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By Dave Carpenter



Pictured Left to right: Bianca Sage and Bea Köster (Technische Universität München Weihenstephan); Chuck Skypeck, Bob Pease, Chris Williams, Sylvia Kopp, Adam Dulye (Brewers Association); Eric Rosenberg (Bryant Christie); Dave Carpenter (AHA).

A Global Phenomenon

If you flip over to page 82, you'll see the usual AHA/Beer Judge Certification Program (BJCP)—sanctioned competition calendar we print in every issue of *Zymurgy*. Had I not called your attention to it, you might not have noticed that 21 of the 46 competitions scheduled in November and December—nearly half—take place outside the United States. Browse the competition calendar and you'll find contests from Portugal to Peru, New Zealand to the Canary Islands, the Czech Republic to South Africa.

This past September, I had the pleasure of attending the drinktec expo in Munich with several of my colleagues from the Brewers Association, where we promoted American craft beer on the international stage. As I poured samples for eager tasters from around the globe, I enjoyed meeting homebrewers from innumerable countries. I was struck at just how contagious the passion for homebrew is.

Homebrewing has become a global phenomenon, and beer enthusiasts from around the world look to the AHA for advice. We have dipped our toe in the water this year by translating *Zymurgy* into Spanish, but the opportunity to engage an international audience goes far beyond multilingual content. The AHA can't be all things to all homebrewers, but I encourage you to reflect on your own homebrewing journey. Reflect on the generosity you've encountered along the way, and think of ways to pay that forward to a new generation of homebrewers and beer lovers.

The next time you travel, consider attending a local homebrew club meeting if you can spare a few hours. If you have BJCP credentials, check out the competition calendar and include a contest in your next trip so you can offer your feedback and experience to homebrewers who are thirsty for knowledge. Even if your travels don't take you beyond the borders of the USA, a business trip from California to Massachusetts might teach you something you never knew about New England IPA.

And don't forget about Learn to Homebrew Day, coming up on November 4. It's your opportunity to share your love of brewing with someone who is just thinking about getting started.

Finally, I want to encourage every reader to take part in our *Zymurgy* reader survey. We are looking for your feedback—what do you love and what do you not? It's your chance to tell us what you think and help determine the future course of this magazine. We're here for you, and we want you to eagerly anticipate each and every issue that arrives in your mailbox (physical or electronic). So head over to HomebrewersAssociation.org/reader-survey, have your say, and be entered to win some sweet AHA swag.

Until next year, cheers!

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



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By the editors of Zymurgy



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By Adam Ronchetti

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Find these homebrewing recipes and more on our website @ HomebrewersAssociation.org/homebrew-recipes



>> GET THERE!

27TH ANNUAL GREAT BREWS BEER FESTIVAL

Head to Lake Harmony, Pa. November 18 and 19 to check out the 27th annual Great Brews Beer Festival. This two-day, indoor event features beer samplings, two stages of live music, games, giveaways, food, craft vendors, and more. Guests can sample an estimated 100 beers representing every style under the sun.

One- and two-day general admission tickets are available for \$40 and \$70, respectively, or spring for a single-day VIP ticket (\$60), which also includes access to the VIP lounge, exclusive beer tastings, and hors d'oeuvres. Lodging packages are also available that include a place to stay and access to a wide variety of amenities like mini-golf, archery, tennis, and cycling.

At press time, the 2017 beer list was unavailable, but the 2016 lineup included well-known breweries such as Avery, Bell's, Hardywood, Heavy Seas, Neshaminy Creek, New Holland, Sierra Nevada, and Victory, plus a huge lineup of local and regional breweries.

For more information, go to splitrockresort.com.

November 3–4

8x8 Brewing Project

Beijing, China

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December 31

Brew Year's Eve

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For more craft brewing events, go to CraftBeer.com

>> BREW NEWS

ZYMURGY'S 12TH ANNUAL GADGETS ISSUE

Hey homebrewers! It's time for *Zymurgy*'s 12th annual Gadgets issue (January/February 2018)! Have you created your own brewing equipment or tweaked your existing equipment to make your brew day easier? Or have you discovered a brewing-related use for a common (or not so common) household item?

If so, please upload a description of your gadget along with (high-resolution) photos at HomebrewersAssociation.org/gadgets-submission. Please include your city and state (or country!), and, if relevant, your homebrew club. Submissions are due by November 10. Thanks in advance for helping us make the 12th annual Gadgets issue the best ever!

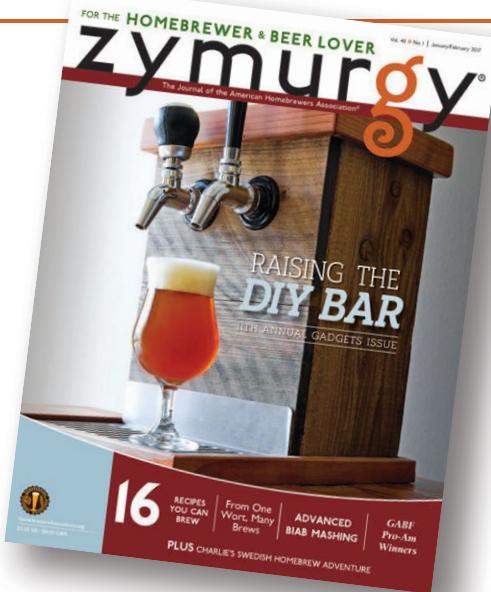


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>> BEER QUOTE

**“Strong
beer is the
milk of the old.”**

— Martin Luther



>> BREW NEWS 2

ZYMURGY READER SURVEY

AHA members regularly cite *Zymurgy* as their most valued member benefit, and we want to know what you think. Please take 5 to 10 minutes and give us your opinion at HomebrewersAssociation.org/reader-survey.

This is an opportunity to have all 46,000 of your voices heard and help us steer the future of your favorite magazine. What do you love? What do you not love? What kind of content would you like to see us add? What do you think of our current mix? Tell us what you think. We will compile the results and use your feedback to make *Zymurgy* even more valuable than it already is.

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SURVEY AND
ENTER TO
WIN AHA
SWAG!

Photo courtesy of Cincinnati Malt Infusers



>> CLUB NEWS

CINCINNATI MALT INFUSERS

By Michael Florez

We started with the premise that our club had some very good brewers. Several members of the Cincinnati Malt Infusers (CMI) had won best-of-show awards in local and regional competitions. Since its inception in 1994, CMI had averaged 45 to 60 members annually. However, only one CMI member had won at the AHA's National Homebrew Competition (NHC). We planned to change that.

Several CMI members met in the spring of 2015 and decided on a new club project. Our goals were simple: (1) have a CMI member win a gold medal at the NHC; (2) learn a specific style of beer and develop an understanding of what is award-winning for the style; and (3) become better brewers and develop a community among CMI brewers to foster growth, learning, and a little beer fellowship.

Requirements for participation were simple: you must be an AHA member; you must register your entries; and you must deliver your entries by the deadline. We started by soliciting the advice of past Ninkasi Award winners Jamil Zainasheff and Gordon Strong. Each had a few pints of wisdom to share.

Jamil suggested flooding a style category with multiple exceptional entries. He wrote, “If you can get 10 people brewing at a high level, then sending in 10 great examples in one category should pos-



Check out Club Connection at HomebrewersAssociation.org/community/clubs/ for more club news

sibly net you a medal.” Gordon advised, “I would be absolutely certain you all are sending your best beers, not just all the beers you think might place. Things have changed a little [in the NHC] . . . most notably the quota system.” We took this as a directive to include only our best beers in addition to the club project style.

CMI leadership took this advice to heart in planning our run at the NHC medal stand. Will Magnuszewski and Rick Franckhauser (CMI's two BJCP National ranked judges) reviewed prior NHC competitions and selected category 7B, Altbier as our style for the 2016 NHC. At the time, few CMI members were familiar with the style. Even fewer had tasted it.

As a backup, Will suggested we brew a second style deemed “low-hanging fruit.” Based on the relatively small number of entries, our fearless leaders settled upon category 1A Light Lager. For many of us, this category represented the reason we became homebrewers. For some it was about avoiding this style. For others, it was a challenge to brew it.

With the beer styles in mind, CMI recruited members in the summer of 2015 to brew our first attempt at a medal winner. In October 2015, CMI invited Master judge Ron Smith from the Foam Blowers of Indiana club (FBI) to give a presentation on altbier. CMI shipped in several

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bottles of Zum Uerige, one of the BJCP's recommended commercial examples. We also tasted the first attempts of the members' homebrew, all while eating brats and metts. Ron discussed the history and the flavor profile of altbier, and some of the fresher homebrewed examples were superior to the aged beer from Düsseldorf. This drove home the point that altbier is better fresh.

The CMI members also entered altbiers and light lagers in our Cincinnati Oktoberfest Homebrew Competition that same month. We had enough examples of category 7B that several of the judges became suspicious of our plan to storm the class. After the competition, members gathered to review the judges' comments and discuss changes to our recipes to brew again for the NHC in 2016.

We re-brewed our entries and drove them together with our best beers in March of 2016 to Indianapolis for the regional competition. To enhance our chances of winning, we employed Dr. High Priest Abayomi Aaliyah to cast a voodoo spell over our beers to make them irresistible. We baited the judges with a couple of six packs of Cincinnati's finer local microbreweries. Then we waited.

By April, we were drunk with success. CMI nearly swept the Amber Hybrid Beer category in Indianapolis with Tim and Mary Pat McKee taking first and Will Magnuszewski and Kathryn Kien taking second. In addition, Tim and Mary Pat McKee and Eric Carman punched through the first round with a second in Strong Ale and a first in German Wheat, respectively. Surely, we had decoded the winning strategy to claim a medal at the NHC.

Alas, it was not to be. When the results of the 2016 NHC in Baltimore were posted, CMI was sadly missing. But, the project was not a total failure. We learned about altbier. Tim & Mary Pat McKee went on to brew their recipe at a local microbrewery. We had a couple of beers made to the mini-BOS in Baltimore. We learned a little about fresh versus aged altbier. We had fun as a group trying to brew better beer, and many of us now brew an altbier as a regular beer in our annual brewing rotation.

But, there was unfinished business.

CMI leadership met again in the summer of 2016 to discuss another charge to the medal stand for 2017. This time we chose category 27 Historical Roggenbier, based in large part upon Eric Carman's strong showing in an underrepresented category. Once again, the NHC project members set to brewing an award winning rogenbier.

CMI members met at our 2016 October meeting to discuss all things rye. We had cookies, bread, beer, and whiskey made with rye to compare the flavor with similar foods made with barley and wheat. We concluded that the flavor of rye versus wheat is very subtle, if almost imperceptible. Only a side-by-side tasting of rye and wheat grains highlighted their differences. For a second year, CMI members bombarded the category 27 Historical Beer in the Cincinnati Oktoberfest Homebrew Competition with nearly a dozen rogenbiers. The judges for the rogenbiers were particularly critical of what they surely must have thought a club prank.

For a second time, the NHC project brewers met after the Oktoberfest Competition to discuss updates and changes to their recipes for the 2017 NHC. After re-tooling and re-brewing our recipes, sometimes three or four times, we drove our rogenbiers and

our other best beers to Indianapolis. For a second time, CMI almost swept the class for German Wheat beers with Eric Carman and Rick Franckhauser winning second and third. Will Magnuszewski and Kathryn Kien also grabbed silver for their light lager. Our celebration was much more reserved than the "dog pile" of 2016. Further tempering our excitement was the thought of getting rid of all that rogenbier in our basements.

But, this year would be different. Eric Carman crashed the medal stand with a second in German Wheat beers in Minnesota. Success tasted good. We accomplished nearly all of our goals. The gold medal is our next prize.

We learned about some unfamiliar beers, we practiced brewing and re-brewing our recipes, and we celebrated some victories. CMI is still pursuing gold and maybe, just maybe, a Gambrinus Award for a small club from the Queen City on the River.

Special thanks to all the NHC Project Brewers: Gavi Begtrup, Eric Carman, Ben Echtenkamp, Lucian Florea, Rick Franckhauser, Jason Hammond, Dave Mangels, Will Magnuszewski & Kathryn Kien, Tim McDonald, Tim & Mary Pat McKee, Eric Penrod, Chris Siegman, and Chris Wagner. Also, thanks to Dave Dixon for carrying the CMI standard. ♦

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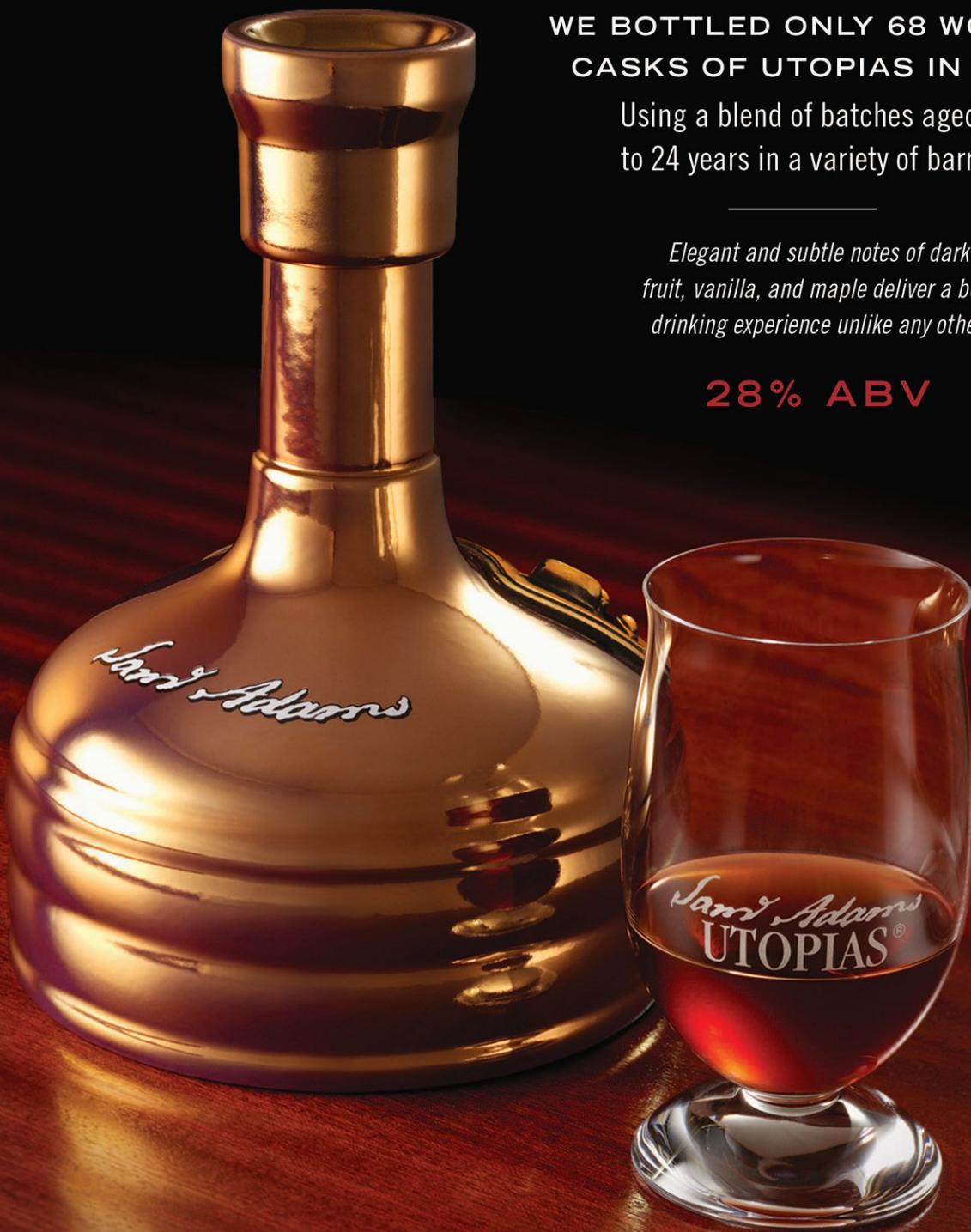
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By Gary Glass



Quarterly Homebrew Supply Shops Survey

If I haven't told you this recently, I really appreciate your membership to the American Homebrewers Association! There's more to the AHA than *Zymurgy* magazine, AHA Member Deals, our events, and all of the great benefits the AHA offers to members. Your membership dollars help ensure the AHA, an association proud to advocate on behalf of homebrewers worldwide, will be around for the long haul.

You may not be aware that the AHA conducts both an annual survey and four quarterly surveys of homebrew supply shops. We do this to help us track the health of the hobby and to help shops understand the market. No one else is doing this kind of work.

Following annual declines in gross revenue of two percent in 2015 and one percent in 2016, our data for the first half of 2017 show that shops in general saw modest declines in gross revenue of 3.4 percent and 2.2 percent, respectively, for the first and second quarters relative to 2016 revenue. When looking just at brick-and-mortar stores (i.e. not primarily online businesses) that have been open five or more years, the picture is somewhat worse, with declines of 6.1 percent and 7.7 percent, respectively, for the first and second quarters of 2017, meaning that online retailers and newer brick-and-mortar stores are faring better than long-established brick-and-mortar stores.

At the individual shop level, there could be a wide range of reasons for sales performance, but generally speaking, fewer customers are buying from homebrew supply shops, existing customers are purchasing less, or some combination of both is responsible for the declines in revenue.

I think of the local homebrew supply shop as the focal point of the local homebrewing community. Those shops play a critical role in keeping our hobby alive and introducing new people in our communities to homebrewing. If you have a shop in your area, consider the impact on the homebrewers there if your local shop were to close. We've seen a number of shops close over the past couple of years, so the threat is real. With that, I ask you all to please support your local homebrew supply shop!

what you are looking for, whether that's the ultimate brewery and homebrew shop map or National Homebrew Competition medal-winning homebrew recipes. The improved Brew Guru also encourages users to suggest businesses to add to the AHA Member Deals program, which helps AHA staff know what businesses you would like to see offer discounts to members. If our database is missing a shop or brewery, you can let us know via Brew Guru—so users can now help us keep our database up-to-date.

If you have already downloaded Brew Guru, be sure to update to the latest version (available for Apple iOS 9 and up; Android 5.0 and up), and if you haven't yet downloaded the app, do it now! If you tried out a previous version of the app but haven't used it in a while, check out the update. I think you'll like it!

The app is free to members and non-members alike. Non-members get a free, no obligation, 15-day trial AHA membership with the app download. After the trial, the app still functions, just without access to AHA Member Deals and the members-only content.



Brew Guru AHA App

Brew Guru 2.0, the latest update to the AHA's Brew Guru app, appeared in the Apple App Store and Google Play in September. This new version of the app is much improved, taking into account user feedback on the original.

The new Brew Guru improves upon the user experience. The digital AHA membership card is placed on the landing page, with the nearest AHA Member Deal location shown just below, making it easier than ever to take advantage of AHA Member Deals. Improvements to in-app navigation make it a snap to find exactly

Learn to Homebrew Day

Saturday, November 4 marks the 19th annual AHA Learn to Homebrew Day. Learn to Homebrew Day is a great opportunity for individual homebrewers, homebrew clubs, and homebrew supply shops to introduce new people to homebrewing and help ensure our homebrewing community remains vibrant well into the future. It's easy to participate: just check out the Events section of HomebrewersAssociation.org for details. NOTE: you can register a Learn to



Ryan Krill speaks at the 2017 Homebrew Con in Minneapolis. Speaker proposals for 2018 in Portland are due by December 15.

Homebrew Day site as either a public or private event.

There are many ways to get started with homebrewing. I personally recommend starting out with an extract batch brewed on a stovetop. This method requires the least amount of knowledge and minimal equipment, so it's less intimidating than

all-grain brewing. From there, your students can choose whatever path they wish to take in their homebrewing journey.

2018 Homebrew Con Speaker Proposals

When Homebrew Con returns to Portland, Ore. in 2018, it won't just have been 20 years since the last Portland

Homebrew Con, but we will also be celebrating the event's 40th anniversary. The AHA is now accepting proposals for seminars and poster presentations for Homebrew Con 2018. We expect to have 50 or more educational sessions for the anticipated 2,600+ attendees next year in Portland. Sessions include approximately 45 minutes of presentation and 15 minutes of Q&A. If you have a particular brewing expertise that you'd like to share with your fellow homebrewers, let us know. Presenters get complimentary Full Conference passes. Proposals are due by December 15. Go to HomebrewCon.org for more information and to submit your proposal.

Look for more details on HomebrewCon.org in early 2018, with registration opening in late February/early March. Don't miss your chance to experience the most fun event in homebrewing taking place in Beervana!

AHA Governing Committee Call For Nominations

In advance of the 2018 election, the AHA Governing Committee is taking

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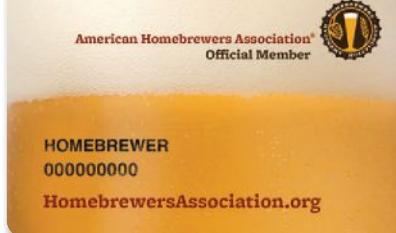
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nominations for candidates. Voting takes place in February/March next year. There are five open seats on the 15-member Governing Committee to be filled in the 2018 election.

Members of the AHA Governing Committee advise AHA staff and shape the path for the organization's future. Members of the Governing Committee participate in monthly conference calls and an annual in-person meeting at Homebrew Con. Committee members also serve on various subcommittees that address particular areas of interest such as clubs, diversity, competition, and more. AHA members interested in running for the Governing Committee can submit a nomination. For more information, see the Governing Committee pages under the Membership section of HomebrewersAssociation.org.

Give the Gift of Membership

This is our Nov/Dec issue, which means the holidays are fast approaching. Better get to brewing those holiday beers! Soon, you'll be asking yourself, "How will I find the perfect gift for my friends and family?"

Not to worry, we've got you covered for everyone on your list: an AHA membership gift card. Gift cards are easy to ship (they conveniently fit into an envelope) and are sure to please. With more than 1,800 businesses now offering AHA Member Deals, an AHA membership is a great gift even if the recipient

isn't an active homebrewer—there's still a lot to get out of an AHA membership. Plus, during the holiday season, you get your choice of one of three additional free gifts (that can be passed on or kept for yourself—they'll never know): a copy of the newly released *Brewing Local* or *For the Love of Hops*, both by Stan Hieronymus, or a stainless steel AHA bottle/can koozie (I've got one and believe me, you want one!). Your gift will support the AHA and help us to continue to protect and promote homebrewing.

See HomebrewersAssociation.org for more details.

While you are visiting the AHA store, check out all of the other great merchandise we have there and pick up something for yourself: you deserve it! Your purchase goes to the great cause of supporting the AHA.

Until next time, happy brewing!

Gary Glass is director of the American Homebrewers Association.

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By Our Readers

Starter Culture

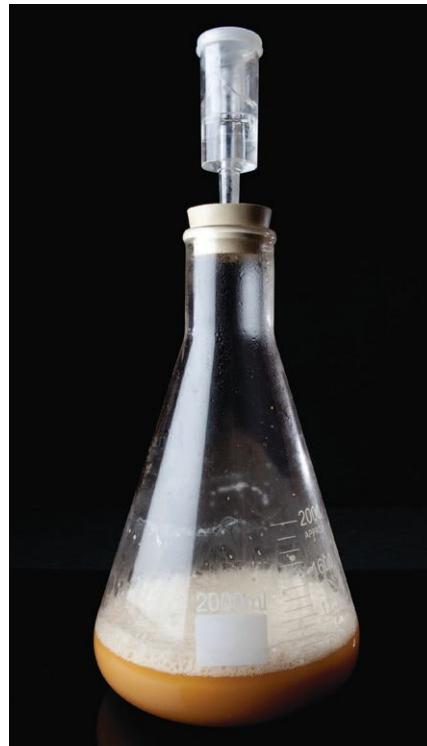
Dear *Zymurgy*,

I started doing yeast starters about a year ago. When I was doing some research into how to make one, I came upon a slew of information that recommended either preparing one 24 hours before brewing and pitching the full starter or starting 48 hours before brewing, cold crashing overnight, decanting, and pitching just the yeast cake. After reading Jeff Tyler's article in the Jul/Aug 2017 issue, I was curious what his opinion was. Which method gives better results (he states 18 to 24 hours), is there a consensus in the brewing community, and is there any evidence to suggest one method is superior (in general, or dependent on the yeast and style of beer)?

So far, I've gone with the 48-hour, cold-crash, decant method, and I have had excellent results, but I'm willing to try anything that may make my yeast a little happier.

Thanks,
Mike Banos
Longmont, Colo.

Jeff Tyler responds: The way you are making your starters is certainly fine and should yield great results. When you're growing up a yeast starter, basically all of the growth occurs in the first 24 hours. After 24 hours, growth flat-lines as the yeast has consumed all of the sugar available. You will notice that it stops producing visible CO₂ bubbles, and unless you are using a stir plate, it will start to flocculate out of solution and go dormant. By pitching after 24 hours, you are pitching as close to the maximum number of cells as possible in the shortest amount of time. You also have a very healthy and actively growing culture. This means that when you pitch the starter into the beer, your yeast can hit the ground running.



When you do a starter for 48 hours, then chill and decant, your yeast has gone dormant and needs to warm back up and get re-acclimated before it can start multiplying and fermenting. By waiting the full 48 hours, you have ensured that you maxed out your culture as much as possible, but you're also adding another day to your prep time when you really don't need to.

Sometimes chilling and decanting is suggested to (1) reduce the physical volume added to the fermenter and (2) ensure that only the necessary yeast cells are added, without all of the other "spent beer." On the homebrew scale, this really isn't an issue you need to worry about. I would recommend switching to the 24-hour starter method and saving yourself some time and headache. You'll have just as many yeast cells, and they'll be ready to start fermentation off strong!



The Dean's List

Dear *Zymurgy*,

Just wanted to send a note thanking you for the continued quality content in every issue; I look forward to each one. I thought I'd try and give back by sending in some photos of my homebrewery, which I call "The Dean's List," and my basement English pub. I have been homebrewing now for just about three years. In that short time, I've been lucky enough to win a first-place gold medal for a double IPA in our local D.C.-based BJCP competition called the Cherry Blossom Homebrew Competition. I've had so much fun these past three years learning to homebrew and assembling an electric homebrew system; I can't believe I didn't start sooner. Thanks again for the amazing content and forum for this wonderful craft.

Sincerely,
Mike Dean, Alexandria, Va.



Deer Zymurgy

Dear *Zymurgy*,

As a member of the Southernmost Homebrew Club (based in Key West, Fla.), I face many unique challenges when brewing. For example, today, July 1, the groundwater temperature was 91° F (33° C), which makes cooling wort a more involved process than it is elsewhere. However, a problem I don't have is figuring out what to do with spent grain.

Above is a picture of an endangered species, the Key Deer, eating grain minutes after I dumped it from the mash tun. The deer are common here in Big Pine Key where my wife, Safia, and I live and brew, but they don't inhabit many other islands. They're related to white-tailed deer, but they are considerably smaller. Most are tame, and they all swim in salt water. The batch of grains they're eating in this picture is for a pumpkin wheat I brewed for the Key West Brewfest, which took place Saturday, September 2, on a pretty white sand beach just 90 miles from Cuba.

Sláinte,
Matt Donegan
Big Pine Key, Fla.

Canis lupus familiaris

var. cerevisiae

Dear *Zymurgy*,

My fiancée Kari and I recently adopted our new puppy, Poa. She was very sick when we got her from the shelter, and she spent her first two weeks in puppy ICU. Thankfully, she recovered and is now healthy and happy! She makes a great

READER-SUBMITTED HOMEBREW LABELS

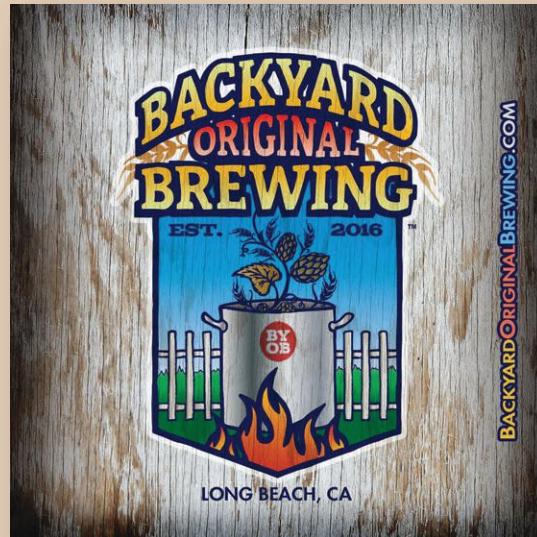
I recently joined the AHA and have been enjoying learning new things from *Zymurgy*. My wife and I also enjoy the featured labels in each issue. Attached is my homebrew label.

My wife and I have been homebrewing for more than 15 years now. When our kids were young, we could only brew one or two extract batches a year. Now we are empty nesters and fill our time by kicking out seven to ten all-grain batches a year.



We love beer and baseball. Years ago, I went to fist bump my wife after watching a great play. She went to high-five me. The result was an awkward ball-and-socket celebration. Maybe we were too many beers into the evening, but we thought this was hilarious. It still makes us laugh today, and it is now the name that goes on all of our homebrew.

Cheers,
Leon Elam
Lakeside, Calif.



I started brewing last year after months of contemplation. I brew in my back room and backyard. One day I had taken a picture of my pot on the burner with my yard in the background, and it gave me inspiration for a logo and name. After doing a rough (and I mean rough) drawing, I spoke with Dan Madsen, an old high school buddy of mine who is an incredible graphic artist. This is the result of that vision: BackYard Original Brewing (BYOB).

I primarily brew from extract, but I recently picked up an all-grain setup and am looking to take the plunge. I have been an AHA member for about a year, and I belong to both the Long Beach Homebrewers Club and the Mission Brewiejo Homebrewers Club.

Mark Paczkowski
Long Beach, Calif.



brewing companion and looks forward to our brew days together.

Cheers,
Kevin Parvaresh
San Clemente, Calif.



Dear **Zymurgy**,

This is the smile I get when asking Baxter, our four-year-old yellow lab, if he wants to brew. I didn't think dogs could smile, but I am pretty sure he is here!

Bill Westfall
Antioch, Ill.

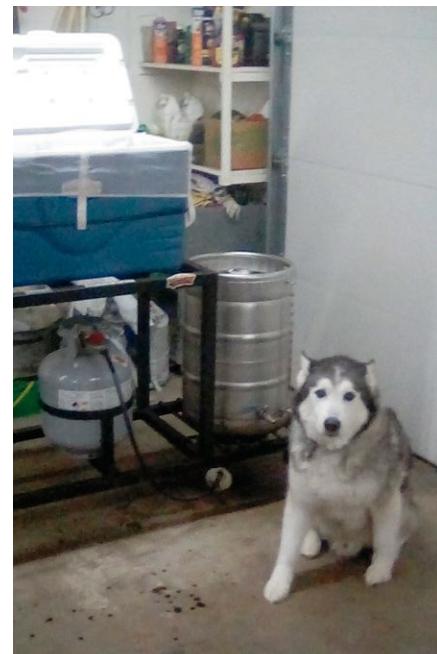
Dear **Zymurgy**,

My brewing assistant Ben is always keeping tabs on those spent grains that will become biscuits. He's a rescue Malamute in his senior years now, but he is always ready to help. Adopt a brew partner and make your brew day even better.

Cheers,
James Werner
New Berlin, Wis.



Dear **Zymurgy**,
Winston is an 11-month-old cockapoo. He loves hanging out while I brew on my deck, especially when we give him treats, which we make specially for him from the leftover grains.
Chris Roslan
Kinnelon, N.J.



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

Hey homebrewers! Submit your homebrew label for Dear Zymurgy section, at homebrewersassociation.org/magazine/submit-bottle-label.

The advertisement features a large circular logo for "TILT" with a star and a sunburst pattern. To the right of the logo, the text reads "WIRELESS HYDROMETER AND THERMOMETER". Below that, it says "USE CHECKOUT CODE: ZYMURGY". At the bottom, the website "WWW.TILTHYDROMETER.COM" is listed.

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By Professor Surfeit



Relax Don't Worry Have a ...



Dear Professor,

I'm experiencing an odd phenomenon in a kegged IPA. The batch came out as expected, but the carbonation continued to increase over time. I knew I would have to take action, so I de-carbonated it over a period of 24 to 36 hours by disconnecting the CO₂ and releasing the pressure from the keg, thus bringing some of the CO₂ out of solution.

This solved my carbonation issue, but a few days later I started getting a lot of sludge in the glass. The sludge is still coming in every pour and settles into the bottom of the glass. Any thoughts?

Jeff Moore

Thompsons Station, Tenn.

Dear Jeff,

Maybe when you released the CO₂ pressure, the inside of the keg simply foamed up and disturbed a lot of yeast into suspension. You obviously had some continuing fermentation with the increased carbonation, so that produced more yeast, which settled. Then, when you blew off the excess pressure, it got unsettled. If you can chill the keg to at least 40° F (4° C) and let it settle for a week, you will still get initial yeast sediment coming out with your first few pints or more, but eventually all will be clear.

Meanwhile tell your friends to relax, don't worry, and have a New England IPA.

Cheers for beers,
The Professor, Hb.D.

Abnormal? Absolution?

Dear Professor Surfeit,
We met at the 1989 American Homebrewers Association Conference at the Oldenberg



Brewery in its heyday. Remember? You were on stage with your wife Brewlia Childs and your kids (who strangely resembled you).

You're probably wondering why I'm writing. Well, I'm still brewing, but my tastes seem to be changing. I used to brew all kinds of crazy things, and I still do occasionally. But I enjoy drinking one or two of my homebrews without getting a serious buzz, and all those 7% IPAs seem to be pushing me toward other beers, even though I like hoppy ales.

When I brew hoppy beers, I aim for about 5 or 5.5% alcohol by volume, but I still call them IPAs and pale ales—I'm not within the prescribed guidelines. And when I go to a pub and all they have are strong hoppy beers, I sometimes order a seltzer water to go with it. When no one is looking, I blend it into my beer to make it more sessionable. Will the brewer have me arrested?

Tell me, oh learned Professor, am I becoming soft? And, if so, is it still possible to have a future of continued enjoyment of great homebrewed and craft brewed beer?

Finally, I want to put all this in perspective. I recently enjoyed a smoked imperial stout from an Icelandic craft brewer. It was really good. And I knew going into it that the malt was smoked with smoldering sheep dung. Yum?

Am I normal?

To beer and back,
Marty Carballo
Metairie, La.

Whoa-ho Marty,
Thanks for your confessions. I'm not a priest, just a professor so I can't cleanse you of your alleged doubts about beer sinning. But, being learned in most matters beer and brewing, I can say that you are an heirloom breed



of homebrewer. The joy of what you do is infectious. Keep your genes alive and spread them as circumstances warrant. We need more like you out there.

Your taste evolution is natural. We all evolve due to circumstances, age, and the people we hang out with. Our brewing evolves, too. The neat thing about having good homebrewing skills is that you can always figure out how to brew whatever kind of beer you are in the mood for. If you want to brew a 5% imperial stout, do it. After all, somewhere in the world people are drinking 3% stout, and 5% is almost double that. Imperial? Imbeerial? Create your own guidelines if that is what you enjoy the most.

As long as you smile when you are with a beer, no one is going to arrest or ostracize you. If they do, then they are the ones who are really out of bounds.

Absolved,
The Professor, Hb.D.



GLUTEN FREE

Will it change my beer?

Hello Professor,

I've recently chosen to be on a gluten-free diet. I'm not celiac, but I've discovered that going without gluten has improved my joints. They don't hurt anymore, and I can be much more active. My knees feel great and without arthritic-like pain. But, I love beer and my husband loves to brew it.

I recently heard about an enzyme that can be added to beer that will signifi-

cantly reduce the gluten in beer. Is this true? Can I ask my husband to use this stuff without compromising the great beer characters he has perfected?

Free, free, free at last,
Sara Heath
Chicago, Ill.

Dear Sara,

All that stuff you say about gluten-free and pain-free joints is legit. I know other people who have experienced the same thing. Must be something about gluten and joint health. But meanwhile, here's the scoop about those enzymes.

Yep, there are enzymes that have been developed for brewers. The enzymes are primarily marketed to reduce chill haze—you know, those proteins that precipitate in some beers when they get cold. Those precipitated proteins are gluten.

Brewers have figured out that adding measured amounts of these chill haze enzymes into beer can significantly reduce gluten proteins, especially in all barley malt beers—so significantly that they are barely detectable in most instances. Not entirely gluten-free by government definitions, but it's good enough that many non-celiac individuals can enjoy almost any style of beer that has been gluten reduced.

You are a very caring wife, concerned about the quality of your husband's beer. You should be a brewer yourself. So then, about the quality: adding a small amount of this enzyme doesn't seem to affect head retention, aroma, flavor, or mouthfeel. From my own experience, if there is an effect, it is hard to perceive.

The enzyme is sold under the trade names of Clarity Ferm and Brewers Clarex™, and it's available from White Labs. And for more on gluten-free brewing, check out pages 28–34 of this issue!

Quite contrary and loving it,
The Professor, Hb.D.

Have a question for The Professor?
Send it to professor@brewersassociation.org.

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By Amahl Turczyn

Imperial Pilsner

Some might argue that one could make a double or imperial version of just about any beer style, but the fact is, many styles cease to exist if they are doubled. An imperial ordinary bitter, for example, would become an ESB. An imperial Scottish light would become an 80/- or 90/-. In other cases, qualities intrinsic to the style would get lost at higher strengths. Imagine a double Gose or a double lambic, for example. Double the strength would mute or even erase the often delicate balance of dryness and tartness that's so enjoyable in the best examples.

This is why I initially dismissed the idea of a double Pilsner. Pilsner is by its nature a light, drinkable beer that showcases top-quality malt and noble hops. Double strength would bludgeon the drinker with excessive sweetness and a level of alcohol that's out of context with the original Czech classic. That thinking changed after sampling Boulevard Brewing Company's Noble Prize Imperial Pilsner.

At 7.5% ABV and 32 IBUs, this beer somehow retains the delicacy of the style as it showcases a bready, pastry crust malt intensity, grass and orange blossom honey notes from Saaz and Mandarina Bavaria hops, and a clean lager fermentation profile. Boulevard's brewers ferment this gem of a beer at 49° F (9° C), and a lengthy fermentation it must be—the lack of ester production makes this one squeaky-clean lager. The malt bill is 100% Pilsner malt—it's practically a SMASH beer—resulting in a brilliant pale gold color with white foam so thick and rich it resembles whipped cream. This is a beer you can sink your teeth into, but it's still very much a Pilsner. I had it in my sights to brew up a clone version of this wonderful stuff.



But then I was struck by another inspiration: Cody Gabbard's article on brewing with rice in the May/June 2017 issue of *Zymurgy*. Rice Pilsner was another idea I had previously dismissed. Corn adds sweetness and flavor to beers when used as an adjunct. Rice adds . . . well, not much of anything except a boost of alcohol, lightness, and dryness. While

adding lightness may work for Colin Chapman, I harbored a stubborn prejudice against using any such industrial "less filling" beer adjuncts in my own brewing. As well-made as Japanese rice Pilsners like Asahi Super Dry are, there isn't much to them—it's almost as if the manufacturer is apologizing for having to serve you beer, so they make it as watery and un-beer-like as possible. As if all that malt and hops would drive away the masses.

But that myopic viewpoint has changed in the past ten years—rice isn't just for mega-brewers anymore. Great Divide Brewing in Denver makes a very refreshing and flavorful rice ale called Samurai that uses just under 20 percent rice. It's 5.5% ABV, is very light and crisp, and is one of the brewery's best sellers. Hitachino Nest, a Japanese craft brewery, makes an excellent Red Rice ale, which is spicy, tart, and fruity. Trade Route Brewing Co. in Seattle brews a rice lager called Dragon King, and Gilroy, California's Great Beer Co. makes a rice ale called Red Sun. These beers are excellent paired with lighter fare like sushi—in fact, many were developed for that very purpose—but they also have the full flavor people have come to expect from craft breweries.

So why not a stronger beer with rice? Double IPAs and barleywines have an inescapably heavy sweetness that's a function of the amount of malt used. One can counter it with hop bitterness or lighten it with adjunct. Belgian tripel relies on sugar for this purpose, but rice provides a similarly clean lightness without causing the grating off-flavors that large doses of sugar can. Rice doesn't necessarily preclude the use of fine quality Pilsner malt or a strong hop presence,

Imperial Rice Pilsner

Batch Size:	5.5 US gallons (20.8 L)
Original Gravity:	1.073 (17.8° P)
Final Gravity:	1.013 (3° P)
Color:	3.9 SRM
Bitterness:	36 IBU
Alcohol:	7.5% by volume

MALTS

9 lb.	(4.08 kg) Barke Pilsner malt
5 lb.	(2.27 kg) rice (cereal mash)
1 lb.	(454 g) Barke Pilsner malt (cereal mash)
5 oz.	(142 g) acidulated malt (27%)

HOPS

1 oz.	(28 g) Spalter, 4.5% a.a., FWH @ 90 min
1 oz.	(28 g) Spalter, 4.5% a.a. @ 10 min
2 oz.	(57 g) Spalter, 4.5% a.a. @ 5 min
3 oz.	(85 g) Spalter, whirlpool 20 min

YEAST

White Labs WLP802 Czech Budejovice Lager Yeast (slurry from previous batch)

ADDITIONAL ITEMS

1 Whirlfloc tablet or 1 tsp. (5 g) Irish moss @ 15 min

DIRECTIONS

If you are conducting a cereal mash, begin that first. Add the rice and 1 lb. (454 g) milled Pilsner malt to a heavy-bottomed stockpot on the stove. Slowly raise the cereal mash temperature to at least 154–155° F (68° C). After a 15-minute rest at this temperature, add heat to slowly ramp up to a boil, and continue boiling for 30 minutes, stirring occasionally. Meanwhile, mash in with the remaining 9 lb. (4.08 kg) of Pilsner malt, starting with a protein rest at 122° F (50° C), monitoring pH if necessary.

After 20 minutes, add the hot cereal mash to the main mash and blend well to stabilize at 149° F (65° C), then hold for 50 minutes. (If you are using flaked rice, skip the cereal mash directions and simply mash everything together, beginning with the protein rest, then raising the temperature to 149° F for the main rest.) Mash out at 168° F (76° C) and hold 10 minutes, then commence sparge. Run off and add first wort hops. Boil and add Whirlfloc and hops at stated intervals.

Chill wort to 48° F (9° C) as quickly as possible, run off into fermenter, oxygenate, and cold-pitch yeast slurry from your previous Pilsner batch. Ferment at 48° F (9° C) until signs of fermentation are evident (usually within 36 hours). Ferment at 50° F (10° C) for the next two weeks. Allow temperature to free-rise to 55° F (13° F), and ferment until activity slows. Conduct a long diacetyl rest at 60° F (16° C) until terminal gravity is reached (7 to 14 days) before crashing the beer to lagering temperature. Cold condition for at least 1 month at 35° F (2° C) before packaging, although 3 months is better.

EXTRACT VERSION

Substitute Pilsner malt with 8 lb. (3.63 kg) Pilsner liquid malt extract. Substitute rice with 3.5 lb. (1.59 kg) rice extract syrup. Omit acid malt. Dissolve extracts and top up to desired boil volume with reverse osmosis water. Add hops and boil 60 minutes. Proceed as above. Note that extract version will be darker (6–7 SRM).

but it's all too easy for big adjunct lager brewers to use rice as a replacement for those things.

Why not try to achieve the best of both worlds? For strong beers, especially those that can be plagued by too much body, rice makes good sense. After all, sake is quite strong, but at the same time very light and delicate, and it's all rice. A plan was beginning to form. If Boulevard could make a clean, light, 7.5% ABV double Pils with 100 percent malt, what would an imperial Classic American Pilsner taste like with say, 30 percent rice? Or maybe even 50 percent? You'd need a Pilsner malt with a lot of flavor as a base, and a forward, yet refined hop presence without too much bitterness.

On the malt side, inspiration came courtesy of beer writer Horst Dornbusch: Weyermann Barke Pilsner malt. This old heirloom barley has “deep genetic roots in Haná,” writes Dornbusch in “German Lagers,” published in the March/April 2017 issue of craft trade publication *The New Brewer*. “It was released in 1996, but abandoned a decade later for agronomic reasons. Since then, however, it has been revived and trademarked jointly by its Bavarian breeder, Josef Breun GmbH, and the Weyermann Malting Company. Barke malt contributes substantial body, a rich and deep aroma, and a creamy head with good foam stability to the finished beer.” It also provides an excellent yield compared to other Pilsner malts and, by itself, contributes a bright, very pale yellow color. In short, it would be a perfect SMASH Pils base malt. For an imperial adjunct lager, it has plenty of character and flavor to withstand a little rice dilution. To be sure mash pH is in the correct range, Weyermann acidulated malt should be added to both mashes at approximately 2.5 to 5 percent of the total grain bill.

I've seen a few reliable sources that say mash pH for a Pilsner should be between 4.5 and 4.8. However, in my experience, going this low with highly modified malt produces a thin, harsh Pilsner, unless you use something like dextrin malt to compensate. I would instead shoot for 5.4 to 5.6, which, with

SMASH Bohemian Pils

Batch Size: 5.5 US gallons (20.8 L)

Original Gravity: 1.057 (14° P)

Final Gravity: 1.013 (3° P)

Color: 3–4 SRM

Bitterness: 32 IBU

Alcohol: 5.8% by volume

MALTS

1 1/2 lb. (4.99 kg) Barke Pilsner malt
4 oz. (113 g) acidulated malt (2.2%)

HOPS

1 oz. (14 g) Hallertau Mittelfrüh, 4% a.a. FWH
@ 90 min
3 oz. (85 g) Hallertau Mittelfrüh, 4% a.a. @ 5 min
3 oz. (85 g) Hallertau Mittelfrüh, 4% a.a.
whirlpool 20 min

YEAST

White Labs WLP802 Czech Budějovice Lager Yeast (2L starter)

ADDITIONAL ITEMS

1 Whirlfloc tablet or 1 tsp. (5 g) Irish moss @ 15 min

DIRECTIONS

Mash in at 122° F (50° C) and hold for 20 minutes, monitoring pH if necessary. Use a decoction to raise mash temperature to 150–152° F (66–67° C) and hold for at least one hour. Mash out at 168° F (76° C) and sparge at 170° F (77° C). Sparge enough volume for a 90-minute boil, add first-wort hops, and boil.

After the boil, stir wort vigorously to create a whirlpool and precipitate out the trub, adding the whirlpool hops and continuing to stir to keep the hops in suspension. Chill wort to 48° F (9° C) as quickly as possible, run off into a fermenter, oxygenate, and cold-pitch yeast starter.

Ferment at 48° F (9° C) until signs of fermentation are evident (usually within 36 hours). Ferment at 50° F (10° C) for the next two weeks, and then allow temperature to free-rise to 55° F (13° F) and ferment until activity slows. Conduct a diacetyl rest at 60° F (16° C) until terminal gravity is reached (3 to 7 days) before crashing the beer to lagering temperature. Rack beer and harvest yeast from primary to use for Imperial Pilsner. Cold condition for at least 1 month at 35° F (2° C) before packaging.

EXTRACT VERSION

Substitute Pilsner and acid malts with 8.75 lb. (3.97 kg) Pilsner liquid malt extract. Note that extract version will be darker (4–5 SRM).



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the acidulated malt addition, should be easily achievable and will produce full malt flavors.

On the hop side, obviously a noble variety would be best. My favorites are Spalt and Hallertau Mittelfrüh. To me, these exemplify hop nobility, and used generously in a long, 20-minute whirlpool, provide blissfully floral aromatics worthy of accompanying the heirloom malt. Saaz, of course, is a more than worthy substitute and more in keeping with the

Bohemian Pilsner style, or, as it is now called in the BJCP style guidelines, Czech Premium Pale Lager.

Pilsner lager yeast is certainly appropriate; I prefer my old lager standby, Czech Budejovice. Borrowing the methodology from Boulevard, cold fermentation is critical to avoid ramping up ester production in the early stages. That means a large pitch, so I suggest making a standard-strength, Bohemian-style, 100-percent Barke SMASH Pilsner first, then using the entire volume of

slurry for the imperial Pils. If you have the nerve and the equipment, and that yeast cake is fresh off the last fermentation, you might try cold pitching.

Many yeast labs recommend pitching lagers at 70° F (21° C) and then cooling to fermentation temperatures as soon as there is evidence of activity. But if your yeast is active, viable, and in sufficient quantity, you can lower the temperature of the wort to or just below fermentation temperature—in this case 49° F or 9° C—and then pitch. For an imperial Pilsner, even if you have a large quantity, this can mean a lag period. Waiting 24 to 48 hours to see any activity can be nerve-racking, but satisfy yourself with the assurance that at this temperature, few potentially spoiling microbes will be able to compete. Once fermentation does commence, it will be squeaky clean, and the finished beer will be better off for all your patience.

One downside to cold pitching is that longer lager times are often necessary. Sulfur tends to linger in the beer. But, having brewed two identical lagers, one cold- and one warm-pitched, I much preferred the cold-pitched one. The warm-pitched version was ready sooner—only a couple of weeks of lagering was necessary, in fact. But, once the sulfur in the cold-pitched beer finally worked its way out, that beer was fantastic.

For the imperial rice lager, a cereal mash is pretty much a necessity, unless you opt for flaked rice, rice solids, or rice syrup. Those are great options that really simplify the whole procedure—it's as easy as adding the flakes to the mash or adding the solids or syrup to the kettle. Raw, short grain table rice is much less expensive, but it needs to be gelatinized before it can be exposed to barley malt amylase.

Many claim they can cook a large volume of rice in a pressure cooker, but I've burned enough rice to know that I'm not one of them. So start with cold water at quart per pound of grain (2.1 L/kg), add a pound (454 g) of highly diastatic base malt like Pilsner or two-row for every 5 pounds (2.27 kg) of rice, and slowly raise the cereal mash temperature to at least

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154–155° F (68° C). After a 15-minute rest at this temperature, you can then add heat and slowly ramp up to boiling.

Continue boiling for 30 minutes, stirring occasionally. This will break down and expose more gelatinized starches for enzymatic conversion later. You can now mash in with your 100-percent Pilsner malt main mash, starting with a protein rest at 122° F (50° C). After 20 minutes, add the hot cereal mash and blend well to stabilize the main mash at 149° F (65° C), and hold for 50 minutes. Then finish up with a 10-minute mash out at 168° F (76° C).

Water should be soft and clean, with no alkalinity. Add a small amount of calcium chloride, enough to provide 50 to 75 ppm calcium in the mash. For sparging, use 100 percent reverse-osmosis (RO) or distilled water. For extract brewers, go with 100 percent distilled or RO water to dilute your extract.

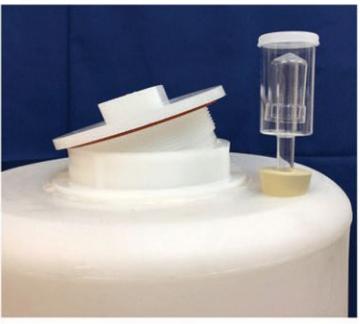
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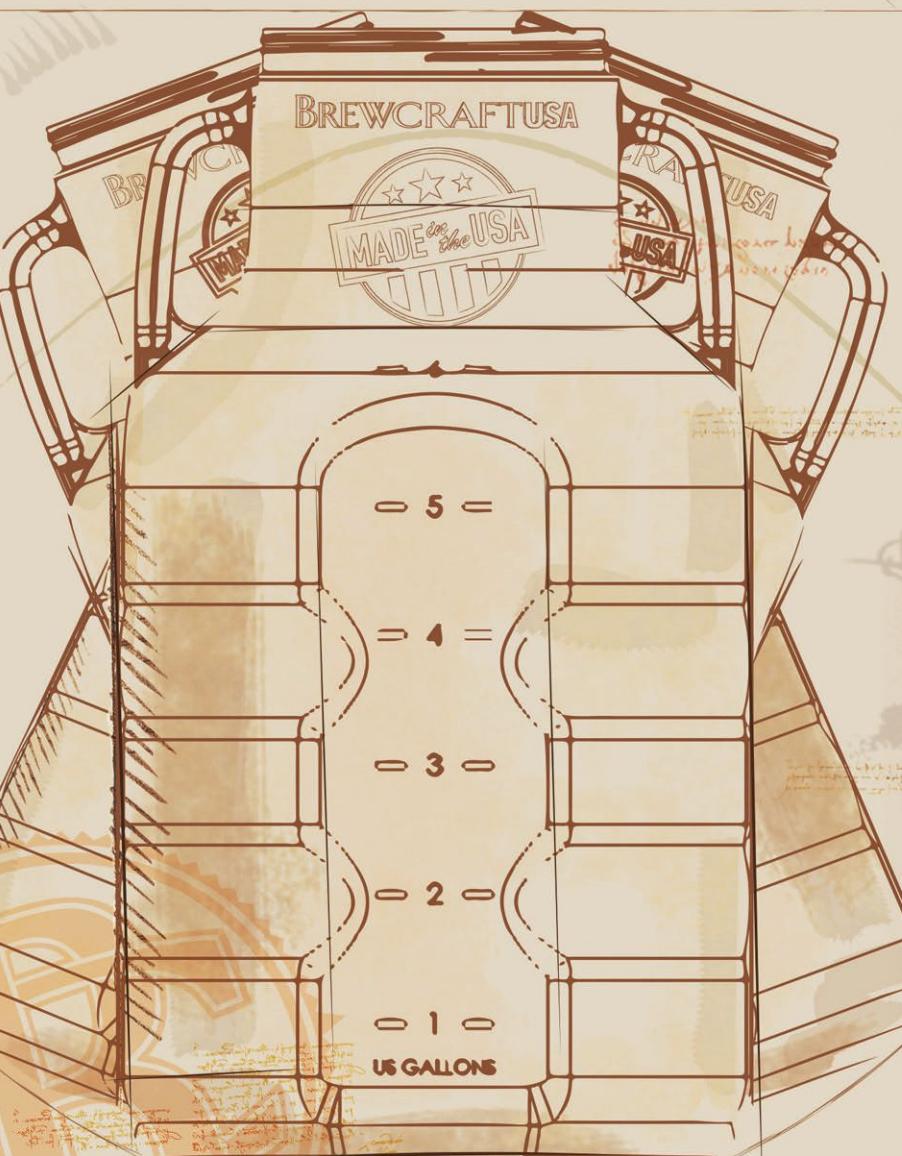
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Being Gluten-Aware

Beers made with malted barley, wheat, and rye are full of gluten, so beer lovers who are gluten intolerant or have celiac disease often avoid such brews. Fortunately, homebrew ingredients don't begin and end with these familiar grains. As homebrewers, we know there is an ever-growing list of ingredients and that experimenting with them is the name of the homebrewer's game.

The gluten-aware crowd has two options—gluten-reduced and gluten-free beers. *Gluten-free* beer can only strictly be called gluten-free when it is completely free of gluten. These beers often substitute barley and wheat malt with non-glutenous ingredients such as buckwheat, sorghum, millet, quinoa, and rice.

Gluten-reduced brews still utilize barley, rye, and wheat in the brewing process, but the gluten proteins are later broken down by using an enzyme called Brewers Clarex, available to homebrewers as Clarity Ferm. This enzyme does not completely remove gluten, but it does

break it down into small pieces that are claimed to be too small to trigger a reaction in the body.

The Extract Method

Brewing gluten-free beer using extracts is the simplest option. You can swap out barley-based malt extract with a gluten-free extract such as sorghum syrup or brown rice syrup. Advantages to this method are the same as with barley, wheat, or rye extract: you need less equipment, it's quick, and it's easy. Downsides, though, are a comparative lack of styles and flavors and a smaller range of colors to work with.

To overcome this obstacle, Jason "Igliashon" Yerger, the co-owner and head brewer at Ghostfish Brewing Company, suggests "using Belgian candi syrups (D-45, D-90, D-180, D-240), as well as doing some kettle caramelization of any of the grain syrups you are using."

As mentioned, two of the most highly available extracts are sorghum and brown rice syrups.

Brian Kolodzinski, one of the owners of glutenfreehomebrewing.org, shares, "As compared to conventional brewing, gluten-free brewing currently does not offer any liquid or dry malt extract. Extract and partial-mash brewers rely almost exclusively on sorghum syrup as the base malt extract, although it is an extract from a non-malted source. The same is true for brown rice syrup. This creates a unique challenge to the gluten-free brewer. In conventional brewing, you can achieve the wide range of beer styles through the partial-mash brewing process. The gluten-free brewer must compensate for the shortcomings of the sorghum syrup."

Sorghum syrup is made from pure white sorghum grain. It provides the necessary amino acids and proteins for head retention, yeast nutrition, body, flavor and color.

Brown rice syrup has a high concentration of glucose but contains no fructose. It also provides necessary proteins and amino acids for yeast nutrition, head retention, flavor, body, and color. Clarified brown rice syrup produces a very clear finished beer.



For this reason, commercial brewers often use this syrup in pale lagers for light color and flavor.

Extracts, Extras, and Partial Mash

Kolodzinski told me that partial mash is the recommended minimum brewing method for gluten-free beer. He said that the malts in a partial-mash brew compensate for the sorghum syrup by adding maltiness and contributing to mouthfeel, body, and head. Buckwheat is popularly used for partial-mash gluten-free beers.

I asked Yerger about partial mash, and adding in extras. He said, "Like partial-mash brewing with barley, you get a wider range of flavor options without the headache of a full mash. However, there aren't many varieties of crystal malts to use, so there aren't as many options for 'flavor grains' to add. Generally speaking, adjunct extracts like maltodextrin, honey, lactose, candi syrup, and unrefined sugars are great to add to an all-extract brew. Maltodextrin really helps with body and head retention, and I would never brew without it in an all-extract beer."

Gluten-Free All Grain Method

"All-grain brewing circumvents all of the before mentioned issues," Brian continued, "as it does not use sorghum and relies exclusively on the malts, which provides maltiness, mouthfeel, body, and head retention while providing the

specific flavor characteristics of the beer style that is being brewed."

Yerger uses a single mash infusion at 150 to 155° F (66 to 68° C) for 60 minutes. He says he gets anywhere from 70 to 90 percent efficiency, depending on the size of the grain bill. Yerger does use enzymes in his mash and adds that "if we were to do without [the enzymes], we might very well need to do a longer step mash."

"Many mashing methods have been used, and a single infusion mash has yielded consistent results while simplifying the brewing process. We do not discourage other methods, but we would urge a new brewer to start with this method," adds Kolodzinski.

Supplemental Amylase Enzymes

According to Yerger, when brewing with millet and buckwheat, "Enzymes aren't entirely necessary, although they do help shorten mash times and improve attenuation. When using malted rice, enzymes are essential to get full conversion."

He suggests looking for "a combination of alpha amylase and beta or glucoamylase. Cellulase, glucanase, and pullulanase can be helpful, too, and are found in the enzyme formulas we use. If you keep the rice malt to a minor role, say 10 to 15 percent, you can get by with just the normal alpha amylase most homebrew stores sell."

Generally speaking, adjunct extracts like maltodextrin, honey, lactose, candi syrup, and unrefined sugars are great to add to an all-extract brew.

—Jason "Igliashon" Yerger

Gluten-Free Malts and Grains

Millet: Yerger mostly uses millet and rice. He feels millet gives a very barley-like flavor at low roast levels. When millet is highly roasted, it tends to be astringent and has a burnt flavor.

Rice: Unlike millet, rice has more of a barley-like flavor when roasted at a high level. Dark roasted rice also has a fair amount of sweetness and is a little smoky.

Buckwheat: "Buckwheat is a nice adjunct to use, and though completely unrelated to wheat, does pose some similar brew-house issues as wheat malt does (or so I've heard)—namely, sticky mashes. It does have a nice earthy flavor and it does wonders for head retention," says Yerger.

NO FAIL STOUT

Batch Size: 6 US gallons (22.7 L)
Original Gravity: 1.070 (17° P)
Final Gravity: 1.014 (3.6° P)
Color: 30 SRM
Bitterness: 30 IBU
Alcohol: 7.4% by volume

MALTS AND SUGARS

7 lb. (3.28 kg) pale millet malt
5 lb. (2.27 kg) pale buckwheat malt
2 lb. (907 g) biscuit rice malt
8 oz. (227 g) chocolate roast millet
8 oz. (227 g) dark rice malt
4 oz. (113 g) Gashog rice malt
1 lb. (454 g) Belgian candi syrup D-180
(add to secondary)

HOPS

0.5 oz. (14 g) CTZ, 14% a.a. @ 90 min
0.5 oz. (14 g) Willamette, 5.5% a.a. @ 10 min



YEAST

Fermentis Safale S-04 English Ale

ADDITIONAL ITEMS

1 tsp. (5 mL) amylase enzyme added to mash
0.25 tsp. (2 g) Irish moss @ 10 min
1 tsp. (5 mL) yeast nutrient @ 10 min
3.75 oz. (106 g) corn sugar if bottling

DIRECTIONS

Mash grains with supplemental amylase enzyme for 60 minutes at 155° F (68° C). Boil 60 minutes, adding hops, Irish moss, and yeast nutrient at the indicated times. Cool wort to 67° F (19° C), pitch yeast, and ferment for 4 days. Rack to secondary and add Belgian candi syrup. Allow beer to achieve final gravity before bottling or kegging.

Other options for malts are corn, quinoa, and brown rice. A good variety of grains can be purchased at glutenfreehomebrewing.org.

Crushing the Grains

When it comes to millet, Yerger suggests using a two-roller mill set at the narrowest gap possible. He says knurled rollers are necessary. Rice malt is super hard and is not easily crushed like millet, buckwheat, or quinoa. He adds, "On a homebrew-style mill, you'll need to double-crush, even triple sometimes, at progressively narrower gap settings. I suggest ordering it pre-milled if you can."

The Malting Process

When Kolodzinski started out with Gluten Free Home Brewing in 2010, most of his Facebook posts were about malting and recipes, and they still have two malting tutorials on their website. But, now most people go with buying malt because malting is no longer a necessity. He suggests leaving the malting to professionals.

One of these professionals is Jim Eckert, the owner of Eckert Malting and Brewing, a specialty shop that malts and roasts rice and other grains. Eckert shares, "Malting rice is basi-

cally the same as barley. Steep it to get the moisture in the grain to the point where the grain can germinate. Germination takes place with the correct moisture and temperature regime for the grain being malted. Kilning dries the grain once you have reached desired germination level. Roasting is generally done on rather dry malt. The roots and shoots break off during kilning and roasting and can be separated by cleaning devices like seed cleaners."

He adds, "Enzyme activity of rice is rather limited compared to barley. To my knowledge, rice has not been bred for malting and brewing qualities. I suggest supplemental enzymes to improve consistency and reduce duration of mash."

"Home malting can be done. I tried it with barley in my early days of homebrewing. Lots of time involved and no savings," states Eckert.

Stylistic Considerations

In the ever-progressive world of homebrew it is wonderful to see anything is possible. A decade ago—even a few years ago—gluten-free beer lovers were better off checking out wine- or cidermaking. Now, there is no style that is out of reach, according to Yerger.

"It takes some creativity to find the right ways to blend the different grains and specialty malts, but we've done everything from IPAs to Vienna lagers, stouts to hefeweizens, blondes to 'non-barleywines,'" says Yerger.

One of top sellers at Ghostfish Brewery is the Grapefruit IPA, which is made entirely with syrups. *Craft Beer and Brewing*® magazine rated it 93 points in a blind tasting of IPAs while having no idea it was gluten-free.

Yerger says that the huge hop bills in IPAs can mask some flavor defects and help compensate for the missing malt character. He also notes that "Belgian styles, like abbey dubbels and tripels, as well as saisons and wits, get most of their flavor from yeast products (esters and phenols)."

The More Difficult to Imitate

The more challenging beers to get spot on are ambers and reds, as well as dark ales. Yerger shares that it can be easy to go overboard with malt character and get too sweet or caramelly and fruity.

"Dark ales are a little challenging as well because it's easy to get a harsh and acidic flavor if you don't know what you're doing and go overboard with specialty



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NO FAIL EXTRACT IPA

Batch Size: 5 US gallons (18.9 L)
Original Gravity: 1.066 (16° P)
Final Gravity: 1.020 (5.1° P)
Color: 10 SRM
Bitterness: 60 IBU
Alcohol: 6.1% by volume

MALTS AND SUGARS

3 lb. (1.36 kg) rice extract syrup
3 lb. (1.36 kg) sorghum extract syrup
1.5 lb. (670 g) maltodextrin
1 lb. (454 g) Belgian candi syrup D-45
1 lb. (454 g) honey

HOPS

0.75 oz. (21 g) Bravo, 15.5% a.a. @ 60 min
1 oz. (28 g) Cascade, 5.5% a.a. @ 10 min
1 oz. (28 g) Palisade, 7.5% a.a. @ 10 min
1 oz. (28 g) Santiam 6% a.a. @ 10 min
1 oz. (28 g) Cascade, 5.5% a.a., dry hop 5 days

1 oz. (28 g) Palisade, 7.5% a.a., dry hop 5 days
1 oz. (28 g) Santiam 6% a.a., dry hop 5 days

YEAST

Fermentis Safale S-04 English Ale

ADDITIONAL ITEMS

0.25 tsp. (2 g) Irish moss @ 10 min
1 tsp. (5 mL) yeast nutrient @ 10 min
3.75 oz. (106 g) corn sugar if bottling

DIRECTIONS

Dissolve extracts, candi syrup, and honey in enough reverse osmosis water to achieve a pre-boil volume of 6 gal. (22.7 L). Boil 60 minutes, adding hops, Irish moss, and yeast nutrient at the indicated times. Cool wort to 67° F (19° C), pitch yeast, and ferment for 4 days or until final gravity is reached. Rack to secondary, condition for 5 days, and add dry hops. Allow beer to sit on dry hops for 5 days before bottling or kegging.

grains. You must learn when to rely on malt for color, and when to use some candi syrup as well,” adds Yerger.

Yeast

Yerger always uses a yeast nutrient at the maximum recommended dosage. He only uses dry yeast because it’s the only certified gluten-free option. He uses Fermentis but other dried yeast manufacturers like Lallemand also produce gluten-free yeast.

“Mangrove Jack’s has a wide variety of certified gluten-free yeasts for the homebrewer, but they no longer make commercial sized quantities, so I have little experience with their offerings,” he adds.

Hops

When it comes to hops there really are few special considerations. Hops are gluten-free and can be used the same as they would in other homebrews.

Water

Yerger says, “We add water salts (gypsum, calcium chloride, baking soda, chalk, table salt, and epsom salt) in varying quantities depending on style. Seattle has very soft water, and adding calcium seems to help mash efficiency and fermentation times. As mentioned above, getting some extra calcium in the mash helps; I recommend BeerSmith’s water tool—it’s what we use to calculate mineral additions on all of our batches.”

Gluten-free homebrewing is within reach for any homebrewer willing to experiment, take some chances, and learn as they go. Yerger suggests, “Recognize that it will take a lot of time, it won’t be super intuitive, it won’t be easy, and you’ll miss the mark—just like trying to clone popular commercial brews without knowing the ingredients. Take copious notes, always, and try not to introduce too many variables.”

A special thanks to Jason “Igliashon” Yerger for his collaboration and in-depth input for this article.

Clint Cherepa is currently living in Nicaragua with his wife, Kate. He keeps himself busy by volunteering, running, and trying to get his hands on homebrewing supplies.

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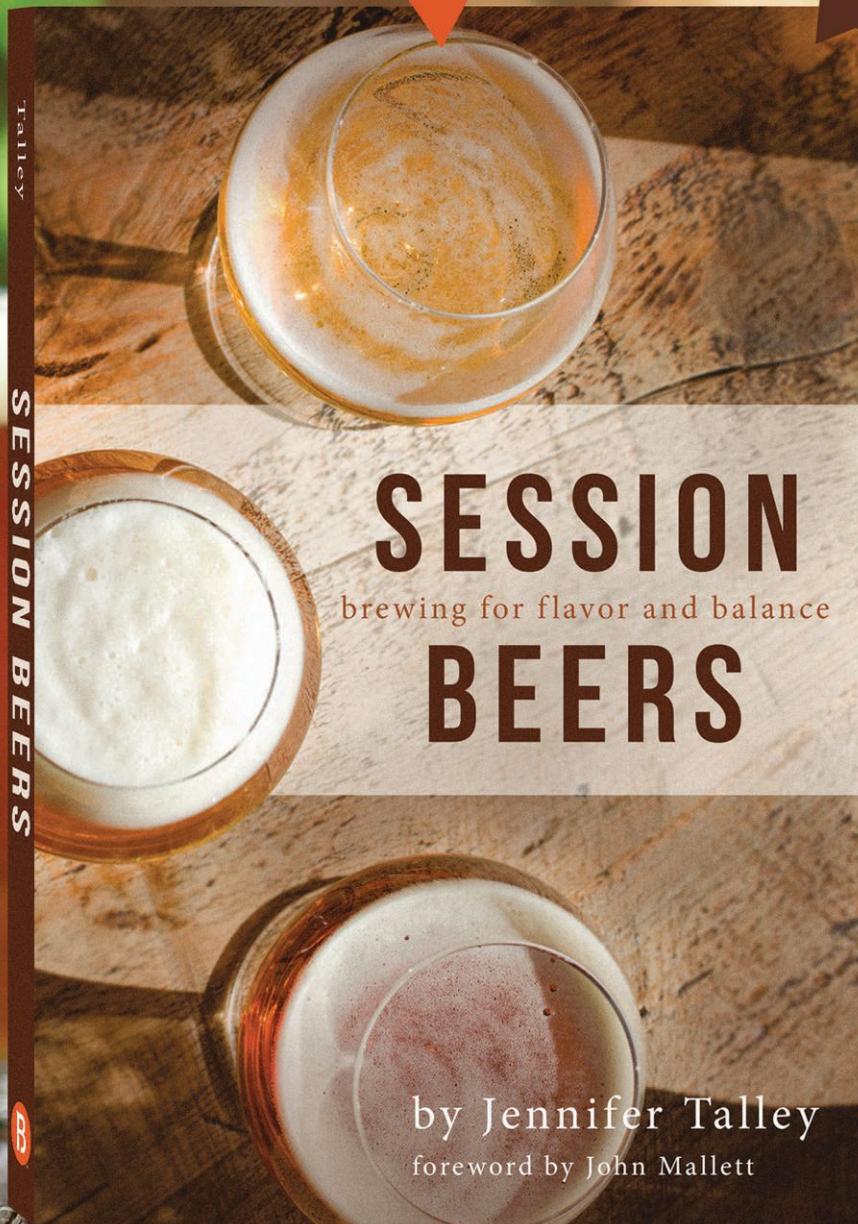
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SESSION BEERS

Editor's Note:

The following is adapted from *Session Beers* by Jennifer Talley, available now from Brewers Publications. Content has been abridged and edited to fit within the space available.





The term “session” in reference to beer has existed in conversation among brewers, writers, and most beer enthusiasts for decades. Although not specifically defined, beer lovers all seem intrinsically to know what a session beer is.

Defining a historical style of beer is customarily a straightforward process. Research the period in which it was first brewed, what breweries were producing beers in that style, and what was occurring in brewing culture at that time, and there you have it, a definition of a beer style. Session beer is not that straightforward. First, it is not just one style. Session beer encompasses many different styles that vary radically. While a German-style leichthes weizen and an English-style mild ale are both session beers, they are extremely different from each other. The term “session” is an adjective, an expression, a descriptor of certain beers rather than a style in and of itself. Defining session beer can feel like defining the undefinable.

There is much debate about what a session beer truly is. The discussion is tiresome for the most part and hinges on the question, how much alcohol can a beer have in it and still be a session beer? Lew Bryson has been writing about beer and spirits for over twenty years and has been a longtime contributor to *Whisky Advocate*. Bryson is an outspoken crusader for session beer and maintains *The Session Beer Project™* blog, a

nonprofit, unorganized, unofficial effort to popularize and support the brewing and enjoyment of session beer. Bryson defines session beer as a beer containing 4.5% alcohol by volume (ABV) or less, flavorful enough to be interesting, balanced enough for multiple pints, and conducive to conversation.¹ (For more of Lew Bryson’s take on session beer, see “It Takes a Lot of Beer” in the Nov/Dec 2016 issue of *Zymurgy*.)

Conversely, the BeerAdvocate® website came out with their explanation of a session beer in 2005:

Any beer that contains no higher than 5 percent ABV, featuring a balance between malt and hop characters (ingredients) and, typically, a clean finish – a combination of which creates a beer with high drinkability. The purpose of a session beer is to allow a beer drinker to have multiple beers, within a reasonable time period or session, without overwhelming the senses or reaching inappropriate levels of intoxication.²

The term “session” in reference to beer has existed in conversation among brewers, writers, and most beer enthusiasts for decades. Although not specifically defined, beer lovers all seem intrinsically to know what a session beer is. Martyn Cornell, renowned and award-winning beer writer and expert on all things beer, has the most popular beer blog in Britain,

Zythophile. On May 20, 2011, Cornell dedicated an entire blog discussion to how old the term session beer is. Throughout the discussion, no definitive resolution came to fruition; however, in the comments one reader presented a case for what is most likely the first use, in print, of the term “session beer.” This *Zythophile* commenter cites the 1982 (first edition) *Pocket Guide to Beer* by Michael Jackson.

Jackson uses the term “session” in describing an evening where friends may meet at a pub, taking turns buying a round of “ordinary bitter” rather than a higher-alcohol bitter.³ Cornell responded to the commenter, ascertaining this very well might be the first use, in printed English, of the term session beer. In any case, the camaraderie for enjoying a session of beers together is not new and the level of alcohol may vary by drinker or event. Cornell personally advocates the term session beer being applied to beers at the lower end of the alcohol spectrum, as illustrated earlier in his blog post. I believe that session beers

have a broad spectrum when it comes to their alcohol range, and can go as high as the just-tipping-over 5% ABV mark.

What a great time to be a craft beer drinker in America. With over 5,000 craft breweries nationwide, it’s hard to throw a rock these days and not hit a fermenter. So much beer, so little time is what I always say, and with all this competition, everyone is sprinting for the next hot, new trend that makes the front page. Some trends come and go, whereas some arrive and never leave. I am certain that craft session beer is here to stay.

I will admit, for a short time, it was difficult to find a craft beer under 6% ABV on tap, but thankfully, those days are over. It did not take long for most craft breweries



SQUATTERS FULL SUSPENSION PALE ALE

American Pale Ale

Batch Size: 5 US gal. (18.9 L)

Original Gravity: 1.042 (10.5° P)

Final Gravity: 1.011 (2.8° P)

Bitterness: 38–42 IBU

Alcohol: 4% by volume

Attenuation: 73%

Boil Time: 80 minutes

MALTS

5 lb. 9 oz. (2.5 kg) two-row pale malt

13.5 oz. (380 g) Munich 10°L

1 lb. (450 g) dextrin-type malt

11 oz. (310 g) caramel 40°L

7 oz. (200 g) caramel 80°L

HOPS

0.5 oz. (14 g) Columbus, 14% a.a. @ 70 min

0.25 oz. (7 g) Columbus, 14% a.a. @ 45 min

0.25 oz. (7 g) Columbus, 14% a.a. @ 2 min

1 oz. (28 g) Columbus, 14% a.a., dry hop

WATER

Add calcium chloride to mash for increased calcium. Target all water to an alkalinity of 80–100 ppm.

YEAST

Wyeast 1187 Ringwood Ale Yeast (diacetyl management

can be difficult, but it provides a bit more mouthfeel) or Wyeast 1318 London Ale III (it will finish a little drier)

BREWING NOTES

Targeting a liquor-to-grist ratio of 3:1 by weight (1.4 qt./lb.), mash in and hold at 155° F (68° C) for 30 minutes. If possible, mash off to 168° F (76° C) to aid in runoff and increased brewhouse yield. Ferment at 67–69° F (19–21° C).

Once fermentation is complete, reduce temperature to 58° F (14° C) and remove as much yeast as possible prior to dry hopping. Dry hop at 50–60° F (10–16° C). If possible, recirculate hops in fermenter.

Finishing: This beer is unfiltered, but make sure it's not too yeasty before you serve it. It should be ready to serve 14–18 days from brew day. Carbonate to 2.6–2.7 volumes (5.13–5.33 g/L) CO₂.



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to realize it takes a lot of craft session beer to keep our industry strong and people on their bar stool. Americans have always encouraged and applauded hard work, and what better way to celebrate the end of a tough work day than with a cold session beer. The wonderful thing is, session beers in America now come in many different flavors and styles. From artfully crafted cream ales to a tart Berliner weisse, or even a dry-roasted Irish stout, there is a craft session beer on tap for everyone.

SQUATTERS CRAFT BEERS

Founded by Peter Cole and Jeff Polychronis, Squatters Pub Brewery has been a landmark in Salt Lake City since 1989. One night in Portland while throwing darts, eating pizza, and drinking IPA at Bridgeport Brewing, Cole and Polychronis had an awakening. Uninspired by their successful real estate business, they asked, "Why can't we open a great brewpub in Salt Lake City?" So that's just what they did. In a historic building in downtown Salt Lake City, just blocks from the Mormon temple, they began with four small fermenters and a seven-barrel brewhouse. With help from brewery consultant Peter Burrell and brewmaster Dan Burick, the first brewpub in Salt Lake City was opened. I joined Burick in 1991, and over the next twenty years, our brewing team brought the diversity of craft beer to the local community.

Although there is a 4% ABV cap on the amount of alcohol allowed in draft beer in Utah, it did not stop us from creating style after style; we simply committed to learning how to brew great session beer. Since craft beer was new to Salt Lake City, we placed a heavy emphasis on staff education, discussing the brewing process, historical styles, and innovative techniques any chance we got. The brewery was always open to tours and we visited many tables to introduce our newest creation or explain the dry-hop procedure recently implemented. Cole and Polychronis knew business and they knew it well. They had unbelievable trust in their team and gave us incredible leeway in the brewery. When it came to quality, there was no question: if it made the beer better, then we did it. This is not to say we were frivolous in our spending. There was a companywide philosophy that the customer came first and

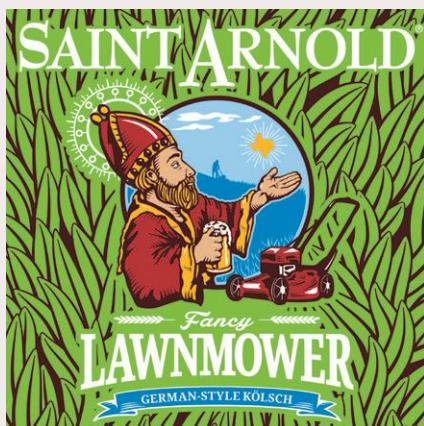
SAINT ARNOLD FANCY LAWNMOWER BEER

Kölsch-Style Ale

Batch Size:	5 US gal. (18.9 L)
Original Gravity:	1.045 (11.3° P)
Final gravity:	1.008 (2° P)
Bitterness:	17–19 IBU
Alcohol:	4.9% by volume
Attenuation:	83%
Boil Time:	75 minutes

MALTS

- 8 lb.** (3.6 kg) two-row pale malt
1 lb. (450 g) wheat malt



HOPS

- 1 oz.** (28 g) Hallertauer Hersbrucker, 4% a.a. @ 60 min
0.25 oz. (7 g) Hallertauer Hersbrucker, 4% a.a. @ 30 min
0.25 oz. (7 g) Hallertauer Hersbrucker, 4% a.a. @ 0 min
0.25 oz. (7 g) Hallertauer Hersbrucker, 4% a.a., whirlpool

WATER

Treat mash and sparge water with Siebel salts and calcium chloride. Siebel salts are a mixture of calcium sulfate, magnesium sulfate, magnesium carbonate, and ammonium carbonate (a.k.a. baker's salt). These salts are not commonly used, but Brock Wagner does use them to brew Saint Arnold's Fancy Lawnmower Beer.

YEAST

Kölsch yeast, e.g. Wyeast 2565 Kölsch or White Labs WLP029 German Ale/Kölsch Yeast

BREWING NOTES

Mash at 151° F (66° C), ferment at 60° F (16° C), and crash finished beer to 31° F (−0.5° C). Carbonate to 2.7–2.8 volumes (5.4–5.6 g/L) of CO₂.

our goal was to provide the highest quality experience in every department. That meant buying malt, hops, and equipment we felt would further improve our beer.

One of the greatest lessons I learned while honing my brewing skills at Squatters is that the brewery is no place for big egos. Ego does not make better beer or a better company. Honesty, hard work, and perseverance do. And that's just what Cole and Polychronis did, they rolled up their sleeves and kept growing their successful brewing company. A production brewery was quickly built in 1994 to supply the entire state with beer. The second Squatters retail location opened at the Salt Lake City International Airport in

February 2000, followed by the opening of Squatters Roadhouse Grill in Park City six years later. With the reputation of Squatters beer on the rise and the need for a larger production brewery, Cole and Polychronis formed an alliance with Greg Schirf, owner of Wasatch Brewing, establishing the Utah Brewers Cooperative in 2000 and moving to a larger location in Salt Lake City.

With Burick at the helm, the production numbers kept increasing, quality was better than ever, and a great brewing team was born. Although the founding members are gone, the brand they built, along with Burick's team, is still going strong and now enjoys nationwide distribution.

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Jon Lee joined the team as a keg washer in 1999, advancing through the ranks to become brewmaster in 2000. Lee has witnessed immense changes during his time at Squatters, and by 2016 was managing production of over 60,000 barrels a year. His commitment to brewing both fabulous session beers and stronger offerings is undying.

In a fun tip of the hat to the challenging 4% ABV level, enjoy the accompanying recipe for a rich, Northwest-style pale ale. Note that no hopping rates were provided for the boil, so those quantities are author suggestions. Squatters Full Suspension Pale Ale is a rare feat of balance. Unfiltered, dry-hopped, and 40 IBUs, it is a deliciously seasonable and sessionable beer. Full Suspension pours a hazy, light copper and presents a bouquet of floral Columbus hops. The bitterness is perfectly poised alongside the malt backbone, creating a beer full of harmonious flavor that leaves the heaviness behind.

SAINT ARNOLD BREWING COMPANY

Saint Arnold Brewing Company is the oldest craft brewery in Texas. Brock Wagner and Kevin Bartel decided Houston—in 1994, the largest city in the country without a brewery—needed a craft brewery, and since they lived there, it was a perfect fit. The first keg of Saint Arnold beer was shipped June 9, 1994 and since then a fantastic brewing company has emerged that epitomizes the craft spirit. Bartel has moved on, but Wagner is still leading the team. Wagner was surrounded by great beer his whole life, growing up in two very beer-focused cities, Cincinnati, Ohio and Brussels, Belgium. His great, great, great grandfather from Alsace arrived in America in the mid-nineteenth century and opened up Wagner's Beer Hall (now called The Saloon) in San Francisco. Wagner began homebrewing while attending Rice University, and after graduating with a degree in economics, he joined the ranks of investment banking. Despite his career success, Wagner's true calling was steeped in brewing, leading him to build the Saint Arnold Brewing Company and live his dream.

Wagner notes that Saint Arnold's philosophy is rooted in brewing balanced beers. There can be a strong emphasis on a com-

ponent or flavor, but at the end of the day there should be balance. "But," says Wagner, "within the balance, there should always be complexity as well. We are Texas's oldest craft brewery, a title we earned by outlasting the other early breweries here."

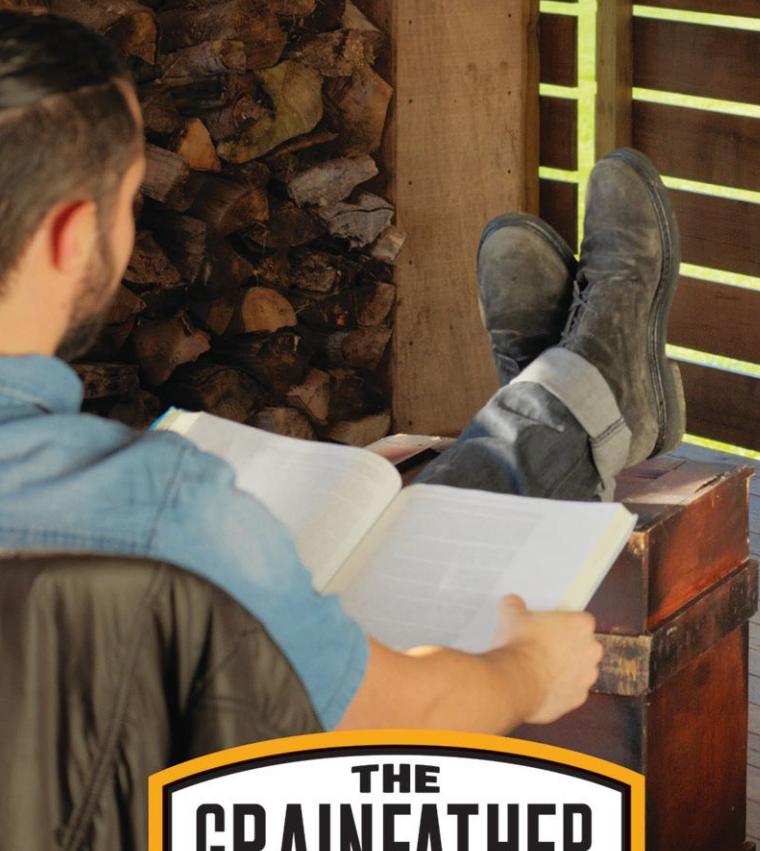
Saint Arnold takes climate into consideration when designing beers. Fancy Lawnmower Beer is produced year-round and has garnered four awards at the Great American Beer Festival to date: bronze in 2000 and 2006 and gold in 2007 and 2010 in the German-style Kölsch category. A testament to the German Kölsch style, which originated in Cologne, Fancy Lawnmower Beer is crisp and refreshing, yet has a delicate malt body with a slight sweetness. Well balanced by a complex, citrus hop character, Saint Arnold uses a special Kölsch yeast (an ale yeast that ferments at lager temperatures) to provide a slightly fruity flavor and clean finish. Truly refreshing and thirst quenching after some strenuous activity, such as mowing your lawn in Texas on a hot day!

RESOURCES

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Jennifer Talley is the author of *Session Beers: Brewing for Flavor and Balance*. Jennifer's brewing career began in Utah as brewmaster at Squatters Pub Brewery in Salt Lake City. She honed her skills through a variety of positions at Salt Lake Brewing Company, Redhook Brewery, Russian River Brewing Company and Auburn Alehouse in Auburn, Calif. With more than 20 awards from the Great American Beer Festival® and World Beer Cup™, Talley is also a Cicerone Examiner, craft beer industry speaker, technical committee member for the Master Brewers Association of the Americas, and a national and international beer judge. Talley was awarded the Russell Schehrer Award for Innovation in Craft Brewing in 2011. She resides with her children in Grass Valley, Calif.

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CRAFT BEER IN MEXICO

A STORY OF THE LITTLE FISH

By Efrain Villa





*“Poor Mexico,
so far from God, so
close to the United States.”*

President Porfirio Diaz' famous quote touches on Mexico's complex, and at times turbulent, relationship with its neighbor to the north, but industrious homebrewers in this vast country of 125 million inhabitants are not letting old colonial lamentations or geographic fatalism get in the way of complementing their homegrown ingenuity with borrowed American know-how.¹

The More Things Change...

Mexico's love affair with crafting and ingesting an impressive array of fermented elixirs began long before the arrival of Europeans. Throughout Mesoamerica, it was common practice to produce and drink alcoholic concoctions made from corn, maguey, and agave for ceremonial and medicinal purposes. Although many of those beverages can still be found throughout modern-day Mexico, the cultural collisions of the last five centuries have drastically altered the drinking preferences of the New World's inhabitants.

Presently, more than two-thirds of all Mexican consumers of alcohol prefer beer over any other alcoholic beverage, the highest rate on the entire American continent.² Academics attribute the changes in Mexico's alcohol consumption habits to Darwinian economic policies, but many Mexican homebrewers take a more personal approach, viewing the status quo as a continuation of the power struggle over beer production rights that has embroiled class and caste since the Spanish conquistadors first introduced malt beer to the Americas.



One does not have to look hard to find historical examples of this conflict. As recently as the 19th century, European brewmasters jostled for control over the burgeoning malt beer markets in Mexico by leveraging taxation and non-disclosure agreements. These covenants were designed to safeguard against the general population accessing beer production resources and expertise.³ Strict laws regulating distribution networks of foreign goods further ensured that exotic brewing supplies, such as hops, remained exclusively in the hands of the country's elite.

The period that followed was not any less challenging for a young country trying to build a national identity. Shortly after securing its independence by winning wars against European empires, Mexico had to contend with a direct threat to its continued existence: American manifest destiny. Once the dust settled and the Mexican-American War had wound down, Mexico had ceded approximately one-third of its landmass to the United States. This ushered in the mega frenemy era of bilateral relationships that continues to dominate headlines today.

Presently, efforts to modernize Mexico's economy through international trade and industrialization are bearing fruit. Mexico is the 15th-largest market in the world and the third largest trade partner with the United States. Its middle class is the largest and fastest growing segment of its economy, according to recent studies by Euromonitor International.⁴ Overall, the country seems to be moving forward.

MEXICAN MICRO- AND NANO-BREWERS ARE WORKING HARD TO ORGANIZE, RISE UP, AND RECLAIM THEIR RIGHT TO BREW.

However, when it comes to beer production and consumption, it seems that the more things change in Mexico, the more they stay the same.

Is Mexican Beer Really Mexican?

Mexico is the world's largest beer exporter⁵ and sixth-largest beer consumer.⁶ Its nearly \$3 billion worth of beer exports get transported to 180 countries, and approximately 80 percent of those exports end up in the United States.⁷

However, whether all that beer should even be called Mexican depends on who you ask. Much like in previous centuries, Mexico's current beer production is once again dominated by foreign powers. The global consolidation of Big Beer through mega mergers in the last five years has left the country with a duopoly dominated by Grupo Modelo (owned by Anheuser-Busch InBev) and Cuauhtémoc Moctezuma (owned by Heineken). Together, these two foreign companies control 99 percent of domestic market share⁸, leaving very little left for imports and other domestic beers. Only about 0.1

percent of the beer market in Mexico is in the hands of independent microbreweries.

In short, Big Beer in Mexico is really big, but Mexican micro- and nano-brewers in basements, garages, and makeshift breweries scattered throughout the country are working hard to organize, rise up and reclaim their right to brew and have their creations tasted by an increasingly discerning public that until recently had no idea the words "beer" and "artisanal" could be used in the same sentence.

If large-scale beer production, seen through the prism of globalization, was a result of economic colonialism, then local homebrewers have responded with a rebellion; a movement in which guerilla entrepreneurs brandish their liquid creations as weapons to ensure Mexican beer is truly Mexican.

Big Fish Eats Little Fish, So Little Fish Befriends Sharks

Craft beer's popularity in Mexico has soared in the last decade. According to the newly formed ACERME, the Brewers Association of the Mexican Republic, there were 14 breweries prior to 2010. Today there are approximately 400. In terms of production and sales, craft beer has grown at a 50 percent annual rate for the last ten years.⁹

"I think the fact that Mexico's beer manufacturing was bought out by foreigners has made many Mexicans more cognizant consumers who try to support local beer," says Paz Austin, Director of ACERME. "Mexicans love embracing our Mexican



identity; you can see that nationalism in our indulgence of traditional dishes. Whether it's tacos, mole, or enchiladas, we take pride in creating things that are distinctly ours, and now we are doing with beer what we've always done with food."

ACERMEX is helping "Mexicanize" beer by lobbying to undo policies that favor large-scale breweries. Some of these policies include cost-of-goods-sold taxation, which disproportionately affects artisanal beers, and vertical integration concessions that allow mega breweries to control the supply side of production as well as distribution channels.

On a more conciliatory note, ACERMEX hopes to create a sense of community that goes beyond enterprise so as to help microbreweries grow on their own terms. As in other industrialized countries, the spike in demand for craft beer has prompted Big Beer to buy up as many reputable craft breweries as possible in order to expand their own brand portfolios. So even when consumers do buy craft beer in Mexico, the transaction does not necessarily translate to a score for the little guy.

This is why ACERMEX does not mince words when defining what craft beer is and is not. "First of all, a craft brewery cannot belong to one of the large brewing corporations that dominate the Mexican market," reads the ACERMEX website. "If they have already sold out to Big Beer, they are not craft beer . . . regardless of the image their brand or fame would like to project."

Big corporations swallowing up small businesses is, of course, nothing new, but the struggle of Mexico's microbreweries is much more than a story of big fish eats little fish. If we extend the oceanic metaphor further, craft beer production in Mexico is more akin to another deep-sea relationship: the bizarre, but common, pairing of the pilot fish and shark.

Pilot fish, despite their small size, have no problem swimming in shark-infested waters; in fact, they thrive in them. If you have ever seen a documentary on sharks, you probably saw a pilot fish happily swimming between a shark's razor-sharp teeth. That's because these little guys eat parasites on the shark's mouth and body. The shark gets to live a parasite-free existence, and the pilot fish gets access to food and protection from predators. The relationship is mutually beneficial; in this way pilot fish and homebrewers have one thing in common: the ability to recognize advantages in unlikely partnerships.

Go Where the Fish Are

Jordan Gardenhire is a Colorado native who a decade ago founded Baja Brewing Company in Cabo San Lucas, a resort town in the state of Baja California that boasts 13 percent of the entire country's breweries, second only to the greater Mexico City area.¹⁰ Recently he has struck up friendships with homebrewers.

"The only reason I know about people brewing at home around here is because

they come and buy hops and malt from me," says Gardenhire. "I give it to them at cost because it's such small amounts and I want to help the culture. Plus, they're our super fans, so they make great spokespeople for our industry."

One such super fan is Oscar Moreno, who homebrews in Todos Santos, located about an hour away from Cabo San Lucas. On the phone, I ask him how he became a homebrewer.

"I tried five years ago to brew for the first time and it was a complete disaster," he laughs. "Then a year ago a friend started talking about brewing beer and we tried again, and again it was a disaster. So we read books, the *Brewing Elements*, and invested in nicer equipment. After our first good batch of beer we were hooked." As a professional nursery grower of palm trees, Moreno has no problem peppering his speech with words like "micro-propagation," "hybridization," and "day-neutral hops." He tells me that Mexico's lack of daylight and seasonal variation (compared to northern and southern hop-growing latitudes) are what make it so hard to grow hops in the largely temperate country, which is why they have to be imported, but he emphasizes that recent hops varieties might be changing foreign dependence dynamics.

"I think new hybridized hops will be able to grow anywhere, and that's scary to Big Beer," Moreno says. "Those hops will be great for us little brewers because we'll finally have

access to the one ingredient we always have to import or scrounge for here."

Typical of how in Mexico the transition from brewing hobbyist to entrepreneur is almost non-existent, Moreno is already thinking of selling his beers at the restaurant he and his wife run. It's not uncommon for Mexican homebrewers to set their sights on distribution, marketing, and revenue reinvestment plans soon after producing that first good batch of beer. In essence, a Mexican homebrewer is a microbrewer-in-waiting.

Sergio Silva founded Zona Norte Cervecería Artesanal in Tijuana with his two partners, brothers Jesus and Julio Galeana. Silva and the Galeana brothers met in college, bonded over friendly matches of *futbol*, and remain friends now that all three are in their thirties and married.

"We started brewing 20-liter batches when Jesus switched from winemaking to beer brewing," Silva says. "Right away our friends and family on Facebook started asking us where they could buy our beers. So we switched gears from hobby to busi-

ness and named our little brewery after Tijuana's famous red-light district."

Zona Norte's "brewery" is located in Jesus' garage. Silva tells me all three gather once every few weeks to brew beer. "It's become a ritual for us that begins at 5 a.m." Silva says. "We also barbecue *carnitas* and [make] ceviche, and when the brewing is all over, we all do the real work: cleanup. Our wives join us, too. We wouldn't be able to do this if they weren't so supportive."

They package their beer in recycled bottles gathered from local bars. After slapping on labels designed by Silva's wife, the beer is distributed to the homes of patrons who have placed orders via Facebook Messenger. "Each one of us takes a section of the city for deliveries," says Silva.

"We try to embrace and honor Tijuana's folklore in everything we do," Silva continues. "One of our beers, Adelas, carries the locals' colloquial name for Tijuana's most famous gentlemen's club and another beer is named Zacas, which is the nickname locals use for Zacazonapan, a famous dive bar in town."

Silva pauses before beginning to describe the third beer he and his partners have an offer. "I saved the best for last," Silva says, excitedly. "The third is a Mexican stout named Mahuana. La Mahuana (also spelled Maguana) is a famous vagrant in Tijuana who was a beautiful woman a long time ago; her real name is Maria Luisa Castro Valenzuela. According to 'bad tongues' she was betrayed by an American G.I. when they were supposed to run away together. Now she spends her days dancing, singing, and babbling incoherently in front of the cathedral, waiting for handouts. She's sort of become a Tijuana celebrity."

True to form of any good legend, many versions of La Mahuana's tale exist. Her story has gained so much traction recently that Mexico's own native son, Oscar-winning director Alejandro González Iñárritu, is rumored to be working on a film about the border icon.

So what does La Mahuana have to do with craft beer? Silva tells me he and his partners wanted to make sure their beer was unashamedly *tijuanense*, but La Mahuana's border story can also be a proxy

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for Mexico's fascination with the underdog. Both La Mahuana and craft beer have been embraced as symbols of the little guy's survival and nonconformity; of Mexico's devotion to living life with abandon. A devotion that is best captured by the popular Mexican saying: "But what I've already danced, they can never take from me."

Uninhibitedness is all good, but Silva admits he prefers a shrewd business acumen in his own brewing gambit and reminds me that the tendency toward trade instead of hobby is not necessarily by choice. "Mexican culture is about survival and improving the hand you were dealt," says Silva. "I think in the United States maybe you're not as hungry as us because my American friends brew beer and never think to sell it. Here in Mexico, this is an expensive and labor-intensive hobby for us that competes with feeding and spending time with family. We see the potential of this industry, and it's exciting for us to think that this could be a way for us to be free from having to answer to a boss, and that's every Mexican's dream: to stop being slaves. So we throw ourselves in head first."

When I point out to Silva that he and his partners are well-educated engineers and that maybe his budding trade might not be easily accessible to all Mexicans, he quickly discards any notion that privilege plays a role in Mexico's craft beer scene. "I think if you want to do something, you work hard and do it without finding excuses," says Silva. "Yes, I have a fast internet connection to access instructional videos and I live on the border, so I am more likely to speak English than elsewhere in Mexico. But there are also apps that can help you translate. My grandfather never studied, he had a fruit-and-beer stand, and even without accounting degrees, he managed his little business and advanced in life. Brewing is something all Mexicans can do."

Although homebrewing might seem like an equal-opportunity activity to Silva, the demographics of homebrewers closely mirror the select Mexican craft beer market: affluent, urban, young and educated.¹¹

In Mexico, these demographics are related. As Silva pointed out, the internet is the

main resource for brewing instruction and materials, and a whopping 73.6 percent of Mexican internet users are under the age of 35, roughly the same percentage that live in cities.¹² Internet usage also correlates with education level, which is true both in the United States and Mexico, but when it comes to e-commerce, the difference between the two countries is striking.¹³ Whereas 79 percent of Americans have completed an online transaction, only 12.8 percent of Mexicans have engaged in e-commerce. Considering brick-and-mortar brewery supply stores are rare in Mexico, the potential for e-commerce to facilitate homebrewing in Mexico is substantial.

Recently, online stores selling brewing equipment and supplies have begun popping up in Mexico. Silva said that when the peso was stronger, crossing into San Diego to stock up on brewing materials was a far superior option than buying from a Mexican online middleman. "Now that the peso is so devalued, buying from Mexican online shops, even when you add the expense of shipping, can be better than paying in dollars," says Silva.

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supply chain of craft brewing, ACERMEX courts manufacturers of brewing equipment to locate to Mexico. The association makes it clear that they see craft brewing as a job creation strategy and that decreasing foreign dependence is feasible and healthy for the economy.

The Biologist and Masher

I approach an open doorway on a softly lit street in the colonial city of Puebla, in central Mexico.

"Are you looking for the biologist?" asks a man at the doorway.

"I'm looking for Jacinto Hernández Navarro," I say.

"You mean the biologist who makes beer, right? It looks like that's him coming this way," the man gestures with his chin toward an ambling silhouette underneath fluffy trees shaped like Q-Tips lining the cobblestone sidewalk.

Hernández greets me with a handshake and a warm smile. "Bienvenido a Puebla," he says. "Let's step inside."

We walk into Utopía, a bistro specializing in Belgian and domestic craft beer and sit at one of the small tables near the back. Hernández is the host of the weekly podcast El Macerador (Spanish for "The Masher"), which has the tagline "Beer literacy for everyone." He has agreed to help me find homebrewers in Puebla to interview, although this ends up being a harder task than expected. The people we end up interviewing do brew in homes, in the technical sense, but they do so as a means to a commercial end.

"I don't think there is much difference between nanobrewers and people like me," says Hernández. "We have the same struggles, the only difference is that I am not actively pursuing the sale of my stuff." He pauses for a moment, while a waiter puts beers at our table, and then he continues, "I suppose I should say I'm not yet pursuing the sale of my stuff, but hopefully someday."

As the waiter gets ready to leave, Hernández politely lets him know that our beers were served in the wrong kind of glass. The embarrassed waiter quickly rectifies his mistake.

"I didn't really know about the different glasses thing," I admit.

"The thing is that in Mexico, drinking beer out of a glass instead of a bottle, any glass, is considered snobby," he says. "So the way I see it, if we're going to be snobs, we should go all in and at least get our beers served in the proper type of glass, right?"

I tell Hernández that it is a bit ironic that craft beer can be both an element of snobbery and counterculture.

"It all depends on context," he says. "Belgian beer is not counterculture in Belgium, it's just beer. Here, a Belgian beer is a big 'up yours' to Mexican Big Beer, which has basically dictated what we drink."

The Mother of Invention

As craft beer has gotten more popular, brewers' public profiles have risen. It is not uncommon for Mexican newspapers to feature pictures of smiling craft brewers posing in front of shiny tanks, talking about how they modified dairy tools into beer making equipment or



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describing a contraption made out of repurposed machinery.

"I used to use plastic hoses and aluminum pots when I first started," the nano-brewer, Erick Portillo, tells me, as we chat atop a Puebla terrace overlooking a colorful, bustling plaza. "It was hard to find ingredients, so I would use bleach and peroxide to sanitize, which is basically a sin."

Portillo says now that he sells his Cervecería Portillo beers to local restaurants and bars, he has a much better system. "It's a glorified home kit, better than most homebrewers have, but I still can't control temperatures," he acknowledges. "Consistency is the hardest part of this whole thing. Some of my friends think this is about getting drunk, but it's only because they don't realize that there has to be a whole lot of sobriety and mindfulness to create a delicious drink that can take the sobriety and mindfulness away."

Whatever he is doing is working—his beers have won multiple awards at

Mexican beer expos, which is where many Mexicans first get exposed to craft beer. Silva says expos have been the main way he has networked to meet other brewers and reach a bigger customer base, and he would participate in more were it not for price.

Where costs are a barrier to brewing, there are government and nonprofit organizations that support local brewers' aspirations. Enrique Robles, the nanobrewer behind Cervecería La Mediagua, was the recipient of a matching grant program through INADEM, the National Institute of Entrepreneurship. "In the program, we learned about breakeven points, business plans, and marketing budgets," says Robles. "Attached to the completion of the workshops is an 80/20 matching grant to launch your entrepreneurial project. In my case, I came up with a makeshift 'go fund me' campaign on Facebook to come up with my 20 percent portion for my little brewery."

"In some ways, I'm lucky to live in Puebla," Robles continues. "Tourism is a big part of our city, so tourists expose us

to new things, like their appreciation for craft beer. I know it sounds silly, but for most of my life I didn't even know beer was something that could be 'made.'"

I tell Robles that it does not sound silly at all and that I was the same way with mac-and-cheese. "Up until my twenties, I had no idea mac-and-cheese could be made with real cheese," I say. I then ask Robles if he thinks anyone can brew.

"Sure, but it's not like in the United States or even Baja California, where there's a huge craft beer market just across the border," Robles says. "I get the sense that in those places, if you make craft beer, someone is bound to buy it. It's not like that here in Puebla. So yes, everyone can brew beer but not everyone can do it well."

Robles sniffs at his beer glass and stares at it, inspecting it against the light. "That's the thing about brewing and any other craft: the art of it is in making it look easy when it's not. It's even harder for the little guys, but as we say in Mexico: *todo se puede* (all is possible)."

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3. Maria del Carmen Reyna wrote this in her book published by INAH, *Apuntes para la Historia de la Cerveza en Mexico* (Notes on the History of Beer in Mexico)
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5. http://www.trademap.org/Country_SelProduct.aspx?nvpm=1|||2203|||4|1|1|2|1|1|2|1|1
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9. Acermex 2016 consolidated report
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11. Consumer Profile section of Brewers Association Study

12. INEGI (Mexican National Institute of Statistics and Geography), Study, May 13, 2016, Aguascalientes, Estadísticas A Propósito del Uso Mundial de Internet”
13. Pew research study and previous study: <http://www.pewresearch.org/fact-tank/2016/09/07/some-americans-dont-use-the-internet-who-are-they/>

Efraín Villa is a photographer, actor, writer, and global wanderer whose endless quest for randomness has taken him to more than 50 coun-

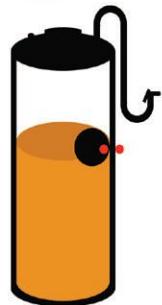
tries in five continents. His writing has appeared on NPR's Weekend Edition, the Good Men Project, TravelWorld International Magazine, and Zymurgy, as well as Spanish language publications. While not running his consulting firm in Albuquerque, he is busy devouring exotic foods in faraway countries and avoiding adulthood while wearing the least amount of clothes possible. His travel stories dealing with the messiness, humor, and beauty of cultural collisions can be found at aimlessvagabond.com.

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Höfter's Hallertau Hop Harvest

By Kent Shultz





M

oritz plunged his arm into a wall of just-dried Magnum cones and pulled out a handful. Uh-oh. Yesterday's batch was still feeling a bit wet, but it was already due for pressing and packing.

"It's probably just a damp spot," he conjectured hopefully.

If the cones had too much moisture when they arrived at the regional storage facility in Mainburg later that day, the farm would have to pay 25 cents euro per kilogram (13 cents US per pound) for the facility to finish drying them.

The previous evening, after Moritz and I had finished our half-liters of his favorite local beer—a hazy, golden kellerbier hopped only with Mandarina Bavaria—we had walked across the farm's main courtyard to the cavernous building containing the hop dryer. Somehow, after ascending three flights of stairs in the mid-September heat with the dryer running full bore on the next batch, I had yet

to break a sweat. But Moritz, who had just finished his shift and changed into fresh clothes not stained green, was already brushing sweat from his blond curls.

"Aren't you used to the heat given how much time you spend in here?" I wondered aloud.

"That's not how it works," he pointed out. "I'm so used to the heat that my body feels it and immediately tries to cool off. During the harvest, I can feel it when I play sports, too. I start sweating more quickly."

As I caught my breath at the top of the stairs, exhaling lupulin-laced fumes,

we touch-tested the Magnums. To my untrained fingertips, the bracts (leaves) felt plenty dry that evening, almost brittle. But, Moritz explained, each cone was still moist inside. Overnight, as the cones sat in the resting chamber, the inner moisture would work its way outwards. Silviu, a jokey Romanian fellow who had just taken over drying duties for the long night ahead, was less worried.

Sure enough, the hops felt a bit damp the next morning. Moritz sent them for packing anyway, fingers crossed.

That afternoon, Gudrun arrived in Mainburg to deliver the batch sample.



inside the front door of the facility began the moisture test using a device too expensive for most farmers—even for Gudrun and her relatively large 50-hectare farm. Moments later, Gudrun's phone rang, and she greeted her oldest son: "Moritz?"

She delivered the verdict Moritz was anxious to hear: the Magnums were just right.



Georg pulled his Volkswagen into the driveway of the Höfter farm as the sun rose over Volkenschwand. Gudrun was in the courtyard doing her best to organize a tangle of especially pretty hop bines that sprawled across the cobblestone. The hops were bound for Munich, destined to adorn one of the biergartens at Oktoberfest in the coming days.

She was about to greet her longtime friend when one of her dogs beat her to it. The old Labrador rose laboriously from his front-door post to bellow at his daily walking companion. He hadn't mistaken Georg for an intruder; he always welcomed him—only him—in this way "Brownie!" admonished Georg.

As Gudrun and Georg chatted about their plans for the day, I found myself even less privy to the contents of the conversation than I normally was when witnessing banter between Germans. To

my untrained ear, Georg's speech, in his gravelly voice, sounded eastern European. I asked whether or not he was speaking high German, and he replied that no, he spoke Bavarian most of the time.

"Oh, Bavarian is quite a different-sounding dialect, isn't it?" I said.

With raised eyebrows and plenty of pride, but without judgement, he replied, "Bavarian is not a dialect—it is a language!"

Thankfully, I hadn't offended Georg too deeply, and he permitted me to accompany him later to his post-retirement job doing safety inspections at the Schneider Weisse brewery in Kelheim. After his inspection, we quenched our thirst at the on-site biergarten and lazily drove back to Volkenschwand.

At Georg's house, his wife Hildegard, who worked for the Höfters from the age of 16, was eager to show off her new garden. She served me espresso in the back garden and we took in the late afternoon views of Gundrun's hop fields. I glimpsed the top of the tiny chapel that sat at the farm's entrance, where Georg would later join Gudrun and other neighbors for a monthly mass. Hildegard pointed out a new house under construction that, when finished, would block the view partially. We lamented this blemish on the landscape, but I suspected Hildegard

would soon forgive and befriend its owners. Hopefully there would be room for them in that tiny chapel.



Jakob paced unhurriedly down the row of trellises, picking and handing Gudrun and me a cone from every bine. He had far less land than Gudrun, but even within this one small field, he seemed to grow a wider range of varieties. Gudrun grew many kinds of hops—traditional Hallertau varieties, modern low-alpha hops like Saphir, in-vogue high-alpha hops like Hallertau Blanc, and others—but in Jakob's field, each hop looked and smelled a bit different than the previous one.

As a breeder, Jakob didn't want to isolate one hop from another. Having them intermingle was the point. But I noticed no markings on any of the trellises. How did he know one from another? Gudrun grinned and replied on his behalf: "They are like his children."

Some bines were more densely coned than others were. Some cones looked overgrown like Moritz's Magnums, and others were quite small. I stopped to admire one whose bracts had bloomed widely. To my untrained eye, it looked ideal for breeding, but Gudrun told me it's not ideal for a cone to open up so much. "The lupulin gets lost," she explained.

If she hadn't learned this as a girl on her family's farm, she might have from Jakob. He was her longtime mentor, and her reverence for him was obvious. As Gudrun and Jakob crushed each cone between their fingers, they confidently enumerated its aromatic qualities: passionfruit, mint, orange. I felt she was trying to impress him more than me. When I plucked a particularly dank cone, I ventured an observation: "This one reminds me of Columbus."

Jakob looked surprised. "Columbus!" he repeated with apparent delight. I wasn't sure if my perceptive abilities impressed him or elicited pity.

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Gudrun stepped into the walk-in cooler to fetch a crate of beer to set by the breakfast room door. As she emerged from the cooler and hauled 16 thick brown bottles across the courtyard, I figured few neighboring farms had a walk-in cooler. This one had probably been installed decades back, when Gudrun's father's family owned and operated a brewery on the premises.

The family had sold the brewery's clients to another brewer in 1979, and evidently, the sale had been amicable—the brewery delivered beer to the Höfster farm every Monday. I imagined the Höfters had insisted on some sort of free-beer-for-life stipulation during the sale of the brewery 38 years ago, but I didn't confirm with Gudrun whether such an agreement had been made; I wasn't willing to risk having this vicarious fantasy spoiled.

Soon after the crate hit the meal room floor, the workers started to mosey in. Although the crate functioned as the breakfast, lunch, and dinner bell every day during the harvest, the workers didn't drink during breakfast. Most ate quickly and in silence, eyes fixed on whatever German television station was beaming from the corner of the room. Many of the workers were Romanian or Polish, and despite knowing no more than perhaps a dozen words of German, they watched intently as they ate, much to Gudrun's amusement.

I had begun to suspect the crate was only a prop to impress me, but I watched in relief as each man grabbed a bottle of helles on his way out the door. Refreshment was necessary before starting work and during the not-too-infrequent breaks. The men worked very hard, but over the years, equipment upgrades had reduced the time spent in the fields, affording the workers rest more often.

At least one worker forgot to scale down his one-beer-per-break habit. "He was a fine man, but by four in the afternoon you could not understand anything he was saying," said Gudrun, chuckling. There had been no scandal about him, though, and the farm employed him for many years.

Gudrun had a busy Sunday afternoon ahead. The quality control inspector she had expected by mid-morning was nowhere to be found. "I am quite angry," she declared with the faintest hint of anger.

It was no time for me to bother her, so I joined the tractor driver Hans as he finished a sizable plot of Smaragd, a hop variety sometimes called Emerald (in fact, *Smaragd* is German for emerald). Hans—a local policeman the rest of the year—was spending his holiday in the hop fields.

After I had tromped through the fallen bines long enough—and sustained an impressive scratch across my neck from one I had bullied down from its wire—I joined Gudrun for her errands around town. As we returned home late in the afternoon, she pointed out some hail-damaged hops along the border of the farm. Her insurance policy would easily cover the loss, but I privately wondered about the farm's profitability in the recent past and the near-term future. She was typically Bavarian in her answers—restrained, humble. But she beamed when I asked about the success of her Herkules crop: "Herkules has been a very good thing."

That evening, I borrowed Moritz's bicycle and pedaled around a remote area of the farm. I stopped when I spotted a newly growing plot of Herkules. The previous spring's work—"showing the hops the way around the wire," as Moritz had described it—was bearing fruit (or rather, flowers). His description had an agrestic charm to it, but the work was tedious, requiring at least twice as many workers as the machine-assisted harvest labor.

Moritz had been spared the tedium that spring, but he wouldn't avoid it forever. Once he finished graduate school, he intended to return to the farm for good, and to one day take responsibility for carrying on the Höfster legacy. In the meantime, he'd return to the Hallertau every autumn to add a fresh coat of green to his clothes. I wished I could join him.

Kent Shultz is a homebrewer and BJCP judge in Berkeley, Calif. For him, a helles a day keeps the doctor away. ☘



Looking for more hop in your recipe? Take a look at this hoppy pale ale recipe online at HomebrewersAssociation.org/hoeftblanc



Siebte Flasche

Recipe courtesy Zymurgy editor-in-chief Dave Carpenter

As I worked my way through Kent Shultz's vivid narrative of a September spent in the Hallertau, I was transported to the cozy biergartens and hop fields of southern Germany. I imagined the sun dropping a little lower into the sky every day as the heat of summer gave way to autumnal crispness. And when I learned that Georg conducted safety inspections at the G. Schneider & Sohn brewery in Kelheim, I found myself longing for a tall, vase-shaped glass of the Original.

This recipe is inspired by Schneider Weisse Tap 7 "Mein Original." I would never presume to call this a clone, but it is a tribute to one of my favorite examples of one of my favorite beer styles. The technical details here are largely based on Stan Hieronymus's interviews with brewmaster Hans-Peter Drexler in *Brewing with Wheat*, with a few adjustments here and there. I hope you like it.

I think the key to this beer is open fermentation. Yeasts, like humans, behave differently under pressure. An open fermenter lets the beer breathe and reduces carbon dioxide concentrations in the fermenting wort. It makes a difference in the flavor. If you maintain rigid sanitation throughout the process, an open fermenter needn't worry you. I ferment in plastic buckets, so I loosely place the sanitized lid on top to keep airborne cat hair from falling in. When the beer hits final gravity, I close and seal the lid, add an airlock, and let it sit until I have time to bottle. There's no need to secondary this beer, and it's best when it's fresh.

Batch Size:	5 US gallons (18.9 L)
Original Gravity:	1.052 (12.8° P)
Final Gravity:	1.011 (2.6° P)
Bitterness:	14 IBU
Color:	9 SRM
Alcohol:	5.4% by volume

Malts

- 6 lb.** (2.72 kg) German Pilsner malt
3 lb. 11 oz. (1.67 kg) German pale wheat malt
2 oz. (57 g) German chocolate wheat malt

Hops

- 0.25 oz.** (7 g) Hallertauer Herkules, 14% a.a.
@ 45 min
0.25 oz. (7 g) Hallertauer Tradition, 5% a.a.
@ 15 min

Yeast

Weihenstephan W68, available as Wyeast 3068 Weihenstephan Weizen and White Labs WLP300 Hefeweizen Ale Yeast

Brewing Notes

Mash in at 113° F (45° C) for a 10-minute ferulic acid rest. Using direct heat or a hot-water infusion, raise the mash temperature to 122° F (50° C) for a 10-minute protein rest, and then again to 147° F (64° C) to begin saccharification. After 5 to 10 minutes, pull a thick decoction of approximately 1/3 of the mash.

Keep the main mash at 147° F (64° C) while you separately steep the decoction through rests of 152° F (67° C) for 10 minutes, 158° F (70° C) for 20 minutes, and finally to boiling. Boil the decoction for a few minutes—longer for more color development, shorter for less. Finally, return the decoction to the main mash and, if necessary, apply direct heat to hit mash-out at 168° F (76° C).

Collect enough wort to yield 5 gallons (18.9 L) after a 90-minute boil, and boil for 90 minutes, adding hops as indicated. Pitch yeast at 62° F (17° C) and allow to free-rise to 72° F (22° C) over the course of 5 days. Leave the fermenter open until a gravity reading indicates that fermentation is at or very near completion, then seal with an airlock.

Bottle condition or force carbonate to 3.5 volumes (7 g/L) of CO₂. This is at or above the limit of what many standard single-use beer bottles can handle, so if bottle conditioning, be sure to use sturdy glass.

Extract Option

Replace the Pilsner and wheat malts with 7 lb. (3.2 kg) wheat malt extract syrup. Steep the chocolate wheat malt in 155° F (68° C) water for about half an hour, then remove the grain, dissolve extract in the steeping liquid, top up to your boil volume with tap water or reverse osmosis water, and proceed with the boil. If you conduct a concentrated boil, increase the Herkules addition proportionally or add it earlier in the boil to compensate for decreased hop utilization in high-gravity wort.



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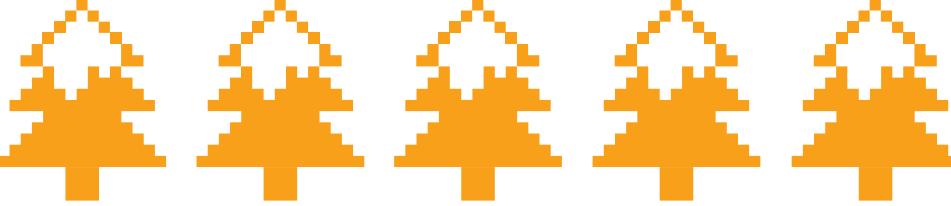


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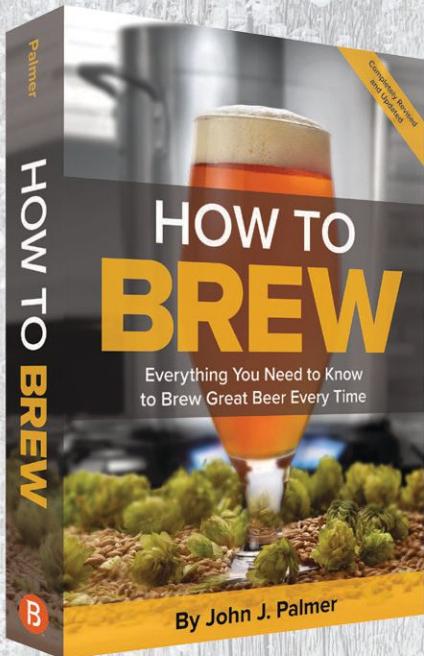
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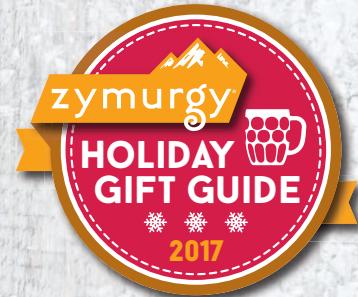
**HOW TO BREW**

BY JOHN PALMER

What can we say about *How to Brew* that hasn't already been said? For starters, this fourth edition has been fully revised and updated to ensure it remains the definitive guide to brewing quality beer at home. All of that revising and updating boosted the page count by 33% over the previous edition, to a remarkable 600 pages. And, we're talking John Palmer here, so you know the content is trustworthy and helpful. If it's not in here, you probably don't need to know it.

BrewersPublications.com

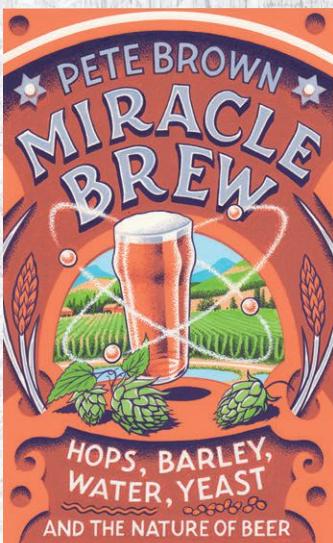
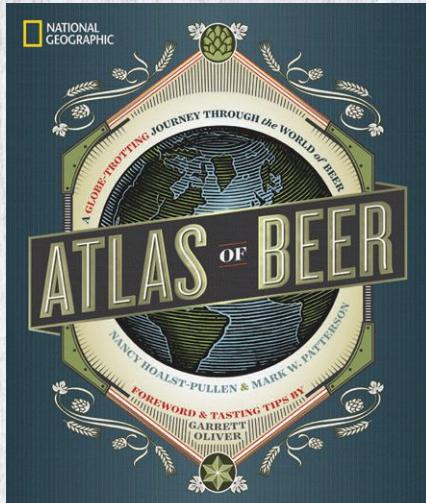
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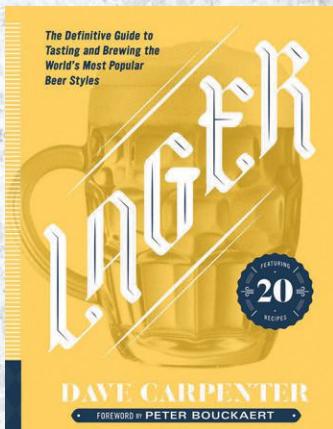
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BY PETE BROWN

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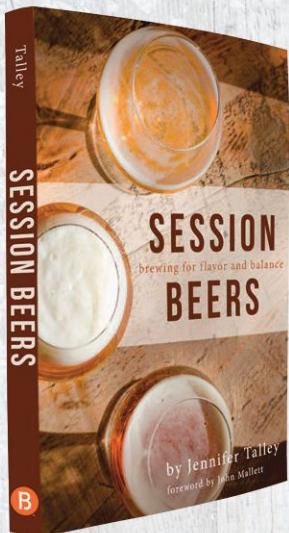
LAGER: THE DEFINITIVE GUIDE TO TASTING AND BREWING THE WORLD'S MOST POPULAR BEER STYLES

BY DAVE CARPENTER

Our very own Dave Carpenter loves lagers, from the sessionable pleasures of Munich helles and Classic American Pilsner to the full-flavored delights of India pale lager and Baltic porter. After hearing one too many people flippantly equate lager with bland, mass-produced fizz, he offered up the only act of defiance he could. He wrote a book. *Lager* reveals the fascinating history of cold fermentation and offers a complete tasting guide to the full spectrum of lager styles, from Munich helles and festbier to California common and doppelbock. Taste along and find your new favorite lager!

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SESSION BEERS: BREWING FOR FLAVOR AND BALANCE

BY JENNIFER TALLEY

Session beers are big. And nobody knows more about the ins and outs of session styles than Jennifer Talley, author of *Session Beers: Brewing for Flavor and Balance*. From brewing techniques to the history of some of your favorite beer styles, Jennifer has you covered in this new release from Brewers Publications. Of particular note is the collection of more than 20 professional recipes in commercial and homebrew sizes. New Glarus Totally Naked Lager, Russian River Aud Blonde, Firestone Walker Easy Jack, Stone Brewing Go To IPA, and Sierra Nevada Otra Vez are just a few of the excellent recipes you'll find within.

For a taste of *Session Beers*, including two recipes from the book, see "Session Beers" on page 36 of this issue of *Zymurgy*.

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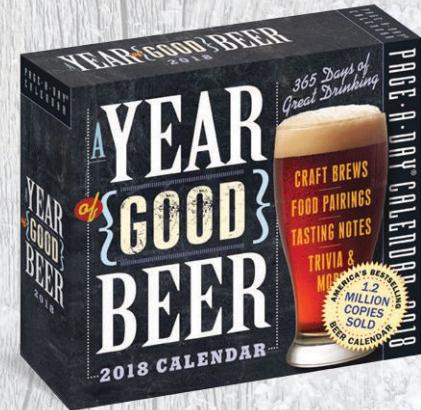
A YEAR OF GOOD BEER - 2018 CALENDAR

A beer lover's dream! Foaming over with reviews from *Zymurgy* associate editor Amahl

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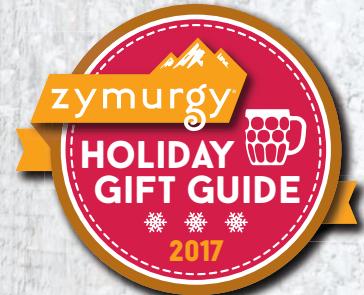


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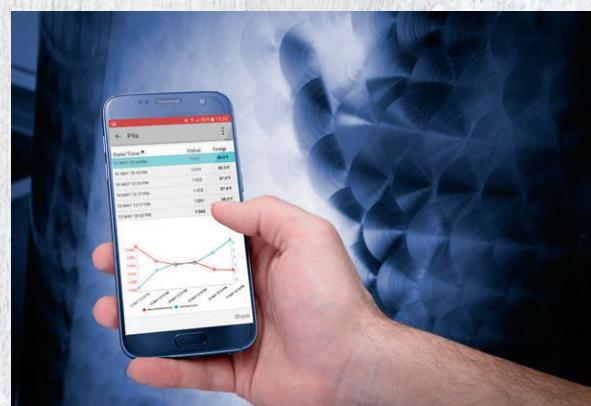


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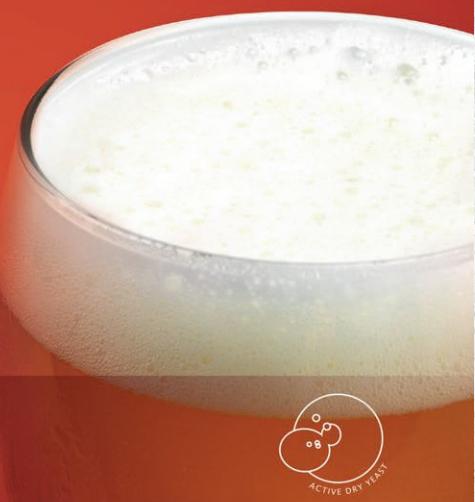
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Some people like to scribble handwritten notes when they try a new beer. Others use an app on their mobile device. For those who prefer something a bit more vertical, we present to you the 99 Bottles of Craft Beer on the Wall Scratch-Off Poster. With original illustrations of your favorite lager and ale labels, this poster will serve as a constant reminder of the beers you have enjoyed, as well as those yet to come.

popchartlab.com

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OLD WOOD SIGNS

There comes a time in just about every homebrewer's journey when one pauses, looks around the brew area, and says, "This could benefit from some vintage beer art." Look no further than the delightfully antique specimens over at Meissenburg Designs. Some of our favorite examples are built to resemble the end of an old barrel, complete with a spigot if you like. Custom text fields let you place your own favorite slogan.

oldwoodsigns.com

\$85.00 AND UP



SRM T-SHIRT

Every cloud has a silver lining, but up until recently, spilling beer on your shirt was pretty much a no-win situation for all involved. But when you're wearing the AHA's SRM T-Shirt, you'll turn that frown upside down as you accurately* identify the color rating of your blunder. These shirts are great for brew days, BJCP exams, and prompting questioning looks from your less enlightened friends.

HomebrewersAssociation.org

*Accuracy may diminish with washing.

\$19.99



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This insulated cooler is perfect for homebrewers. Unlike smaller coolers designed for cans, this one is built for bottles and can also accommodate an ice pack to keep your homebrew fresh and chilled en route to the party. Or you can pop in a couple of standard growlers if draught is more your thing. The attached bottle opener helps you prevent prying-related injuries that stem from neither you nor your friends having remembered to bring one.

mountainsmith.com

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YETI's vacuum insulated tumblers are legendary for their ability to keep hot drinks hot and cold drinks cold. All of us at the American Homebrewers Association and Brewers Association keep a Rambler on hand to hold the diverse tipplers that get us through the day. AHA member Jason Bryant has taken these YETI mugs a step further by laser engraving them with all the phases of the brewing process. Available in your choice of classic stainless, black, orange, blue, or turquoise, these attractive beverage holders will stay with you from your morning coffee to your afternoon IPA.

fermentedperspective.com

\$39

AHA BELGIAN SNIFTER

There are times when a humble pint glass just won't do. For those special times, bust out this fancy homebrew vessel! The rounded bowl allows for subtle warming of the beer via heat transfer from the hand, and the tapering top enhances aromas. Cheers!

HomebrewersAssociation.org

\$8.99



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slbmagnets.com

\$29.99



THE OAK BOTTLE

If you like to experiment with oak in your homebrew, you know that getting it right is more art than science. Knowing just how long to leave a brew on chips, beans, cubes, or spirals takes experience and patience, and sometimes you don't even know if a beer will hold up to oaking or not. Enter the Oak Bottle. Available in 150, 355, and 750 mL sizes, these wooden bottles feature an interior that accelerates the process through extra surface area. The increased contact introduces oak over a period of hours or days instead of weeks or months, offering you an opportunity to evaluate various aging protocols in a short period of time.

oakbottle.com

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How many times have you gone to the Ren faire only to show up with the same old pewter tankard or drinking horn as everyone else? Avoid medieval faux pas with these handmade wooden mugs. Each mug is crafted from European white oak and holds 550 mL of your favorite libation.

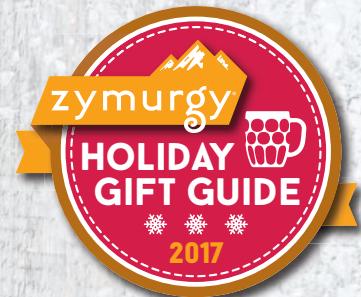
Mugs are available in several styles, including barrel, Viking, and Hobbit.

woodtrim.in

STARTING AT \$18



Check out eZymurgy at HomebrewersAssociation.org/magazine/ezymurgy/ for past years' Holiday Gift Guide ideas. Your favorite homebrewer will thank you for doing so!



BREW GURU BEANIE

You know how none of the characters in *Game of Thrones* ever wear hats, even when they're north of the Wall and it's like 200 degrees below zero with windchill? If you handed out this knit beanie to everyone you met, they'd probably crown you king or queen of Westeros. Stay warm; winter's coming here!

HomebrewersAssociation.org

\$19.99



COLORADO WILD SAGE PICKLES

The Real Dill makes some of the finest pickles we've ever tasted, but it's the pickler's Briners & Brewers series that has us over the moon. The latest offering in a series that has also included Great Divide Brewing Co. and Odell Brewing Co. is Colorado WildSage, a collaboration with Crooked Stave Artisan Beer Project. Crooked Stave's Colorado WildSage is a Brett saison that includes white sage and lemongrass, ingredients that also find their way into these pickles. The oak-aged pickle brine also includes malt and Centennial hops. Drink your pickles and eat your beer!

TheRealDill.com

\$12.99

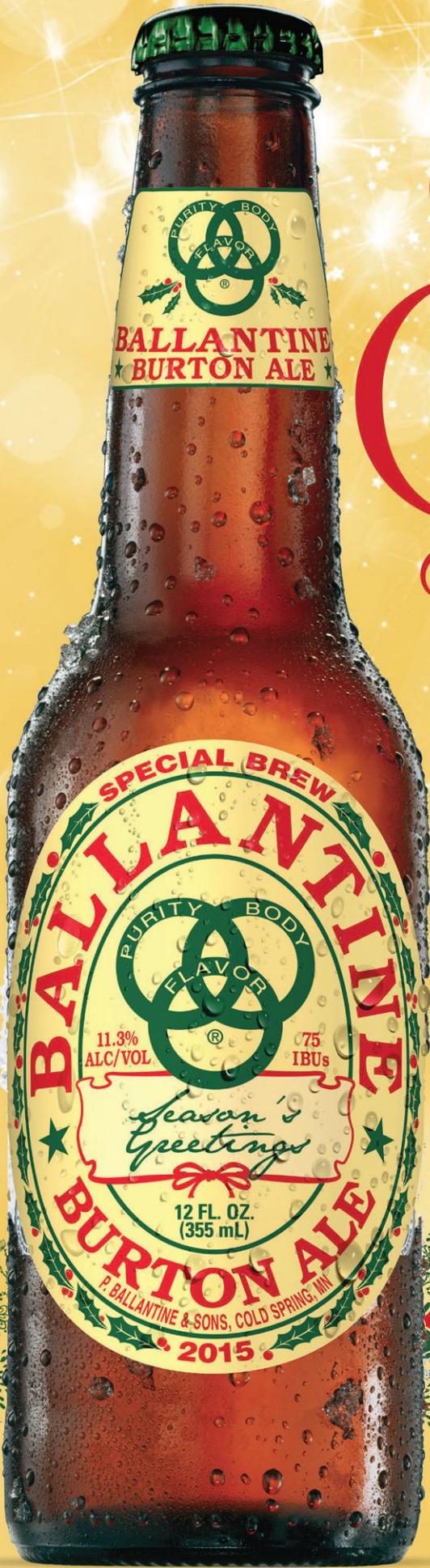


CRYO HOPS®

Cryo Hops debuted at the 2017 AHA Homebrew Con in Minneapolis to much acclaim. Minutes after the doors opened for the Homebrew Expo, a line formed at the YCH booth as eager homebrewers waited to get their hands on a sample. With up to twice the alpha acid concentration as the hops from which they are derived, a little goes a long way. Look for Cryo Hops in Cascade, Citra®, Columbus, Ekuanot™, Loral™, Mosaic®, Palisade®, and Simcoe® varieties.

ychhops.com

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First brewed in the 1930's, Ballantine Burton Ale was given as a Christmas gift to close friends and family of the brewery after being aged for several years in American Oak barrels. Master Brewer Gregory Deuhs has recreated the original recipe and cellared a limited number of cases to further develop its complex character. The maturation process transforms the taste of sweet malt into nuances of sherry, stone fruit and raisin, with the oak mellowing to a sweet, toasted vanilla-like flavor. We are making available our limited 2015 batch as a special holiday winter warmer for under your tree.

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Find Five Star Products At Your Local Homebrew Store

By Amahl Turczyn

The 2017 Make the Cut Homebrew Challenge

The Vermont beer scene is hopping, and an unlikely collaboration between retailer The Beverage Warehouse and distributor Farrell Distributing, plus craft brewery 14th Star Brewing Company, led to the formation of this unique event to celebrate it. Now in its third year, the Make the Cut Homebrew Challenge deviates from traditional homebrew competitions in several important ways.

For one thing, beers are not just judged by certified beer judges, but also by hand-selected members of the beer industry, local media, and craft beer fans. According to the organizers, "these are the people that brew, buy, drink, talk and live for craft beer." Another difference is that beers are not only judged according to stylistic accuracy, but also "with a focus on commercial appeal and wow factor," the event website explains.

Only 200 entries are accepted, and from those, two finalists are chosen. They get to brew a limited 120-gallon batch of their winning beer at 14th Star Brewing with brewery founder and owner Steve Gagner, himself a veteran of Afghanistan and former president of the Vermont Brewers Association. The winning entrants maintain the rights to their recipes, and they get to have their beer served on tap for public consumption at selected bars and restaurants, and even packaged in cans for sale at local craft beer stores.

But judging doesn't end there. The two finalist beers are sold in tasting pairs at participating Vermont craft meccas along with a ballot for a public vote. Then the results are tallied, and the best-of-show winner is the beer that makes the cut. Beyond bragging rights, the winning brewer gets to pour their beer at the

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Ted Ortiz Y Pino of chats with 14th Star brewer Prescott Stanton.

Vermont Brewers Fest, and they receive a cool \$1,000 when the beer is released.

Competition founder Jen Swiatek came up with the idea for the competition after speaking with Beverage Warehouse patrons, many of whom were avid homebrewers who wanted to know what they'd have to do to make their beer commercially available to Vermont craft beer enthusiasts.

"It was something brewing in my head for some time, and I reached out to the others to see if they wanted to join me in my

crazy idea," she recalls. "Well, it's become kind of awesome, as it embodies Vermont's dedication to our imaginative brewers, both professionals and hopefuls, so we hope to continue this competition in the future."

Competition during this year's public judging of the final round was fierce. "We had 12 locations pouring the two finalists' beers in the head-to-head competition," Swiatek continues. "That resulted in over 1,000 votes in a two-day span. Only 19 votes separated the two finalists in the end."

But although it was close, there could only be one victor. Runner-up Chris Kesler of Jericho, Vt. only began homebrewing in the last couple of years, but his New England IPA "Disco Montage" drew plenty of votes. Hazy, hop-forward, and well balanced, it had all the creamy mouthfeel and juicy hop flavor of the best NEIPAs brewed in the region.

But Ted Ortiz Y Pino of Georgia, Vt. took the champion title with his fruit sour. His "Squeeze the Day" is a kettle-soured crowd pleaser that features the zest of four citrus fruits and achieves a refreshing, balanced tartness that one judge described as "a perfect introduction to sour beer." Ortiz Y Pino takes an experimental approach to brewing, which he has avidly studied for many years.

"I got into homebrewing in 2010 after I graduated college," he explained, "because I loved craft beer and wanted to learn more about what makes a good beer so I could eventually create my own." His home state proved to be the perfect environment for a budding homebrewer.

"I'm fortunate to have so many great breweries around me in Vermont, and those breweries set the bar high for the quality of beer that I aspire to create," he says. "I love sour beers, and what inspired me to make "Squeeze the Day" was the lack of sour beers at the beverage stores. The few I found weren't exactly what I wanted. I love the refreshing, clean sourness of Berliner weisse and wanted to do my own take on a kettle-soured beer by toning down the acidity and adding citrus elements. I combined citrusy hops, four different types of fresh citrus fruit zest, and the acidity from lactobacillus to make a very refreshing summer beer."

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Squeeze the Day

Ted Ortiz Y Pino, Best of Show, 2017 Make the Cut Challenge

Batch Size: 5 US gal. (18.9 L)

Original Gravity: 1.050 (12.5° P)

Final Gravity: 1.012 (3° P)

Color: 15 SRM

Alcohol: 5% by volume

Total Efficiency: 74%

MALTS

10 lb. (4.54 kg) pale 2-row malt

4 oz. (113 g) flaked oats

HOPS

1 oz. (28 g) Amarillo pellets @ 15 min

0.5 oz. (14 g) Galaxy pellets @ flameout

0.5 oz. (14 g) Citra pellets, dry hop 7 days

YEAST

Safale US-05 American ale yeast

EXTRA INGREDIENTS

10 g probiotic powder, or about 1 cup of yogurt (to kettle sour wort)

1 lemon's worth (8.5 g) fresh lemon zest (dry hop 7 days)

2 oranges' worth (25 g) fresh orange zest (dry hop 7 days)

1 grapefruit's worth (15 g) fresh grapefruit zest (dry hop 7 days)

1 clementine's worth (5 g) fresh tangerine zest (dry hop 7 days)

BREWING NOTES

Mash at 154° F (68° C) for one hour. Sparge, running 7.9 gal. (30 L) of wort into kettle. Boil down to 6.6 gal. (25 L). After boiling, cool to around 110° F (43° C), and add either probiotics with lactobacillus or yogurt with active cultures. Purge kettle



with CO₂ and seal. Allow wort to sit for 5 days at room temperature (the warmer the better) or until pH falls to 3.4. Bring to a boil and add hops. After primary fermentation is over, add the citrus zest and dry hops. Dry hop for 7 days before kegging or bottling.

EXTRACT VERSION

Substitute 7.5 lb. (3.4 kg) of pale malt extract syrup for the pale malt. Dissolve extract in reverse osmosis or distilled water to desired boil volume and proceed with kettle souring technique as above.



Shown: Tall Black Tap Handle with Round Top
Photo: Oakland United Beerworks c/o The M-Line



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Folks who tasted his efforts obviously agreed. Having won the Make the Cut Challenge, Ortiz Y Pino is looking forward to continuing his brewhouse experiments and has a few words of advice for other recipe pioneers.

"My future plans are to continue experimenting and incorporating interesting ingredients to make unique and well-balanced beers. My advice to other homebrewers is to nail down your process and learn to make basic recipes first before experimenting. It helps you identify variables that you can change and what impact they will have on the finished product. Also, if you have a crazy idea that sounds good to you, go for it. The worst that can happen is that you dump the batch, but you could also discover something great."

Ortiz Y Pino's homebrew recipe is offered above. The commercial version currently in production differs somewhat, but it is based on Ortiz Y Pino's original.

Amahl Turczyn is associate editor of *Zymurgy*. 

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KUDOS—BEST OF SHOW

AHA/BJCP Sanctioned Competition Program

June 2017

CHAOS/Horse Thief Hollow White IPA Competition, 15 entries—*Brandon Kessler, Chicago, IL.*
Sunshine Challenge 2017, 371 entries—*Edward DeCambre, Tampa, FL.*
QUAFF Club Only Summer Fun, 17 entries—*Paul Bischeri & Patrick Martinez, San Diego, CA.*

July 2017

Mid-State Fair Homebrew Competition, 90 entries—*Dylan Roddick, San Luis Obispo, CA.*
6th Beijing Homebrewing Challenge, 141 entries—*Yu Kun, Hebei.*
Maillard Beer Cup II, 38 entries—*Jorge Pizarro Ramos.*
Indiana Brewers' Cup Competition, 1420 entries—*Jereme Grisson, Indianapolis, IN.*
Halfpenny Home Brew Competition, 91 entries—*Dax Rush, Highlands Ranch, CO.*
Home Brew Mart 25th Anniversary Competition, 44 entries—*Kevin Holt, San Diego, CA.*
El Paso County Fair Homebrew Competition, 86 entries—*John Landreman, Colorado Springs, CO.*
THC Club Only Apples vs. Honey, 22 entries—*Ben Rawlins, Tucson, AZ.*
II Copa Nacional Cerveceros en Valpo, 171 entries—*Cerveceria Coda, Valparaiso, Chile.*
E.T. Barnette Homebrew Competition, 32 entries—*Alec Venechuk, Juneau, AK.*
Deer River BBQ & Brew Fest, 52 entries—*Tyler Mangin & John Lewis, Fargo, ND.*
2017 Ohio Brew Week Homebrew Competition, 329 entries—*Brad Pausha, Chicago, IL.*
Dekegger Homebrew Competition, 34 entries—*Jared Jacobson, Decatur, IN.*
Antelope Valley Fair Home Brew Competition, 56 entries—*Shane Avery, Palmdale CA.*
Amador County Fair Homebrew Competition, 135 entries—*Luis Castro, Walnut Creek, CA.*
6th Annual MVHBC Homebrew Competition, 205 entries—*Mark Keck, Boston, MA.*
Philly Homebrew Cup, 61 entries—*Douglas Dinwoodie, Ambler, PA.*
Santa Clara County Fair Home Brew Competition, 72 entries—*Scott Wilson, Gilroy, CA.*
Lane County Fair, 75 entries—*Justin Bradley, Eugene, OR.*
Segunda Copa Sudamericana de Homebrewers, 81 entries—*Rodrigo Campos Oliveira, Fortaleza, Ceará, Brazil.*

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KUDOS—BEST OF SHOW

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Fond Du Lac County Fair by The Cellar Homebrew Store, 10 entries—Richard Cardenas, Lomira, WI.

Battle of the Brews, 78 entries—Thomas Ahmand, MD.

Arvada on Tap, 45 entries—Torre Alhberg, Longmont, CO.

For What It's Worth, 95 entries—Slade Calhoun, Atoka, TN.

Dunn County Fair HomeBrew Competition, 4 entries—Eli Palma, San Diego, CA.

Austin ZEALOTS Homebrew Inquisition, 322 entries—Chad Ramey, Austin, TX.

Canberra Brewers Competition 2 2017, 52 entries—Andrew Lewis Simon Bird.

Curmudgeon Cup, 41 entries—John Mulligan, Swinton, OH.

Winter Fest 2017, 22 entries—Nick Grenfell, Gauteng, South Africa.

2017 German Fest Stein Challenge, 157 entries—Phil Cammarano.

ASH HBOY California Common, 11 entries—Kevin Lott, Gilbert, AZ.

Niagara County Fair Homebrew Competition, 79 entries—Jeff Clift, Cheektowaga, NY.

New Jersey State Fair Homebrew Competition, 400 entries—Tom Jambor, Morristown, NJ.

Gulf Coast Brewers League Summer Classic, 56 entries—David Moore, Ocean Springs, MS.

Iowa State Fair, 257 entries—Rod Wellman, Sioux City, IA.

National Capital Homebrew Competition, 329 entries—Marie-Annick Scott, Edmonton, AB.

Ventura County Fair Home Brew Competition, 32 entries—Chad Pluckrose, Newbury Park, CA.

August 2017

Laramie County Fair Homebrew Competition, 50 entries—Ernie Smith, Casper, WY.

The Niagara College Brewing Competition, 122 entries—Mark Hostrawser, ON.

Iberian IPA Day 2017, 118 entries—Francisco Plasencia, Spain.

Keep Em Brewing, 31 entries—Travis Lott, Maple Grove, MN.

Clash of the Carboys, 55 entries—Jeremy Waters, Baton Rouge, LA.

Home Brew Competition Hosted by New Barons Brewing Coop, 30 entries—Nate Fakler, Milwaukee, WI.

Los Angeles County Fair Homebrew Competition, 284 entries—Carl Townsend, Los Angeles, CA.

6° Concurso Cervejeiro Caseiro Bierland, 65 entries—Silvio Rode, Rio do Sul / SC.

5° Concurso Interno CCCUY, 103 entries—Maximiliano Ahlers, Montevideo, Uruguay.

Decatur Celebration Homebrew Competition, 25 entries—Jeff Hilton, Decatur, IL.

Tercer Concurso de Cervezas Caseras del Paraguay, 51 entries—Javier Lopez, Asunción-Central, Paraguay.

Brewing - Mevashlim, 77 entries—Tomer Avramovitch, Rehovot, Israel.

Kentucky State Fair Homebrew Competition, 400 entries—Harck Pickett, Lexington, KY.

Best of the Bay, 173 entries—Tom Speca, Seattle, WA.

Evergreen State Fair 2017, 204 entries—Brian Hale & Brandon Huston, Tacoma, WA.

2017 Michigan Beer Cup, 484 entries—Jim Satin, Saline, MI.

Iº Concurso Eu Cervejeiro - Concerveja, 95 entries—Marco Machado, Paraná - Brazil.

New South Brew Off, 194 entries—Christopher Miller with Trent Pearson, Nashville, TN.

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Nebraska State Fair Beer and Wine Competitions, 153 entries—Adam Reynolds, Ralston, NE.

Jeffco Fair & Festival Homebrew Competition, 98 entries—Kevin McHugh, Lakewood, CO.

Western Idaho Fair Competition, 130 entries—Andrew Nelson, Boise, ID.

Minnesota State Fair Homebrew Competition, 741 entries—Jim Parejko, Mankato, MN.

O'Connor's 5th Annual Home Brew Competition, 91 entries—James Lewis, Grand Rapids, MI.

Limbo Challenge, 218 entries—Andy Scherzinger with James Gould.

VIº Concurso Estadual da ACervA Catarinense, 354 entries—Daniel Dinslaken, Florianópolis / SC/BR.

Manitowoc County Fair Home Brew Competition, 55 entries—Gary Lockwood, Madison, WI.

Washington State Fair, 157 entries—Dave Frombach, Poulsbo, WA.

QUAFF Club Only Wee vs. Heavy, 28 entries—Paul Bischeri and Patrick Martinez, San Diego, CA.

Rails & Ales Brewfest, 56 entries—Sean Etter's, Altoona, PA.

Crystal Lederhosen, 181 entries—Edward Walkowski, North Abington Twp., PA.

2nd Annual San Mateo Fire Fighters Chili Cook Off Home Brew Competition, 52 entries—Mike Riddle, Napa, CA.

Concurso Jungle Bier, 90 entries—Graciele Paula Silva, Ribeirão das Neves, Brazil.

September 2017

Intervarsity Beer Brewing Competition 2017, 57 entries—University of the Witwatersrand, Johannesburg, South Africa.

Western Australian State Amateur Brewing Competition, 479 entries—Ben Tearne, Perth, Australia.

Arizona Pure Water Brew Challenge, 300 entries—Dragoon Brewery, Tucson.

3rd Hebei Homebrew Competition, 37 entries—Song Jing, HeBei, China.

3ª Copa CervaSerra de Cervejas, 71 entries—Elson Sousa Júnior, Caxias do Sul, Brazil.

Clocktoberfest, 52 entries—Beau Hammel, Minneapolis, MN.

State Amateur Brewers Show of South Australia, 304 entries—Matt Spencer.

The Great Frederick Fair, 110 entries—Brian Wright.

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COMPETITION PROGRAM CALENDAR

November 3, 2017

Concurso Estadual da ACervA

Carioca 201

acervacarioca.com.br

Rio de Janeiro, Brazil

Entry Deadline: 10/7/2017

November 4, 2017

Moravian Homebrewers Meeting

mhmeeting.cz/english

Brno, Czech Republic

Entry Deadline: 11/4/2017

November 4, 2017

California State Homebrew Competition

castatebrewcomp.org

San Francisco, CA

Entry Deadline: 10/12/2017

November 4, 2017

30th Annual Southern California

Regional Homebrew Competition

inlandempirebrewers.com/competition.html

Corona, CA

Entry Deadline: 10/22/2017

November 4, 2017

Liquid Poetry Slam

slam.liquidpoets.com

Fort Collins, CO

Entry Deadline: 10/27/2017

November 4, 2017

2nd Grande Taça BJCP Portugal

cerveja-magazine.pt/concnacionalcerv17

Porto, Portugal

Entry Deadline: 10/26/2017

November 4, 2017

2017 SOBA National Homebrew

Competition

nhc.soba.org.nz

Auckland, New Zealand

November 4, 2017

2017 Badger Brewoff

mhtg.brewcompetition.com

Madison, WI

Entry Deadline: 10/29/2017



November 4, 2017

MALT turkey Shoot "Lucky 13"

turkeyshoot.brewcompetition.com

College Park, MD

Entry Deadline: 10/28/2017

November 7, 2017

UNYHA's Bizarro Sixpack Comp 201

unyha.com/bizarro_comp-2017

Rochester, NY

Entry Deadline: 11/3/2017

November 7, 2017

3rd Annual 3rd Wave Brewing Company

Homebrew Competition

Delmar, DE

Entry Deadline: 11/1/2017

November 9, 2017

Competencia Profesional Cerveza

Mexico 201

copacerveza.mx

Mexico City, Mexico

Entry Deadline: 08/03/2017

November 10, 2017

Texas Honey Show

texasmeadcup.com/tba-2017

Temple, TX

Entry Deadline: 10/31/2017

November 11, 2017

SCH ABC 10

bcoem.schomebrewers.com

Phoenixville, PA

Entry Deadline: 10/29/2017

November 11, 2017

Land of the Muddy Waters

lotmw.mugzhomebrew.org

Rock Island, IL

Entry Deadline: 11/2/2017

November 11, 2017

Brew Slam 2017 (GTA Brews)

gtabrews.ca/brew-slam

Toronto, ON

Entry Deadline: 11/4/2017

November 11, 2017

Star City Homebrew Throwdown

throwdown.starcitybrewers.org

Roanoke, VA

November 11, 2017

BrewDat Homebrew Competition 201

bayoubeerfest.com/brewdat

Houma, LA

Entry Deadline: 11/11/2017

November 11, 2017

Stout Day Canarias

facebook.com/Stout-Day-Canarias-1956060597997709

San Cristóbal de La Laguna, Santa Cruz de Tenerife, Canary Islands, Spain

Entry Deadline: 10/27/2017

November 11, 2017

Music City Brew Off

musiccitybrewers.com

Nashville, TN

Entry Deadline: 10/27/2017

November 11, 2017

3rd Annual Battle of the Brews

scroogeandbarley.com

South Lyon, MI

Entry Deadline: 10/29/2017

November 11, 2017

Joint Novembeefest Puget Sound Pro-Am

wahomebrewers.org/novembeefest

Kent, WA

Entry Deadline: 11/5/2017

November 11, 2017

Skirmish in the Triad

facebook.com/BattlegroundBrewersGuild

Greensboro, NC

Entry Deadline: 10/27/2017

November 11, 2017

SA NHC Final

Johannesburg, South Africa



For an up-to-date calendar
of AHA and BJCP events
go to the Events section of
HomebrewersAssociation.org

November 11, 2017

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brewcon-worldseries.com

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monster.texascarboys.org

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mashnewjersey.com/competitions/motown-mash

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Concurso Bahia Malte de Cerveja

Artesanal

bahiamalte.com.br

Salvador, Bahia, Brazil

Entry Deadline: 11/12/2017

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Mazer Cup Brasil

ashbrasil.com.br

Porto Alegre, Rio Grande do Sul, Brazil

Entry Deadline: 11/11/2017

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Festival de Cerveja Artesanal

de Mato Grosso do Sul

acervams.com.br

Campo Grande, Brazil

Entry Deadline: 11/14/2017

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Black Friday 2017

competitions.londonamateurbrewers.co.uk/

blackfriday

London, London; UK

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minicerveceria.cl

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weecountybrewers.com

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Entry Deadline: 11/11/2017

November 25, 2017

Maple City Cold Snap Competition

mcbrewers.ca/coldsnap2017

Chatham, ON

Entry Deadline: 11/18/2017

November 27, 2017

Copa Peruana de Cervezas

Lima, Perú

Entry Deadline: 11/20/2017

December 2, 2017

Walk the Line with Barley Wine

dunedinnbrewersguild.com

Dunedin, FL

Entry Deadline: 11/18/2017

December 2, 2017

19th Annual Palmetto State Brewers Open

Columbia, SC

December 2, 2017

Pennsylvania Homebrew Open

Competition

pahomebrewcomp.com

Bellefonte, PA

Entry Deadline: 12/1/2017

December 2, 2017

CiderDays Amateur Cider Competition

201

ciderdayscompetition.org

Deerfield, MA

Entry Deadline: 11/18/2017

December 2, 2017

Hoppy Cup Homebrew Competition

facebook.com/hoppycup

Hong Kong, China

Entry Deadline: 11/3/2017

December 2, 2017

8. Concurso Estadual de Cervejeiros

ACervA Paulista

acervapaulista.com.br

Sao Paulo, Brazil

Entry Deadline: 11/27/2017

December 9, 2017

3. Concurso Nacional Bräu Akademie

São Paulo, Brazil

December 9, 2017

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stlbrews.org/competition/hhhc/

St. Louis, MO

Entry Deadline: 12/1/2017

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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.



First up is Brooklyn Sorachi Ace from Brooklyn Brewery. Sorachi Ace is named for the signature hop that plays a leading role in this classic saison. Named for the Sorachi region of Hokkaido, the Sorachi Ace hop was developed in Japan about 40 years ago by crossing British Brewer's Gold, Czech Saaz, and Japanese "Beikei No. 2" cultivars. The lemony, slightly tart result was considered strange at the time and fell out of use until it was brought back to life in 2008 in Washington State.

Brooklyn says that its Brooklyn Sorachi Ace saison is “dry, sharp, and crackling with flavor...reminiscent of lemongrass, verbena, dill, and lemon peels.” It is brewed from German Pilsner malt, Belgian yeast, and, of course, Sorachi Ace hops. It has an original gravity of 15.4° P (1.063) and an alcohol content of 7.6% by volume. The brewers recommend pairing this beer with seafood, cheese, poultry, barbecue, and tomato-based pasta sauces.

Next is Avant Garde from the Lost Abbey in San Marcos, Calif., though the brewery stops short of labeling it a bière de garde. Instead, they say Avant Garde represents their “commitment to brewing beers to no particular style....We would prefer to say it was brewed in the Avant Garde style of beers that will reward all those who seek the not so ordinary. Deep gold in color with hints of biscuits, caramel and fresh baked bread, this beer is sure to delight the senses and palates of consumers everywhere.”

The Lost Abbey says to expect aromas of “an enticing blend of ripened orchard fresh fruit

Saison and bière de garde are commonly considered in the same breath despite having only moderate stylistic overlap, at least by today’s standards. Both are referred to as “farmhouse”-style ales, a broad descriptor that says more about historical lineage than sensory character.

Spicy phenols, fruity esters, and a bone-dry finish typify saison, while bière de garde tends to be malt-focused with low to moderate bitterness and a clean fermentation character. In this installment of Commercial Calibration, our judges consider craft examples of saison and bière de garde that take a modern twist on their respective styles.

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



Brooklyn Brewery
brooklynbrewery.com

The Lost Abbey
thelostabbey.com

BJCP Style Guidelines
bjcp.org

Commercial Calibration Index
HomebrewersAssociation.org/pages/zymurgy/commercial-calibration

(green apples), and warm bread pulled just from the oven” and that the flavor demonstrates “an initial malt sweetness that fades into a firm but subtle hop presence.” Lager yeast and a period of cold conditioning are used to promote a smooth finish.

Avant Garde is 7% alcohol by volume. The Lost Abbey recommends pairing it with rustic cheeses, warm loaves of bread, chicken, and fish.



To learn more about saison and bière de garde, check out *Farmhouse Ales: Culture and Craftsmanship in the Belgian Tradition* by Phil Markowski, available @ BrewersPublications.com

THE SCORES

Brooklyn Sorachi Ace—Brooklyn Brewery, Brooklyn, N.Y.
BJCP Category: 25B, Saison



THE JUDGES' SCORES FOR BROOKLYN SORACHI ACE



Aroma: Crisp Pils malt aroma with noticeable yeast-derived esters and peppery phenols. Low to medium leamy notes from unique Sorachi Ace hops. No overt alcohol aroma. No DMS. No diacetyl. A bright, refreshing aroma of both a classic saison and the unique hops contribution. (11/12)

Appearance: Hazy to cloudy, which is OK for the style, especially an unfiltered version. Dense, rocky, white, long-lasting head. Yellow color is appropriate to style. Inviting. (3/3)

Flavor: Pils malt up front balanced with assertive hop bitterness and a leamy hop flavor. Belgian yeast-derived esters and peppery phenols contribute to the classic saison character. Some rustic, earthy notes add to the authenticity and complexity. Dry finish is on target for the style. Alcohol is also assertive: a bit high for a standard saison but within the range for the stronger version. No DMS or diacetyl. (18/20)

Mouthfeel: Smooth, crisp, and well attenuated, with a bit of lingering bitterness and not-so-subtle alcohol warming. Medium body. Well carbonated. (5/5)

Overall Impression: This is a very well made saison that delivers authentic Belgian character and the promise of the Sorachi Ace hops. While the higher leamy hop presence may be unusual for a classic Belgian saison, this beer was a showcase for both the hops and the underlying style. Sooooo drinkable on its own, and it went very well with tonight's pulled-pork barbecue sliders with Memphis barbecue sauce. (8/10)

Total Score: (45/50)



Aroma: The initial aroma is moderate peppery spice. Medium low pear esters with a hint of leamy citrus add complexity. Medium intensity perfume-like hop aroma has a lemon zest character coupled with an herbal base note. The medium-low maltiness is bready with just a hint of toast. A slight note of sulfur vents off quickly. (10/12)

Appearance: The beer is bright yellow with a greenish tinge to it and is moderately hazy. There is a moderate, finely beaded white head with average retention. (3/3)

Flavor: Hop flavor clocks in just a bit above medium intensity, leading the flavor notes with a leamy and savory herbal character. The balance tilts towards medium-high bitterness. Some soft, rounded sweet and bready malt gives the bitterness a good fight but does not prevail. The grassy, bitter note lingers long into the fairly dry finish. (16/20)

Mouthfeel: The medium body is coupled with medium-high carbonation. Moderate grassy astringency lingers long into the finish and helps leave a bone-dry finish. There are moderate warming alcohol notes. (4/5)

Overall Impression: A delicious saison with interesting hop character from the Sorachi Ace hop, this beer has obvious alcohol warmth, but that doesn't lessen the overall drinkability. My only nitpick is some excess grassy astringency that lasted long into the finish. Great for summertime and warmer climates. (8/10)

Total Score: (41/50)



Aroma: Initial earthy, cedar-like aroma with light citrus and lemon peel notes. Sorachi Ace hops are displayed nicely. Moderate alcohol melds with the citrus to give an interesting gin-and-tonic character. Very light caramel and biscuit notes from the malt. Moderately low white pepper and clove phenols add complexity. Alcohol becomes more apparent as it warms. (9/12)

Appearance: Golden color with moderate haze gives a translucent quality. The head has tight white beading, uniform texture, and good retention that leaves some lace in the glass. (3/3)

Flavor: Low malt with a little sweetness and honey. Complex yeast profile marries pepper, citrus, and leather notes with the saison yeast. Bitterness is moderately high, with contributions from both hops and phenols. The dry finish is appropriate, but a little more sweetness would provide a slightly rounder and more balanced profile. (16/20)

Mouthfeel: Some warmth, low astringency, and pleasant creaminess from excellent conditioning and proper carbonation are positive, but some light metallic and mineral notes and a low lingering harshness in the finish don't quite harmonize. (3/5)

Overall Impression: This is a very good example of the style with a unique combination of Sorachi Ace hops and saison yeast. Hops are prevalent in the aroma, while yeast dominates the flavor. The finish is not as smooth as it could be, but alcohol and phenols should mellow with a little gentle aging. Overall, this is an innovative, complex, enjoyable beer. (8/10)

Total Score: (39/50)



Aroma: Moderately strong hop and yeast aroma. The yeast is spicy and peppery, and the hops have a lemongrass and hay character. There is a fresh edge to the hops. Light citrus, perfume. Neutral, slightly honey-like malt, medium intensity. Smells fresh and bright. (11/12)

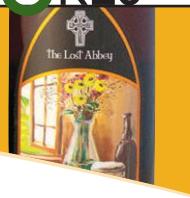
Appearance: Tall, white, frothy head with tiny bubbles and fairly good retention. Lightly hazy with a slight sheen. Effervescent. Pale gold color. (3/3)

Flavor: Bitter lemon flavor, like fruit rind, but with a perfume-like aspect. The citrus is complex, like lemongrass, Meyer lemon, and lemon zest. Peppery yeast phenols blend well. Soft honey-like malt flavor with a dry finish and light alcohol taste. The bitterness is moderately high. Fresh and clean-tasting. Aftertaste has the complex lemon rind and pepper flavor too. (17/20)

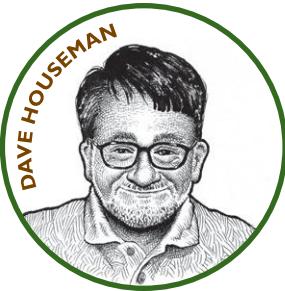
Mouthfeel: Very high carbonation. Moderately creamy palate. Lightly warming, especially when exhaling. Lightly astringent. Though dry, it has a certain heft due to the ABV. (4/5)

Overall Impression: It seemed a bit full for a saison at first, but then I noted that it's a 7.2% ABV super saison, so it does make sense. The complex citrus and pepper character is interesting. Sometimes Sorachi Ace can have a "Lemon Pledge" character to it, but this was well handled. The flavors begin to balance more as it warms. Dry, bitter, and highly carbonated with a significant hop and yeast character—basically what a saison should be. I'd love to try a 5% version of this so I can drink it faster. (8/10)

Total Score: (43/50)



THE JUDGES' SCORES FOR AVANT GARDE



Aroma: Earthy, rustic notes up front. Fruity esters of pears and ripe apples. Low but noticeable alcohol presence. Malt-focused but somewhat undifferentiated, although tending to Pils malt character. Hop aroma is low to none. No DMS. No diacetyl. Clean, crisp fermentation. (10/12)

Appearance: Pale yellow color appropriate to the blonde bière de garde style. Big, dense, cream-colored, long-lasting head. Hazy and unfiltered, which is OK for style. (3/3)

Flavor: Malt-focused: bready Pils malt character with initial sweetness gives way to balanced, moderate hop bitterness, short of Pilsner-level bitterness. Moderate ripe apple-like fruity esters, likely yeast derived. No phenols. No DMS or diacetyl. Clean lager fermentation and conditioning. No distinct hop flavor but hops may be lending to the overall complexity. (18/20)

Mouthfeel: Soft, rounded palate. Smooth mouthfeel. Noticeable alcohol warmth. Medium body. Well carbonated. (5/5)

Overall Impression: A wonderful blonde bière de garde that showcases pale Pils malt and Belgian yeast. This nicely lagered beer is clean and crisp yet still retains yeast-derived esters and a rustic character. A classic farmhouse beer to have with a stinky, washed-rind cheese and many other foods. (8/10)

Total Score: (44/50)



Aroma: This begins with low funky notes and an earthy, spicy, candied note. Low malt exhibits biscuit, cracker, and a touch of sweet baked bread. I perceived some medium low apple and pear ester. There is a slight pop of sulfur on the nose. I detect a very low spice note, but I can't tell whether it is phenol based or hop derived. As the beer warms up, the esters became more like Granny Smith apple aroma. (10/12)

Appearance: The beer is deep gold and moderately hazy. The thick, rocky, frothy, ivory head has average staying power and then falls to a skim of foam. (3/3)

Flavor: Moderate soft, rounded maltiness begins with a burst of sweetness and then morphs into biscuit and a bit of caramel. Hop flavor is medium-low and spicy. Bitterness is at medium. I perceive medium-low spicy phenols starting in the mid-palate that last into the finish. The fruity tones are less pronounced in the flavor and lurk behind the malt and hop bitterness. The finish is dry. (17/20)

Mouthfeel: This beer is medium bodied with a medium-high level carbonation that offers a pleasant carbonic bite. Despite the zing, it leaves a creamy sensation on the tongue. I note a slight bit of lingering coarse, grainy astringency. (4/5)

Overall Impression: This is a delicious, complex beer that I find to be very refreshing. It is composed of layers of malt, spice, and fruit with an anchoring bitterness. There is a slight bit of funk that adds more interest. This is one that can be enjoyed alone or paired with food. (9/10)

Total Score: (43/50)



Aroma: Moderate lemon and a light lactic character, followed by mineral notes with some mustiness. It's not unpleasant like mold or a damp cellar, but rather earthy and mushroom-like. Malt is subdued and provides light toasted notes in the background. (8/12)

Appearance: Golden color with a moderate haze. The head has impressive beading and retention, leaving frothy lace inside the glass. (3/3)

Flavor: Same flavor components as in the aroma but more balanced. Light toasted malt notes transition to earthy, woody notes that are slightly pungent and reminiscent of Palo Santo wood. The finish is quite dry with moderate bitterness. Underneath is a layer of lemon curd and acidity. The balance between tannins, acidity, and yeast character is nicely done. (16/20)

Mouthfeel: Carbonation is moderately high with some effervescence, but it's not too prickly. Moderate creaminess provides some roundness that helps offset a very light astringency. There is also a restrained alcoholic warmth. (4/5)

Overall Impression: This is a well-crafted, interesting beer. The aroma seems a little discombobulated, but everything meshed together in the flavor. Mustiness in this style is normally not quite as assertive as it is here, but it worked from my perspective. A little fresher yeast character would have been nice, but shipping during unseasonably warm weather may have accelerated aging and muted it. The lactic notes were higher than expected but enhanced complexity. (8/10)

Total Score: (39/50)



Aroma: Hoppy and malty with moderate intensity. The balance leans slightly hoppy with a fresh, spicy hop character. The malt has honey sweetness and hints of bready richness. Smooth lager character is not fruity-yeasty and hints at a light sulfur character. Very clean and fresh. (10/12)

Appearance: Tall, rocky, white, mousse-like head persists well. Deep gold color. Highly effervescent. Very slight haze. (3/3)

Flavor: Similar to aroma, even malt and hops with moderate intensity. The malt has a clear, bready, and lightly toasted flavor that gives an impression of sweetness yet finishes dry. The bitterness and hop flavor are both medium, and the hops have a spicy, herbal character. The malt-hop balance seems even, with both being present in the aftertaste. Clean lager character and light sulfur. Light alcohol in aftertaste, too. (16/20)

Mouthfeel: Smooth, velvety texture. Very high carbonation adds a prickle. Medium-full body. Lightly warming. Not astringent. (4/5)

Overall Impression: A bit hop-forward for the style (aroma, flavor, bitterness), even though pale bières de garde do tend to be hoppier. The malt character is superb for a pale bière de garde, with a great bready, lightly toasted flavor. The lager smoothness is perfect. The hop balance is a little high, even when warm, but the hops are really clean and fresh. Body is a touch full. This beer has an "American interpretation" feel to it, with the hoppy balance. Very enjoyable to drink, and much fresher than imports. (7/10)

Total Score: (40/50)

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By Charlie Papazian



Origins of Craft Beer & Food Appreciation

It began in the 1970s. It wasn't small and independent professional brewers who blazed the trail. It was the homebrewer. I suppose that you could say they are the ultimate in small and independent. If one looks at the earliest issues of *Zymurgy* magazine in 1978, '79, and '80, you'll find a food column called "Feast, Food & Foam," which often featured cooking with beer. The impetus was pure joy and our own exploration of fun and making things work.

All of the early American Homebrewers Association conferences had banquets, fanfare, and events that featured beer and food, in particular cooking with beer. The bard of beer himself, Michael Jackson often hosted many of our conference banquets and discussed the ingredients in the food and the beers paired with each course. This began in the early 1980s.

Taste Buds

Things were happening earlier than most people realize. Our network of knowledge developed through conversation: no internet, no fax. Since there wasn't any electronic social network, it was comparatively tough getting the word out and popularizing the idea of beer *and* food, beer *with* food, and beer *in* food. Fortunately, our American Homebrewers Association membership base had people in influential places.

In the 80s and early 90s, I was the person on the American Homebrewers Association's and Association of Brewers' staff doing most of the traveling. We were initiating many groundbreaking food and beer gigs. We integrated awareness of food with beer as much as we could and used our events to promote these then revolutionary ideas.

I was invited to speak to the students at the Culinary Institute of America (CIA) in New York. I also helped plan and organize a beer in/with food dinner for a hundred people on campus, the first of its kind at the CIA. I recall that Ken Turow, associate dean and American Homebrewers Association member, was one of the people I worked with at the CIA.

and without beer as an ingredient. It was there that I also learned about the role of umami in successful food and beer pairings. I shared what we learned with pairings of quality sardines and IPA, aged parmesan with hoppy beer.

What we discovered with beer mirrored the classic Italian presentation of beef carpaccio: sliced raw beef sprinkled with arugula and lemon juice. Bitterness and acidity enhance the umami of beef protein. That's why a hopped-up Pilsner or citrusy pale ale goes so well with carpaccio, sardines, or parmesan. Beer has both bitterness and acidity.

Six Beer Flavors

I was recently asked what I thought about the words and phrases we use to describe beer and to offer some examples of these descriptors. Here, my answers lay bare some of my feelings, experiences, and portrayals of what I've learned

Crisp and clean: To me, this is best portrayed with a homebrewer's version of well balanced Pilsner or helles. These lagers receive kettle additions of old-school "noble-type" hops but are also dry-hopped with lager type hops. You get a crisp, clean deliciousness that even traditional German brews don't approach because they don't include dry hops.

Hoppy and bitter: Hoppy means character of flavor, aroma, bitterness, and even umami. I know that protein content of certain hops can contribute to umami complexity of beers brewed with these hops. I enjoyed harsh bitterness in my initiation phase, but I have since drifted to the softer bitterness contributed by certain types of (usually lower alpha) hops.

**GETTING PEOPLE TO
REALIZE THE HIDDEN
ENJOYMENT OF BEER
AND FOOD IS A
NUANCED THING.**

We also connected with the Union League executive director, who invited me to do beer dinners on at least two different occasions. During the same early period, I also managed an annual beer dinner fundraiser for a Boulder non-profit startup aerial dance company called Frequent Flyers. I worked with various chefs, local breweries, other breweries, and importers, and the event became an annual institution, the first "beer dinner" in Boulder.

What We Learned

I recall how using Allagash White beer as an ingredient in beef tartare at a Slow Food event in Italy astounded the culinary students. We compared tartare with

I've never brewed this recipe myself, but this beer was presented to me by Seattle's Boeing Homebrew Club at an AHA Homebrew Con a few years ago. A wonderfully delicious pale, smoked apple beer, it was unique in that the smoke flavor didn't come from malt, but from apples that had been smoked on a backyard smoker grill. The overall balance was exceptionally smooth. Smoked apples don't have the astringency of smoked malt. The apple flavor was smooth, authentic, and distinct, without being overly tart or sweet. When I told the club how much I loved this beer, they replied, "You should try some of our smoked squash and pumpkin beers Charlie!"

Boeing Smoked Apple Lager (All-Grain)

You'll need a 6-gallon (22.7-liter) or larger fermenter for this brew!

Batch Size: 5.25 US gal. (20 L)

Original Gravity: 1.060 (14.7 B)

Extract Efficiency: 79%

Final Gravity: 1.014 (3.5 B)

Bitterness: About 22 IBU

Color: 13 SRM (26 EBC)

Alcohol: 5.8 % by volume

MALTS AND FERMENTABLES

10 lb.	(4.5 kg) Vienna-style malt or light 8-10 L Munich-style malt
5 lb.	(2.27 kg) apples
8 oz.	(227 g) crystal malt 40° L

HOPS

1 oz.	(28 g) German Hersbrucker-Hallertau @ 60 min (4 HBU/112 MBU)
0.75 oz.	(21 g) Crystal pellets @ 20 min (4 HBU/112 MBU)
0.5 oz.	(14 g) Crystal pellets, dry hop

YEAST

German lager yeast, Oktoberfest/Märzen lager yeast, or White Labs Cry Havoc yeast

ADDITIONAL ITEMS

1/4 tsp.	(1 g) Irish moss powder
3/4 cup	(175 mL) corn sugar
or	
1.25 cup	(300 mL) dried malt extract (for bottling)

BREWING NOTES

Core apples by removing centers. A grill designed for smoking food is self-explanatory. If you use a charcoal grill, use enough charcoal to provide a low and even heat. Add pieces of fruitwood, maple, oak, hickory, mesquite, or your wood of choice atop the charcoal. Place apples on grill and cover with lid to enable wood to smolder. Leave vents open to keep the charcoal lit and alive. Don't char the apples, but rather slow cook and smoke them. Remove when soft and lightly browned, yet firm enough to remove from grill. Set aside to cool. Refrigerate for later use, or add to the wort as instructed later in this recipe.

Add the crushed malt to 10.5 qt. (10 L) of 143° F (61.5° C) water and mix well. The temperature will stabilize between 130° and

135° F (54.5–57° C). Add heat if necessary and hold the temperature at about 133° F (56° C) for 30 minutes. Don't worry about a 3–5° F (2–3° C) temperature drop during this time.

Then add 5 qt. (5 L) of boiling water to this mash. This will raise the temperature to about or just below 155° F (68° C). Hold at about 155° F (68° C) for 30 to 45 minutes, stirring occasionally. Complete conversion by raising the temperature to 158° F (70° C) and holding for 10 to 20 minutes or until an iodine test indicates complete conversion. Then add more heat to raise the temperature to 167° F (75° C). Then pour mash into your lauter tun and sparge with 2.5 gal. (9.5 L) of water at 170° F (76° C). The volume of the wort before boiling should be about 5.5 gal. (21 L).

Bring the sweet wort to a boil, add the 60-minute hops, and boil for 40 minutes. Then add the smoked apples and flavor hops and boil for another 10 minutes. Then add the Irish moss and boil for a final 10 minutes. Cool the wort to about 70–75° F (21–24° C). This can be done simply by immersing the brew pot (with lid on) in a bath of cold running water for about 30 to 45 minutes. Other means of chilling can be used if desired.

Strain, sparge, and transfer immediately to your primary fermenter. The final primary batch size is 5.25 gallons (20 L). If necessary, add additional cold water to achieve this volume. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at about 55° F (12.5° C) for about one week or until fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. If you have the capability, "lager" the beer at temperatures between 35 and 45° F (1.5–7° C) for 3 to 6 weeks. Prime with sugar and bottle or keg when complete. Let condition at room temperature for about a week before storing at colder temperatures.

Boeing Smoked Apple Lager (Partial-Mash)

You'll need a 6-gallon (22.7-liter) or larger fermenter for this brew!

Batch Size: 5.25 US gal. (20 L)

Original Gravity: 1.060 (14.7 B)

Extract Efficiency: 79%

Final Gravity: 1.014 (3.5 B)

Bitterness: About 22 IBU

Color: 13 SRM (26 EBC)

Alcohol: 5.8 % by volume

MALTS AND FERMENTABLES

8 lb.	(3.6 kg) amber malt extract syrup
or	
6.8 lb.	(3.1 kg) dried amber malt extract
4 lb.	(1.8 kg) apples

HOPS

1.5 oz.	(42 g) German Hersbrucker-Hallertau @ 60 (4 HBU/112 MBU)
1 oz.	(28 g) Crystal pellets @ 20 min (4 HBU/112 MBU)
0.5 oz.	(14 g) Crystal pellets, dry hop

YEAST

German lager yeast, Oktoberfest/Märzen lager yeast, or White Labs Cry Havoc yeast

ADDITIONAL ITEMS

1/4 tsp.	(1 g) Irish moss powder
3/4 cup	(175 mL) corn sugar
or	
1.25 cup	(300 mL) dried malt extract (for bottling)

BREWING NOTES

Core apples by removing centers. A grill designed for smoking food is self-explanatory. If you use a charcoal grill, use enough charcoal to provide a low and even heat. Add pieces of fruitwood, maple, oak, hickory, mesquite, or your wood of choice atop the charcoal. Place apples on grill and cover with lid to enable wood to smolder. Leave vents

open to keep the charcoal lit and alive. Don't char the apples, but rather slow cook and smoke them. Remove when soft and lightly browned, yet firm enough to remove from grill. Set aside to cool. Refrigerate for later use, or add to the wort as instructed later in this recipe.

Add malt extract and 60-minute hops to 2 gal. (7.6 L) of water. Bring to a boil. The total boil time will be 60 minutes. When 20 minutes remain, add smoked apples and the 20-minute hops. When 10 minutes remain, add Irish moss. After total wort boil of 60 minutes, turn off the heat. Immerse the covered pot of wort in a cold water bath and let sit for 15–30 minutes or the time it takes to have a couple of homebrews.

Strain out and sparge apples and hops, and direct the hot wort into a sanitized fermenter to which 2.5 gal. (9.5 L) of cold water has been added. If necessary, add additional cold water to achieve a 5.25 gal. (19 L) batch size. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at about 55° F (12.5° C) for about one week or until fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. If you have the capability, "lager" the beer at temperatures between 35 and 45° F (1.5–7° C) for 3 to 6 weeks. Prime with sugar and bottle or keg when complete. Let condition at room temperature for about a week before storing at colder temperatures.

Malty and sweet: There is a world of malt character that is yet to be fully explored and integrated into beers to achieve certain ends. Traditionally, malt sweetness is very simple minded, but with culinary visions in mind, there is so much more that can be explored and accomplished.

Roasty and rich: Roast doesn't just offer nutty, toasty, coffee-like, and cocoa-like flavors, but also adds complex acidity.

Fruity and spicy: Spicy is an overused word that doesn't have a consistent meaning. Does it mean hot, oregano, basil, cinnamon, pepper, coriander, cumin, or something else? I think it is used most often when people are at a loss of how else to describe something. I do that myself, too. So, I think to myself, "Is there a need to be more specific?" Then there is *fruity*. What the hell does that mean? Blueberry? Durian? Strawberry? Jackfruit? Tomato?

Sour, tart, and funky: What are we talking about here? What kinds of sour, tart, and funky? Complexity and sourness come from fermentation. Sour additives don't offer complexity. There's a need for more clarity with which to use these terms.

Preaching vs. Storytelling

How does one approach teaching people about beer and food enjoyment at a beer dinner? I'd ask first whether the audience is in the mood to learn and have a lesson. Sometimes people just want to enjoy beer and food in their own way and in their own world, without a lesson or a sermon. Getting people to realize the hidden enjoyment of beer and food is a nuanced thing. People are not alike. Some don't want to be preached to but would appreciate new knowledge if they knew it would enhance their enjoyment.

So, finally, let's cut the shuck and jive and get on with the recipe.

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



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Horchata Ale, Epic Fail

When you reflect on a disaster, you relive the experience moment by moment. Maybe I should have mashed longer. Maybe I boiled too long. Maybe I added extra corn sugar for a little pop. Maybe that was wrong. When you reflect on a disaster, you think a lot about the maybes.

A vendor at Seattle's 2016 Fremont Oktoberfest had featured a limited-release cinnamon horchata ale. Already a huge fan of horchata, I was inspired, engaged, and ready to make my own. How hard could it be? I developed a recipe, bought supplies, and, other than using flaked rice or lactose for the first time, had a normal brew day.

I should have known something was off when I transferred wort from the kettle to the primary fermenter. The color was much lighter than I had expected, just 3 or 4 SRM. But, once the airlock was bubbling along, I felt reassured even if still unsettled by that light color.

When I racked to secondary, I could see my pale creation in the clear carboy. But maybe it would magically get darker. *Maybe.* When I bottled, I made notes about the color. "Please, good gods of beer, help me now," I prayed. I put away two cases of 12-ounce bottles and hoped for the best.

A few weeks later, when I popped a cap and poured a glass, my creation was the same color. Damn! And the taste? Like diluted Budweiser. It was bad—really bad—and foamy as hell. Three further bottles the next week yielded the same result. I put a six-pack in the fridge and stacked the remaining two cases in my storage room. Hopefully. *Maybe.* *Maybe* the good gods of beer would look favorably on me and grant me my wish.



The boxes sat for months, and I put my head in the sand, refusing to acknowledge the existence of those two cases. Then, my wife texted to ask why a peculiar beer odor and some moisture were emanating from the storage room. When I saw the leakage, I knew what had happened. My father-in-law (my homebrewing mentor) had experienced something similar some years prior when a number of batches exploded in his storage area. He never figured out why.

I inspected the damaged case and found three shattered bottles, their former contents sprayed all over the box and my shelf. I carefully moved everything to a utility sink and realized that I would need to carefully open and dispose of every one of the remaining bottles.

When I popped the first bottle, a violent *poof* issued forth as foam gushed into

the sink. Danger! This would be a violent undertaking. I wrapped a dishtowel around the next bottle and turned on the cold water. As I opened the bottle, the towel contained the messy aftermath. Rinse and repeat 44 times. It was messy and smelly (but mostly messy).

Counting ten intact digits, I was thankful not to have injured myself as I reflected on my oh-so-hopeful brew day. What had happened? All the maybes came back to me. A couple of days later, I looked at my recipe and resolved to try again.

Maybe it will be better. Just maybe.

Anthony Salazar, a hop-growing resident of Seattle, Wash., enjoys the adventures of crafting new recipes and drinking Pacific Northwest beer.

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