-covered figs come to mind. The alcohol is not hot or fusel. Clean lager fermentation without diacetyl or DMS. **10/12**

APPEARANCE

Black. Opaque. Rocky brown head with very good retention. Well- but not over-carbonated. **3/3**

FLAVOR

Roasted malts are sweet up front with hints of chocolate and caramel, supported by firm bitterness and very a light herbal hop flavor. Alcohol is quite complex but not hot or fusel. Finish is balanced, not overly dry or sweet. In the aftertaste, there is some light fruitiness, but more dark pit fruits from the malts used than from fermentation. Clean, crisp lager without diacetyl or DMS. **18/20**

MOUTHFEEL

Medium-full to full bodied. Medium high alcohol warming. Well-attenuated. Smooth, creamy, soft mouthfeel that thins out in the finish. **5/5**

OVERALL IMPRESSION

Excellent balance of malts, hops and alcohol. True to the Baltic porter style, it's clearly a well-made lager and properly relies on a good selection of malts that distinguish this from a stout. Nice chocolate roasted malt character rather than burnt or coffee notes. A hint of hop aroma and flavor adds to complexity. I would only suggest the alcohol might be a tad high given the mouthfeel of the finish, but it's a nit I wouldn't pick at too hard. This is definitely a great beer to have with a chocolate lava cake and ice cream made with the beer itself. **9/10**

TOTAL SCORE 45/50

AROMA

Moderate malt starts as dark bittersweet chocolate with very low undertones of caramel, burnt sugar, light coffee, and a tiny note of char. As the beer vents, touches of licorice and a toasty bread/nutty character emerge, with a hint of smoke. No hops. Alcohol is just below moderate, clean, with a vinous note. Medium-low dark fruits are plum, currants, and a touch of raisin. Cleanly fermented. **10/12**

APPEARANCE

Color is the darkest brown/black, and the beer is opaque. Pours with a thick, light brown head of mostly fine bubbles. Retention is quite good and leaves a fine foam ring around the glass. **3/3**

FLAVOR

Medium-high malt is rich, dark chocolate, a tinge of coffee, and some bittersweet cocoa. Semisweet dark chocolate and caramel lead to a dry, bittersweet cocoa. Alcohol warming is moderate but not hot. Low currants mix into the dark chocolate. Aftertaste is light anise and dry cocoa. **17/20**

MOUTHFEEL

The body is a little bigger than medium, not quite medium full. Medium-high carbonation leaves a creamy, mouth-filling sensation, coating the mouth without heaviness on the palate. A tiny roast-derived astringency sits on the tongue into the finish. **4/5**

OVERALL IMPRESSION

A big, easy-drinking porter of the Baltic persuasion, with malt anchored by dark bittersweet chocolate. Dry dark cocoa lingers pleasantly with dark fruit and licorice. Alcohol isn't hot and doesn't cause a warming sensation. I want more! This is a smooth, delicious dessert that isn't sweet, but still rich. **8/10**

TOTAL SCORE 42/50



Judges' Score

FRAMINGHAMMER BALTIC PORTER

Jack's Abby Craft Lagers, Framingham, Mass.

BJCP Category 9C, Baltic Porter



SCOTT BICKHAM



GORDON STRONG

AROMA

Rich, dark malt aromatics explode as the beer is poured. Moderately high notes of licorice, toffee, and molasses, with pleasant port wine-like character are enhanced by prominent ethanol. Yeast esters are appropriately subdued, and no hops are evident. Roast malt character is smooth, not sharp or burnt. A little soy sauce comes through. **10/12**

APPEARANCE

Black, nearly opaque. The beige head is tightly beaded and quite persistent. No clarity issues. **2.5/3**

FLAVOR

Big, rich, and complex, featuring prunes, raisins, vinous, and roasted malt flavors. The molasses and toffee are accompanied by bittersweet cocoa. Low soy sauce again. Hop bitterness level is higher than usual for the style, and complemented by a semi-dry finish with noticeable alcohol. Fermentation character is clean, other than a low level of higher alcohol. **17/20**

MOUTHFEEL

Full bodied, with a pleasant weight on the palate. Medium-high alcohol warmth with a touch of solvent. I pick up slight astringency from the roasted malts, but it's not unpleasant. **4/5**

OVERALL IMPRESSION

This is a wonderfully well-crafted Baltic porter, albeit at the higher end of the alcohol range. It's a welcome beverage to sip on some of the recent cold winter nights. The only blemishes are a little too much soy sauce character and noticeable higher alcohol notes, both of which should diminish with some aging. I was fortunate to find a barrel-aged example on tap and found neither of those characteristics. Both versions are quite interesting and pleasurable. **8.5/10**

TOTAL SCORE 42/50

AROMA

Roasty, rich malt in the nose seems like it has some darker malts in it. Smooth. No hops noted. Light burnt and smoke note, not typical for the style. Not many esters. Light alcohol. Clean fermentation profile, nothing off. **8/12**

APPEARANCE

Low off-white head settles fast. Very dark brown color. Opaque in normal light. Seems clear to a light. **2/3**

FLAVOR

Clean fermentation. Malt dominates with roasted and rich malt. There is a burnt edge to the roast, almost smoky. Balanced bitterness makes it seem even—not getting sweetness at all. Also not getting the dark fruity malt flavors I expect in this style. Light alcohol flavor. Finishes with a balanced bitterness, heavy maltiness, and a light roast twang. Relying a bit too much on burnt malt and missing some of the fruity complexity that I crave in this style. **15/20**

MOUTHFEEL

Full body. Warming alcohol. Smooth texture, creamy. Medium carbonation. Dextrinous thickness. A sipping beer. **4/5**

OVERALL IMPRESSION

The roast is a bit overdone and dark, and the fruitiness is light in the balance. Seems more like a lagered imperial porter than a Baltic porter. This beer should age well; maybe reducing the alcohol and bitterness would bring out more of those flavors I'm missing. Super smooth and silky. A good winter sipper but a little hard to recognize as the style. Well-crafted, good technical brewing. **7/10**

TOTAL SCORE 36/50



JUDGING

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

OUR EXPERT PANEL

Includes Dave Houseman, a Grand Master VII level judge and competition director for the BJCP from Chester Springs, Pa.; Sandy Cockerham, a Grand Master VI level judge from Indianapolis, Ind. and an associate exam director and Midwest Representative for the BJCP; Scott Bickham, a Grand Master IV judge from Corning, N.Y., who has been exam director or associate exam director for the BJCP since 1995; and Gordon Strong, a Grand Master XIII judge, principal author of the BJCP Style Guidelines, and president of the BJCP board who lives in Beavercreek, Ohio.



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Brew Day Preppers

By Dave Carpenter

Had I known just a few weeks ago that, reacting to the global spread of the COVID-19 virus, panicked shoppers would deplete store shelves of staple items, I might have correctly guessed that hand sanitizer and facial tissue would be among the first things to go. Given some context, I might have even figured out the face masks. But the run on toilet paper? *Toilet paper?* That one caught me completely off guard, which, let's be frank, is not an enviable position where toilet paper is concerned.

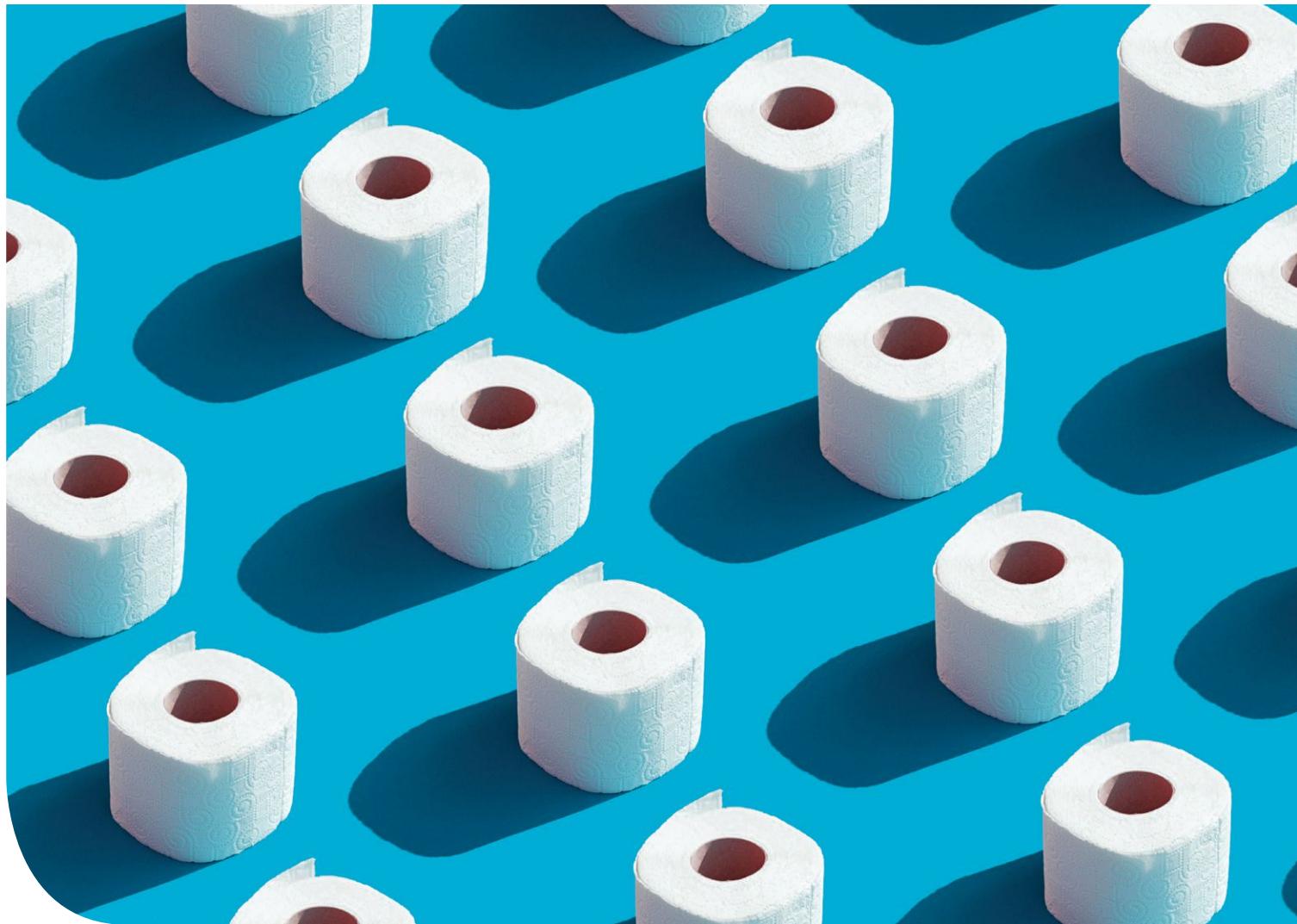


Photo © Getty/pepfoto

There's little I can do to help you with any toilet paper-related emergencies you may be experiencing at this moment. But, I would like to offer a message of encouragement and remind you that when all this is behind us and we emerge bleary-eyed from our quarantines like so many Punxsutawney Phils squinting into a waxing midwinter sun, we're all going to need a drink. Every one of us. Together.

“
We’re going
to get
through
this, and
when we
do, we’re
all going
to need a
beer.

Homebrewers, this is the challenge for which we have been preparing since we brewed our very first kits. I do not advocate hoarding, but I’m going to make an exception. Now is the time to buy all the brewing ingredients you can reasonably justify to your significant other and brew as you’ve never brewed before.

Forget the toilet paper. You probably can’t find it anyway. But go ahead and stockpile all the grains, malt extract, hops,



One-Ply Rye

Rye IPA

Recipe courtesy Dave Carpenter.

One-Ply Rye is based on an American IPA I’ve been brewing for a few years, but it’s a great one to brew now because the ingredients are so easily swapped to accommodate whatever you have on hand. No rye malt? Use more barley malt or sub in some wheat or oats. Caramel rye malt is readily replaced with any caramel malt in the 30–40°L range. And the world is your oyster when it comes to hops. When I first started brewing this, Amarillo hops were somewhat hard to come by, but they’re easy to get these days. I like the simplicity of dry yeast in a beer like this, but by all means, use what you’ve got.

Batch volume: 5 US gal. (18.9 L)

Original gravity: 1.068 (16.6°P)

Final gravity: 1.016 (4.1°P)

Color: 9 SRM

Bitterness: 62 IBU

Alcohol: 7.2% by volume

MALTS

10 lb. (4.54 kg) pale malt

3 lb. (1.36 kg) rye malt

1 lb. (454 g) caramel rye malt, 30–40°L

HOPS

1 oz. (28 g) Magnum, 12% a.a. @ 60 min

1 oz. (28 g) Amarillo, 9% a.a. @ 10 min

1 oz. (28 g) Simcoe, 13% a.a. @ 5 min

1 oz. (28 g) Amarillo, 9% a.a. @ 0 min

1 oz. (28 g) Amarillo, 9% a.a., dry hop 5 days

1 oz. (28 g) Columbus/Tomahawk/Zeus, 14% a.a., dry hop 5 days

1 oz. (28 g) Simcoe, 13% a.a., dry hop 5 days

YEAST

2 sachets Lallemand Nottingham

ADDITIONAL ITEMS

1 tablet Whirlfloc

8 oz. (227 g) rice hulls as lautering aid, optional

BREWING NOTES

Mash grains (and, optionally, rice hulls) at 152°F (67°C) for 60 minutes. Lauter and sparge at 168°F (76°C) to collect approximately 6 gal. (22.7 L) of sweet wort. Boil 60 minutes, adding kettle hops and Whirlfloc at the indicated times.

Chill hopped wort to 62°F (17°C) and pitch yeast. Ferment at 64°F (18°C) until specific gravity stabilizes at or near 1.016 (4.1°P). Optionally rack to secondary before adding dry hops. Bottle or keg with 2.6 vol. (5.2 g/L) CO₂.

EXTRACT VERSION

Replace the pale malt and rye malt with 8.5 lb. (3.86 kg) rye liquid malt extract. Reduce the caramel rye malt (or caramel malt of your choice) to 8 oz. (227 g), crush, and steep at 155°F (68°C) for 30 minutes. Dissolve the liquid malt extract in the resulting wort, top up with reverse osmosis water to your desired boil volume, and proceed as above.



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and yeast you can fit in your brewing space and start filling those fermenters.

As I write this, I have a dry Irish stout in primary (it was supposed to be for St. Patrick's Day, but I got distracted) and my wife's IPA is bubbling away in a carboy. A batch of apple wine occupies another carboy and a Bohemian-style Pilsner is next on deck. But that's only 30 gallons. We'll have to do better.

My next beer in the queue will be what I am now calling One-Ply Rye, and I'm sharing the recipe with you here. It's a fairly basic West Coast-style IPA that uses a good measure of rye. You can see right through the glass, and there's nothing juicy about it. But it is infinitely adaptable should you wish to steer it in a different direction to suit your own tastes or make use of whatever ingredients you have on hand.

If you need ingredients or equipment, check out the AHA's new regularly updated directory of shops that are offering alternative sales options online or by phone. They'll be more than happy to pick your order and either deliver it or drop it just outside the shop door when you arrive. Zero need for face-to-face contact. Find it now at HomebrewersAssociation.org.

While you're at it, go ahead and buy yourself a gift card, too. You can use it later. Your shop needs cash now.

We're going to get through this, and when we do, we're all going to need a beer. Your friends are going to need a beer. Your neighbors are going to need a beer. Your coworkers who currently exist only in video chat windows are going to need a beer. Your family may or may not need a beer, but they're probably all coming to visit you as soon as travel restrictions are lifted, in which case you're definitely going to need a beer.

Empty bottles embolden the enemy. Kicked kegs encourage COVID. Keep your tanks mashing and your fermenters full, and we'll toast on the other side.

Dave Carpenter is editor-in-chief of Zymurgy.



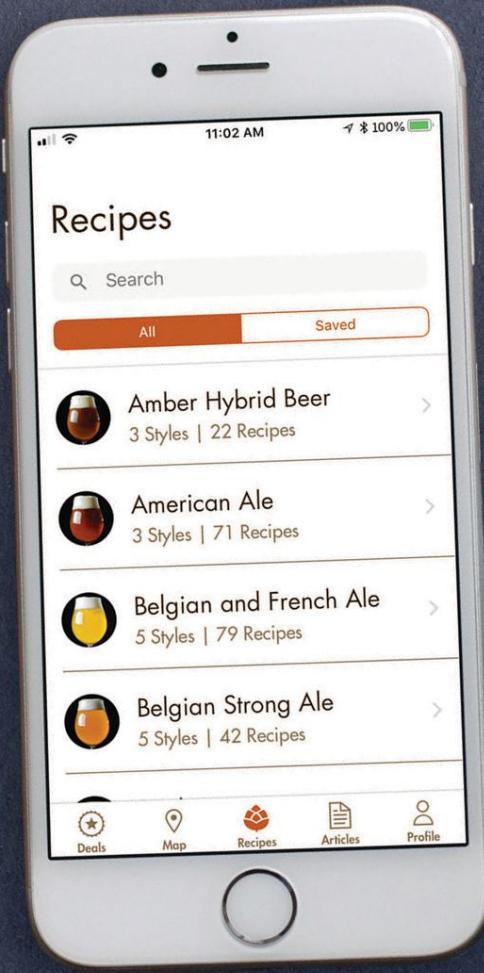
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Jamaican Me Thirsty

After returning from a Farmer2Farmer assignment in Georgia (Eastern Europe, not Southern US) last November, I was pleasantly surprised to learn of a winemaking assignment in Jamaica in late January and early February. I envisioned conducting winemaking classes in a tropical paradise beneath swaying palm trees. Sandy beaches and drinking Red Stripe.

That image holds true for perhaps 10 percent of the island, but the rest is hilly and mountainous. I was stationed in Mandeville, the coldest part of the island, where I taught for Jamaica's Rural Agricultural Development Authority. The closest beach, Alligator Pond, was an hour's bumpy road to the south. I was disappointed to learn there were no alligators and that the town was named for a series of ridges that resemble the reptile's back.

I came prepared with \$100 worth of equipment, yeast, instruments, and chemicals, and I brought several tropical winemaking recipes. It turned out to be a successful endeavor through which I taught the art of tropical winemaking to more than 40 participants. We made several different wines, including watermelon, pineapple, guava, ambarella, carrot, and dark currant.

One participant offered me a small bottle of country roots wine, which was made from cane juice, guinea hen weed, sarsaparilla, medina, and rosemary. Made in Summerfield in Jamaica's Clarendon parish, it had a medicinal, pruny taste. Roots wine is popular across the country.

Of course, the national brew is Red Stripe. The original Red Stripe lager, which was first brewed in 1928, is made from Pilsner malt, cassava starch, hops, and water. At 4.7% ABV and 10 IBUs, it's a standard international pale lager without much flavor or aroma, but it's refreshing in the tropics. The stubby bottle was introduced in 1965. I had my first in Jamaica at



a beer shack in Alligator Pond during the 7.7-magnitude Caribbean earthquake that struck on January 28, 2020. The ground shook for a long minute, but I did not spill my beer.

Red Stripe also comes in several fruit flavors, all based on Red Stripe Light and all available only in Jamaica. Red Stripe Light and its flavored variations do not contain cassava and only have 3.6% ABV. I tried Red Stripe Sorrel (sorrel, *Hibiscus sabdariffa*, is a relative of hibiscus) at Alligator Pond—it was quite light with just a hint of fruit. Made with sorrel extract, ginger, and sugar, it is most popular at Christmastime. I plan to brew my own interpretation with locally grown dried hibiscus.

After my assignment in Mandeville, I bussed three hours across Jamaica, heading west to the resort town of Negril. There, I discovered Dragon Stout, a 7.5% ABV foreign export stout comparable to Guinness Foreign Extra Stout, which is also brewed in Jamaica. It was dark, thick, and robust, without much head or hop aroma. A little creamy and sweet, more like a porter than a stout, it was my afternoon delight.



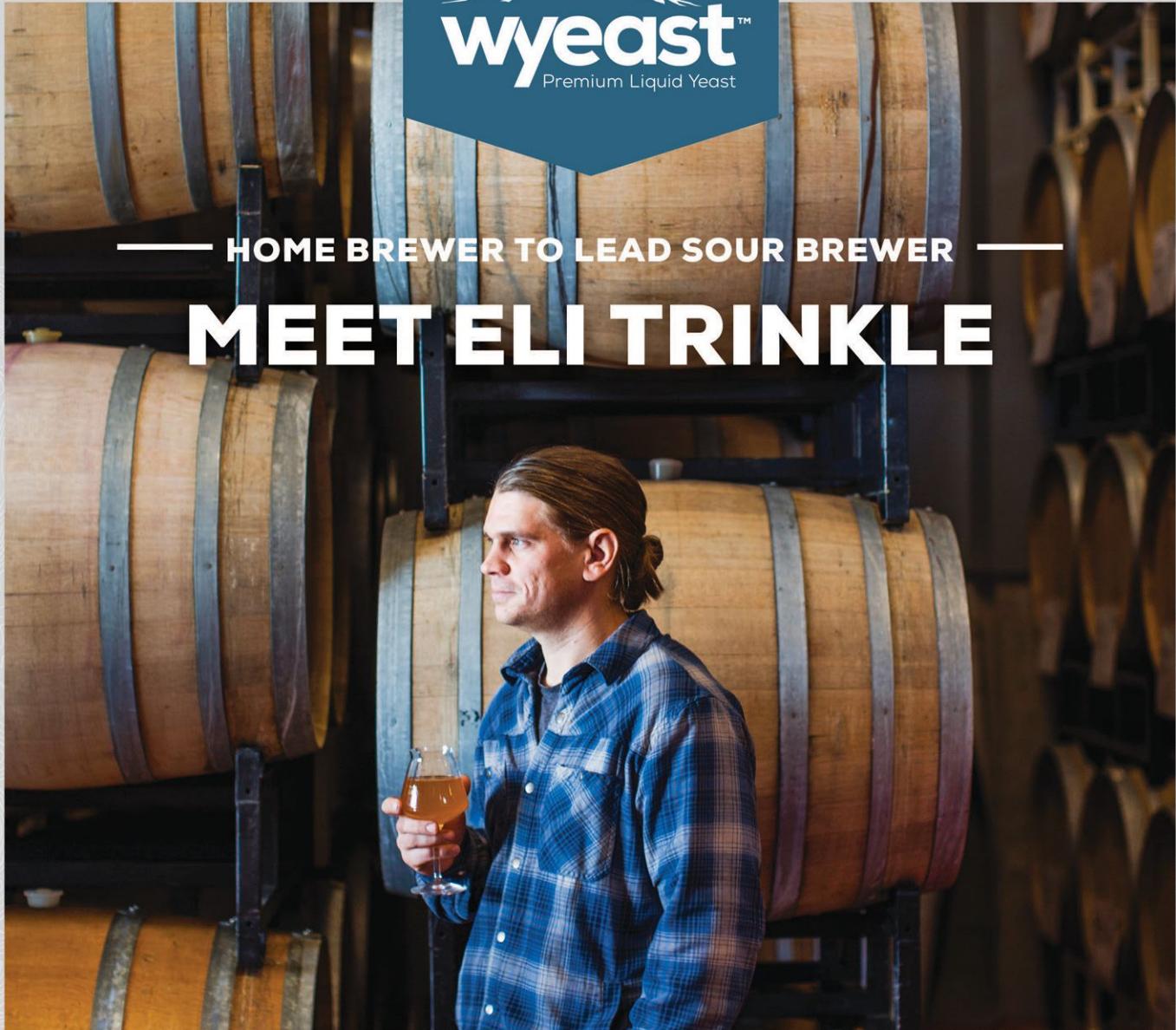
I plan to return to Jamaica in July on another assignment, this time during mango season. Just another tough day at the office in the tropics.

Ralph Bucca is a Lifetime AHA member, a founding member of Brewers United for Real Potables (BURP), and a zymurgist for all things fermentable. As a volunteer with the Farmer2Farmer program, he has had the opportunity to sample tonto, palm wine, chicha, and many other unique beverages in developing countries.



— HOME BREWER TO LEAD SOUR BREWER —

MEET ELI TRINKLE



Eli Trinkle of Upland Brewing Co. was immediately drawn to home brewing after being introduced to it by his neighbor. After just one month of owning his own home brew setup, Eli was brewing all-grain with Wyeast smack-packs and kegging his own beer. He admits he was so intrigued by the process, it consumed his life. He spent countless hours researching and experimenting—he even worked as an assistant brewer while finishing his degree in engineering technology. Post-graduation, Eli decided that instead of pursuing more education, he'd turn his passion for brewing into a career.

Today, Eli has crafted a diverse portfolio of award-winning sours for Upland. He attributes his present-day brewing devotion to his colleagues at Upland, to the people of Bloomington, IN and the pride associated with pioneering a quality fermentation product. At Wyeast we share these same values, which is why we're pleased to toast the work of Eli and the rest of the Upland Brewing team.



See wyeastlab.com for homebrewing recipes from Eli and other commercial craft brewers.

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