

FOR THE **HOMEBREWER & BEER LOVER**

# zymurgy®

The Journal of the American Homebrewers Association®

## BEST BEERS IN AMERICA

THE RESULTS  
OF ZYMURGY'S  
15TH ANNUAL  
READER SURVEY



[HomebrewersAssociation.org](http://HomebrewersAssociation.org)

\$5.50 US / \$8.00 CAN



# 16

RECIPES  
YOU CAN  
BREW

Master Your  
Refractometer

ULTRALIGHT  
HOMEBREWING

Scotch Ale

PLUS SUN TEMPLE NEIPA (BUY A BIGGER HOP BAG)

# KEG MORE,

# PAY LESS



## WWW.KEGCONNECTION.COM

### BASIC KITS

starting @  
**\$64**  
w/ promo  
code below



ALL KITS ARE FULLY  
CUSTOMIZABLE AND COME IN  
BALL OR PIN LOCK VARIATIONS

### FRIDGE KITS

starting @  
**\$86**  
w/ promo  
code below



### TOWER KITS

starting @  
**\$129**  
w/ promo  
code below



# PLUS

USE PROMO CODE  
**HOMEBREWHAPPYHOUR** FOR  
10% OFF YOUR ORDER TO  
CELEBRATE THE RELAUNCH  
OF OUR PODCAST!



## Homebrew Happy Hour



AVAILABLE ON MULTIPLE PLATFORMS

## WWW.HOMEBREWHAPPYHOUR.COM

Publisher ..... Brewers Association<sup>SM</sup>  
 Editor-in-Chief ..... Dave Carpenter  
 Associate Editor ..... Amahl Turcyn  
 Technical Editor ..... Gordon Strong  
 Art Director ..... Jason Smith  
 Graphic Designers ..... Ashley Peck & Kelli Gomez  
 Operations Director ..... Stephanie Johnson Martin  
 Sales & Marketing Director ..... Barbara Fusco  
 barbara@brewersassociation.org  
 Sales Director ..... Kevin Doidge  
 kevin@brewersassociation.org  
 Business Development Manager  
     for Advertising & Sponsorship (East) ..... Tom McCrory  
     mccrory@brewersassociation.org  
 Business Development Manager  
     for Advertising & Sponsorship (West) ..... Kari Harrington  
     kari@brewersassociation.org  
 Advertising & Sponsorship Associate ..... Joe Damgaard  
 Marketing Managers ..... Jeb Foster & Rachel Staats  
 Member Services/Circulation Manager ..... Dan Goloback

## American Homebrewers Association

Director ..... Gary Glass  
 Assistant Director ..... Steve Parr  
 Web Editor ..... Duncan Bryant  
 Events & Membership Coordinator ..... Matt Bolling  
 Competition Coordinator ..... John Moorhead  
 Administrative Assistant ..... Millie Shamburger

## AHA Governing Committee Members

Drew Beechum, Fred Bonjour, Martin Brungard, Debbie Cerdá, Sandy Cockerham, Denny Conn, Phil Farrell, Chris P. Frey\*, Kathy Yan Li, Jill Mariley, Dennis Mitchell, Jeff Rankert, Chip Walton, Roxanne Westendorf\*, Kim Wood.

\*Indicates representative to the BA Board of Directors.

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

Changing your address? Let us know in writing or e-mail your address changes to info@brewersassociation.org.

*Zymurgy*<sup>®</sup> welcomes letters, opinions, ideas, article queries and information in general from its readers. Correspondence and advertising inquiries should be directed to *Zymurgy*, PO Box 1679, Boulder, CO 80306-1679, (303) 447-0816, zymurgy@brewersassociation.org, www.homebrewersassociation.org. All material ©2017, American Homebrewers Association. No material may be reproduced without written permission from the AHA. Reg. U.S. Pat. & TM Off.

The opinions and views expressed in articles are not necessarily those of the American Homebrewers Association and its magazine, *Zymurgy*.



POSTMASTER:  
 Send address changes to:  
**Zymurgy**, 1327 Spruce Street;  
 Boulder, CO 80302.  
 Printed in the USA.



# A Bright Future

Last March, my wife and I spent a week in San Diego, where craft beer culture was every bit as delicious as the legends had foretold. We devoted one of our days to exploring Tijuana, and a memorable lunch of *tacos de chicharrón* and *enchiladas rojas* gave way to an even more memorable afternoon of sampling local craft beer.

Azteca Craft Brewing is in the central tourist zone, just off Avenida Revolución, but locating the brewery demands some persistence. The basement space is smaller than many garages, and the brew rig isn't much larger than many homebrew setups. Just getting there makes one thirsty.

After ordering a pint of IPA, I used my best broken Spanish to chat with owner Joel López Corona and his daughter and head brewer Karla López. The following is a translation of a follow-up email conversation I had with Karla.

### How long have you been a brewer?

I've brewed for three years, but I've been surrounded by beer my whole life and inherited the passion from my dad. Azteca Craft started four years ago. My dad was the brewer at first, and I was his assistant. But I have been brewing all of Azteca Craft's beer since 2015.

### Did you homebrew before brewing professionally?

You could say so because we started with 5-gallon (19-liter) equipment.

### How much beer do you brew per year?

We brew 27,360 liters (229.5 barrels) annually.

### What are your plans for the future of the brewery?

This year we acquired a 7-barrel (8.2-hectoliter) brewhouse and will install eight fermenters and open a tasting room and a new 300-square-meter (3,200-square-foot) brewery.



Karla Lopez, head brewer at Azteca Craft Brewing in Tijuana, takes a gravity reading.

### What is your favorite beer to brew? How about to drink?

To brew, honey porter with coconut and IPA. For drinking, I really like stouts, cream ale, and IPA.

Karla and Joel are excited to see craft beer succeed in Baja California and beyond, and like most of the more than 5,300 breweries in the United States, Azteca Craft Brewing started with homebrew-sized batches. And they have relied on *Zymurgy* and Brewers Publications titles like *How to Brew* for guidance.

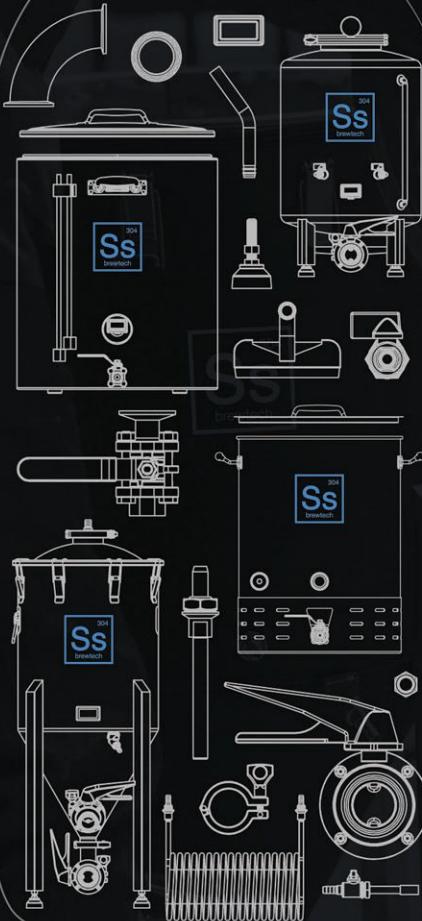
The AHA's website calls *Zymurgy* "the leading light for amateur brewers in North America and around the world." To keep that light burning brightly, we're working to make the magazine you love even better. Starting with this issue, all future *Zymurgy* recipes will be available online to AHA members. Just log on to HomebrewersAssociation.org and they're ripe for the picking. This is just the first of several enhancements that we hope will make it easier to brew with the recipes you find in each issue. Look for more in the not-too-distant future.

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

First Stainless Brew Bucket  
(Brew Bucket - 2013)



First Insulated Stainless Mash Tun  
(InfuSsion Mash Tun - 2014)



Pro Grade Fermentation at Home  
(Chronical BME - 2015)



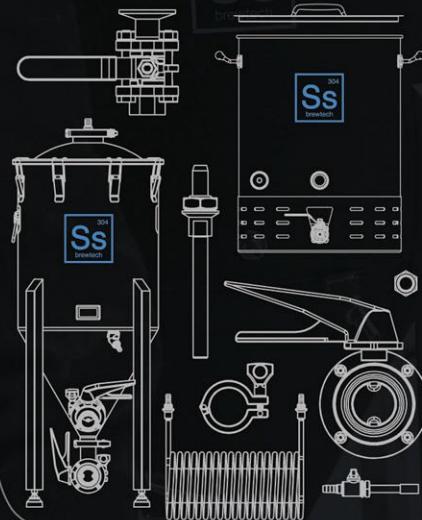
[www.SsBrewtech.com](http://www.SsBrewtech.com)

Industry Leading Conical Fermenter  
(Chronical - 2013)

First Homebrew Brite Tank  
(Ss Brite Tank - 2016)



First Kettle with Integrated Fire Box  
(Ss Brew Kettle BME - 2017)



**COLUMNS****1 | EDITOR'S DESK**

A Bright Future

By *Dave Carpenter***13 | FROM THE GLASS**

Big Brew Results

By *Gary Glass***89 | WORLD OF WORTS**

To Gotland for Gotlandsdricke

By *Charlie Papazian***96 | LAST DROP**

Never Mess with

Someone Else's Brew System

By *Amahl Turczyn***DEPARTMENTS****4 | BEEROSCOPE****19 | DEAR ZYMURGY****23 | DEAR PROFESSOR****27 | STYLE SPOTLIGHT****73 | WINNERS CIRCLE****76 | KUDOS / CALENDAR****81 | COMMERCIAL CALIBRATION****85 | HOMEBREW HOMECOMING****96 | ADVERTISER INDEX****FEATURES****34 | Best Beers in America**

Zymurgy readers have voted for their favorite beers in the country for 15 years, and for the first time since 2009, there's a new beer on top. Heeeeere, fishy, fishy, fishy!

By *Jill Redding and Amahl Turczyn***48 | Revisiting the Refractometer**

The refractometer has always been great for measuring original gravity. With these updated methods, it's also great for final gravity and everything in between.

By *Petr Novotny***Ultralight Homebrewing: A Study in Three Parts**Lack of time is the number one reason homebrewers cite for not brewing as often as they'd like to. In this three-part special feature, *Clint Cherepa, Chris Colby, and Matt Smith* encourage us to brew more beer with less time and fewer toys.**58 | Follow the Path to Minimalist Homebrewing****64 | Small Batch, Big Flavor, All Grain****68 | Two Hours to Five Gallons****Copa Cerveza 2016**

There's more to Mexican beer than Mexican lager. Brew up a chipotle porter or a pale ale while you read about Mexico's largest craft beer competition.

By *Matt Gilmore*To read this special, members-only online feature, go to [HomebrewersAssociation.org/ja17](http://HomebrewersAssociation.org/ja17)**QUICK RECIPE GUIDE**

Grodziskie .....	6	Brew-in-a-Bag Cranberry Ale .....	60
Smoked Habanero IPA .....	7	Oh Mama! American Pale Ale .....	61
Pisswasser Lite .....	14	Copper Ale .....	65
80 Shilling Scottish Ale .....	28	The Cure from Cork .....	66
Wee Heavy/Strong Scotch Ale .....	32	Kölsch .....	74
Bell's Two-Hearted Ale Clone .....	38	Sun Temple IPA .....	87
Sierra Nevada Celebration Ale Clone .....	42	Vello's Gotlandsdricke (All-Grain) .....	90
Lawson's Sip of Sunshine Clone .....	45	Vello's Gotlandsdricke (Partial-Mash) .....	92

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



## >> GET THERE!

### PILS & LOVE

Matt Brynildson and Vinnie Cilurzo have both gone on record saying that Birrificio Italiano's Tipopils provided inspiration for Firestone Walker Pivo Pils and Russian River STS Pils, respectively. For more than a decade, Birrificio Italiano has hosted Pils Pride, a celebration of modern craft Pilsner, at its brewpub northwest of Milan.

Now the legendary Italian brewery is bringing its Pilsner party to the United States with the first ever Pils & Love, to be held July 15 at Spring Point Ledge in South Portland, Maine. Oxbow Brewery hosts the event, which will feature more than 40 of the world's top producers of traditional Pilsner in view of the iconic Spring Point Ledge Lighthouse.

At press time, participating breweries included Oxbow Brewery, Birrificio Italiano, Banded Horn Brewing Co., Birra Elvo, Birrificio del Ducato, Birrificio Lariano, Bunker Brewing Co., Cambridge Brewing Co., DC Brau Brewing Co., Fair State Brewing Cooperative, Folksbier Brewery, Foundation Brewing Co., Firestone Walker Brewing Co., Gansteller Bräu, Jack's Abby Craft Lagers, Left Hand Brewing Co., Liquid Riot Bottling Co., Lost Nation Brewing, Mahr's Bräu, Notch Brewery & Tap Toom, North Coast Brewing Co., Russian River Brewing Co., Landbrauerei Schöenram, Sierra Nevada Brewing Co., Sly Fox Brewing Co., Smuttynose Brewing Co., Suarez Family Brewery, Temescal Brewing, Threes Brewing, Tired Hands Brewing Co., Microbrasserie Trou du diable, Two Roads Brewing Co., Urban Chestnut Brewing Co., The Veil Brewing Co., Victory Brewing Co., von Trapp Brewing, and Zero Gravity Craft Brewery.

Pils & Love takes place Saturday, July 15th, from 3 p.m. to 8 p.m. For more information and to buy tickets, go to [oxbowbeer.com](http://oxbowbeer.com).

#### July 8

##### **16th annual Monterey Beer Festival**

Monterey, CA

[montereybeerpfest.com](http://montereybeerpfest.com)

#### July 16

##### **4th annual BrüFrou**

Denver, CO

[brufrou.com](http://brufrou.com)

#### July 26–30

##### **30th annual Oregon Brewers Festival**

Portland, OR

[oregonbrewfest.com](http://oregonbrewfest.com)

#### July 28–30

##### **Toronto's Festival of Beer**

Toronto, ON

[beerfestival.ca](http://beerfestival.ca)

#### August 3–6

##### **22nd annual Mammoth Festival of Beers and Bluesapalooza**

Mammoth Lakes, CA

[mammothbluesbrewsfest.com](http://mammothbluesbrewsfest.com)

#### August 4–5

##### **Belgium Comes to Cooperstown**

Cooperstown, NY

[ommegang.com](http://ommegang.com)

#### August 5

##### **Mead Day**

Worldwide

[HomebrewersAssociation.org](http://HomebrewersAssociation.org)

#### August 8–12

##### **Great British Beer Festival**

Olympia, London, UK

[gbbf.org.uk](http://gbbf.org.uk)

#### August 10–12

##### **15th annual Bend Brewfest**

Bend, OR

[bendbrewfest.com](http://bendbrewfest.com)

#### August 16–20

##### **Michigan Homebrew Festival**

Camp Agawam, Lake Orion, MI

[mhfsite.com](http://mhfsite.com)

#### August 19

##### **Washington Beer Collaboration Festival**

Seattle, WA

[washingtonbeer.com](http://washingtonbeer.com)

For more craft brewing events, go to [CraftBeer.com](http://CraftBeer.com)

## >> CLUB NEWS

### CHESAPEAKE REAL ALE BREWING SOCIETY (CRABS) MAKES FIRST APPEARANCE AT D.C. BREWER'S BALL

By Rob Farrell, with photos by Joe O'Keefe

The Brewer's Ball is an annual event put on by the Beer Institute to benefit the Cystic Fibrosis Foundation. The event features more than 40 breweries and 30 restaurants and attracts 1,600 of Washington, D.C.'s top corporate and community leaders. CRABS member Brian Kaider, who does legal work for breweries, and whose wife works for the Foundation, joined the Brewer's Ball Steering Committee this year.

"It was just a natural fit," he explains. Brian had attended the event in the past, and he "discovered some great breweries, but there were no homebrewers. That didn't seem right."

At the committee's first meeting this past fall, Brian proposed that homebrewers

serve at the event. It had never been done before, but the idea was well received. After some discussion about whether it would be necessary to separate the homebrewers from the main floor, it was decided to put them side-by-side with the pros. Brian then contacted local clubs about signing up to serve.

When CRABS was contacted about participating, member Joel Gallihue took the lead. Joel does a lot of fundraising for cystic fibrosis research, as he has a nephew who suffers from the disease. CRABS president Joe O'Keefe threw his full support into the effort and even arranged for a charity auction donation of a homebrew starter kit. Joel negotiated six slots to fit the CRABS six-tap jockey box, but 10 brewers wanted to par-



The Brewer's Ball at the National Building Museum in Washington, D.C.

ticipate. So Joel went back and got a second table under the banner of the Free State Homebrew Club Guild, an organization of 16 Maryland homebrew clubs, of which

*Continued on page 6 >*

## >> BEER QUOTE

***"Beer does not make itself properly by itself. It takes an element of mystery and of things that no one can understand."***

—Fritz Maytag, Anchor Brewing Co



Zach Keim, Trevor Rose, Rob Farrell, and Joel Gallihue at the Brewer's Ball.

## >> YOU'VE GOTTA DRINK THIS

### CITRUS MISTRESS: HOP VALLEY BREWING, EUGENE, ORE.

The Citrus Mistress is a marvelous American-style IPA. This brew starts out with a light aroma of citrus and is a lovely golden color with a slightly off-white lacy head that lingers on the side of the glass. A slight initial excellent malt flavor is quickly replaced by pleasant hop bitterness. The flavor of grapefruit enters the scene late, but it accentuates the citrus notes of the beer. This is a wonderful easy-drinking beer that we would recommend.

Photo courtesy of Hop Valley Brewing

Reviewed by

Tom and Lars Vedvick (father and son)



If you've had a beer you just have to tell the world about, send your description, in 150 words or fewer, to [zymurgy@brewersassociation.org](mailto:zymurgy@brewersassociation.org).



Mark Gallihue and Bryn Hansen pour at the Free State Homebrew Club Guild table at the Brewer's Ball.

CRABS is a charter member. Maryland Homebrew, our local shop, lent us two dual-tap jockey boxes, and we were set.

CRABS regularly participates in charity events, and club members are always ready and willing to donate homebrewed beer to a good cause. Annual events that the club supports include Homebrew Extravaganza, a Baltimore Beer Week event founded by CRABS member Judy

Neff for the Baltimore Animal Rescue and Care Shelter (BARCS); Hometown Brew Down, supporting the Catonsville CO-OP, a member-owned market just outside of Baltimore offering local options for organic food; and the Free State Homebrew Club Guild Holiday Party, a multi-club homebrew event held at Heavy Seas Beer to raise funds for local charities. Being asked to participate in the Brewers Ball was a major honor for the club. It was



Jay Thorpe and Rob Farrell man the CRABS table at the Brewer's Ball.

our first chance to serve our homebrewed beer alongside some of the region's finest breweries and restaurants, an opportunity we could not pass up.

On March 4, 2017, 10 members of CRABS headed down to the National Building Museum (which also hosts the Brewers Association's SAVOR event) to share our homebrew and raise money for a cure for Cystic Fibrosis. We had a strong lineup of 10 beers: Ben Schwalb's coriander pale ale, Joel Gallihue's raspberry wheat ale, Joe O'Keefe's American wheat and rye ale, Rob Farrell's Czech amber lager, Zach Keim's Grodziskie, Jay Thorpe's smoked habanero IPA, Bryn Hansen's tangerine IPA, Frits Meijer's Belgian IPA, Trevor Rose's gin and tonic ale, and Mark Gallihue's hefeweizen.

The homebrews were popular with the crowd, and we were constantly fielding questions like "Where are your beers distributed?" and "Can we visit the brewery?" It seemed unbelievable to many that we couldn't sell our beer. We educated many curious guests and distributed quite a few club flyers at our table. Two other Maryland clubs served homebrew alongside us: Brewers United for Real Potables (BURP) and Frederick's Original Ale Makers (FOAM). Everyone had a great time, and most importantly, \$275,000 was raised for cystic fibrosis research. Serving homebrew at a swanky event like this was great exposure for our club and for the homebrewing hobby.

## Grodziskie

Recipe courtesy Zach Keim

**Batch Size:** 5.5 US gallons (20.8 L)

**Original Gravity:** 1.037 (9.2° P)

**Final Gravity:** 1.009 (2.3° P)

**Color:** 11 SRM

**Bitterness:** 30 IBU

**Alcohol:** 3.7% by volume

### MALTS

- 8 lb.** (3.63 kg) oak smoked wheat malt
- 1 oz.** (28 g) chocolate wheat malt

### HOPS

- 0.6 oz.** (17 g) Magnum, 12% a.a. @ 60 min

### YEAST

White Labs WLP036 Dusseldorf Alt Yeast or Wyeast 1007 German Ale

### BREWING NOTES

Mash grains at 148–150° F (64–66° C) for one hour. Mash out at 168° F (76° C), and sparge at 170° F (77° C). Boil for 60 minutes, adding hops as indicated above. Chill wort to 60° F (16° C) as quickly as possible, run off into a fermenter, pitch yeast, and oxygenate or aerate. After fermentation, transfer to secondary and cold condition for 14–21 days before packaging with 3 volumes (6 g/L) of CO<sub>2</sub>.

## SMOKED HABANERO IPA

Recipe courtesy Jay Thorpe

**Batch Size:** 5 US gallons (18.9 L)  
**Original Gravity:** 1.068 (16.5° P)  
@ 80% brewhouse efficiency

**Final Gravity:** 1.012 (3° P)  
**Color:** 10 SRM  
**Bitterness:** 55 IBU  
**Alcohol:** 7.4% by volume

### MALTS

**10 lb.** (4.54 kg) English pale malt  
**2 lb.** (907 g) CaraVienne malt

### HOPS

**2 oz.** (57 g) Cascade, 5.5% a.a. @ 60 min  
**1 oz.** (28 g) Mt. Hood, 6% a.a. @ 10 min  
**1 oz.** (28 g) Zythos, 10.9% a.a. @ flameout  
**2 oz.** (28 g) Citra, dry hop

### YEAST

White Labs WLP001 California Ale, Wyeast 1056 American Ale, or Fermentis Safale US-05 yeast

### ADDITIONAL ITEMS

4 habanero peppers, smoked with cherry wood, soaked in bourbon, and added to secondary.

### BREWING NOTES

Mash grains at 152° F (67° C) for one hour. Mash out at 168° F (76° C), and sparge at 170° F (77° C). Boil for 60 minutes, adding hops as indicated above. Chill wort to 65° F (18° C) as quickly as possible, run off into a fermenter, pitch yeast, and oxygenate or aerate. After fermentation, transfer to secondary, add dry hops and habanero peppers, and condition for 4–7 days before packaging with 2.6 volumes (5.2 g/L) of CO<sub>2</sub>.

### EXTRACT VERSION

Substitute pale malt with 9.5 lb. (4.3 kg) Maris Otter liquid malt extract. Decrease CaraVienne to 8 oz. (227 g) and steep in 155° F (68° C) reverse osmosis (RO) water for 30 minutes. Dissolve extract and top up to desired boil volume with RO water. Add hops and boil 60 minutes, proceeding as above.

## >> CULTURE

### PALM WINE: A WAY OF LIFE IN WEST AFRICA

By Noland Ryan Deaver

On a sweltering Sunday afternoon in the rural West African community of Bota, Benin, the midday sun drives villagers to rest beneath a vast, shaded expanse of palm trees. Work slows to a halt as people and livestock amble toward the cool relief of the forest, but these trees—short, scrubby, and unassuming—provide



A footpath leads to the small village of Bota.

The logo for Castle Malting features a circular emblem with a castle in the background, flanked by two golden wheat stalks. Below the emblem, the word "Castle" is written in a bold, serif font, and "Malting" is in a smaller, sans-serif font with a registered trademark symbol. The background of the entire advertisement is a green field of grass.

**PREMIUM-QUALITY MALTS**

**More than 70 types of Base and Specialty malts**

**ORGANIC MALTS**

[www.castlemalting.com](http://www.castlemalting.com)

The logo for Belgian Beer Culture features a circular emblem with "BELGIAN BEER" around the top and "Paradise" in the center, with a banner below it. To the right is the UNESCO Intangible Cultural Heritage of Humanity logo, which includes the UNESCO emblem and the text "Intangible Cultural Heritage of Humanity".

The top part of the image shows the "malt brew" app logo with "malt" in yellow and "brew" in white, along with download links for Google Play and the App Store. Below this is a photograph of a glass of beer with a thick head of foam, surrounded by hops and grain. The bottom part features the "BSG HandCraft" logo with a stylized orange triangle and the website "www.brewerssupplygroup.com".



The bright red fruit of the oil palm can be used as food or to produce a red cooking oil common throughout Benin.



Mississo explains how to prepare a palm tree and harvest its fermentable sap.



Palm juice slowly flows towards the exit hole (visible to the right), where it drips into a jug below.

much more than respite from the heat of the equatorial sun.

Nearby, the sour-sweet odor of fermenting palm sap permeates the air outside the small clay-and-concrete house where Mississo Hounssouguan produces palm wine on a small scale. Most of his wine is distilled into a moonshine locally known as *sodabi*, but some is reserved for immediate consumption. Like most men in his village, Mississo, who has lived his whole life in Bota, learned to make palm wine by watching and working with his father.

After exchanging formalities in a local dialect of Fon (the most widely spoken of the dozens of indigenous languages spoken in Benin), he switches to the country's official language: an articulate, rustic French. He almost shouts to be heard over the talk show blaring from his small Chinese television.

"I've always made palm wine," he explains. "Here, it doesn't matter how old you are. If you've got a little money, you can get started at any age to generate income for your family. I was ten years old when I started to make palm wine by myself."

Though rich in culture, Benin is one of the poorest countries on the planet and suffers from the same problems as many other developing nations. Disease, malnutrition, and poverty are common, and without the valuable mineral resources found in neighboring countries like Nigeria, development is slow. Consequently, there are

## VIRTUALLY EVERYTHING ON AND AROUND MISSISSO'S PROPERTY IS USED FOR PALM WINE PRODUCTION

few economic opportunities here, especially for women.

Although by no means a cure-all, a palm tree can provide products such as food, building materials, cooking oil, tools, kindling, and even soap. A quick tour of the village reveals a small, buzzing economy based around the trees, with women roasting bright red palm nuts over wood fires, men chopping felled branches for firewood, and children sweeping porches with palm fronds twice their size.

Virtually everything on and around Mississo's property is used for palm wine production, but to the untrained observer, the fermenters, tubing, and jugs are hardly discernible as such. It is only after Mississo offers a tour of his property that a clear picture of his process begins to emerge.

Beginning behind his home, the tour progresses into a slow trek through the bush on a narrow, twisting footpath. On the path, he encounters a small group of his friends who also ferment palm wine. With

no work to do in the strong, midday sun, they decide to join the tour. Eventually, Mississo and his friends stop near a clearing where several felled palm trees lie parallel to one another.

Squatting near the closest log, he peels back a piece of bark to reveal a hole he has carved into the wood. On one side of the shoebox-sized hole is a pulpy white mass of tissue, which leaks a thick, frothy sap. On the other side of the opening, Mississo has drilled a smaller hole through the bottom of the log, where the sap leaks into a plastic jug positioned below. As the sap spreads towards the exit hole, it contacts exposed wood and the insects that have gathered there. Here, the juice is naturally inoculated with the yeasts and bacteria that will eventually ferment the sap into palm wine.

Mississo smiles and says, "The hardest part of the process is preparing the tree. You have to cut it down by hand, remove the branches, and then prepare the holes for the juice. This tree here, it isn't too big, so it's easier to cut down. Bigger trees are harder to prepare, but they produce more juice. So, you have to make a choice."

A single tree, once felled, can produce juice for a month, and a single batch for Mississo requires close to 250 liters (66 gallons) of juice. Every day, between 5 and 10 liters (1.3 to 2.6 gallons) of fermentable liquid collects in each jug, and a few times per day, he consolidates this juice in the plastic rain barrel that serves

# ENJOY THE COLORS OF SUMMER



ONE BEER IN A VARIETY  
OF SUMMER COLORS.

From high noon sunshine to blazing sunsets to starlit cobalt nights, capture the season's vibrant moments and colors with the bright, crisp flavor of Summer Ale.

#TAKEMEWITHYOU





A 250-liter rain barrel is a typical fermenter in Benin.



A blow-off valve. Mississo must run a length of hose between this copper tubing and his fermenter to allow gas to escape.



In this clear-cut swath of forest near Mississo's home, at least 70 downed trees produce fermentable sap to be sold in surrounding communities.

as his fermenter. By adding fresh juice each day, Mississo maintains a healthy population of *Saccharomyces* and avoids an accumulation of the acetic acid bacteria that would otherwise diminish the alcohol content and flavor of his product.

Fermentation takes approximately one month with this method, but this wine is destined for the still. In contrast, wine prepared for immediate consumption ferments only a few days before being collected into a jug and transported for sale. The finished wine contains between 4 and 6 percent ABV and must be consumed quickly to avoid the detrimental effects of acetic acid bacteria.

Mississo's fermenter sits in the shade below a length of copper tubing that spans the entire roof. He explains how he improvises a blow-off tube by running a length of rubber hose between an opening in the fermenter and the mouth of the copper tubing.

He further clarifies, "If I don't connect the hose to the barrel, it's like this," and wearing an exaggerated expression, he pantomimes wrapping his arms around a barrel and slowly spreads them to simulate swelling from the pressure of carbon dioxide released during fermentation.

Back in his courtyard, Mississo offers to share some of the finished wine. He produces a small metal bowl and pours himself a portion first. The wine is cloudy, and several dead insects float lazily on its surface. He drinks his bowl in a single swig, making sure to pour the last few drops on

the ground for his ancestors. He then fills a bowl for each of his guests, who follow suit by finishing their portions in a single drink.

At first, the flavor and texture are nearly identical to those of coconut water: sweet and silky. The initial flavor then gives way to a mild lactic tartness reminiscent of sourdough and yogurt—evidence of the activity of lactic acid bacteria. Finally, a lingering sweetness mutes the acidity. It is altogether pleasant.

Just over a kilometer (0.6 mile) away from Mississo's house, another villager has purchased several hectares of palm forest, which he and his sons have clear-cut. There are dozens of downed trees, and the bleak landscape is punctuated by the bright blue oil jugs used to collect fermentable palm juice. Occasionally, men on bicycles come to



Here, the author enjoys a bowl of finished palm wine.

collect and transport the liquid to surrounding communities, where it is purchased and fermented by villagers who then drink it or, more frequently, distill the finished wine to increase its value and shelf life.

At Mississo's house, palm wine is not nearly as lucrative. He sits and cuts fresh limes to squeeze into a small glass of *sodabi*, and between drinks, he explains that his income comes primarily from farming and fishing. Pointing toward the small stand of palms behind his house, Mississo explains that the hardest part of making palm wine is dealing with seasonal variations in climate. He rents his property, and each time he fells a tree to produce a batch of palm wine, he must pay his landlord. Since there is little work for farmers during southern Benin's four-and-a-half-month dry season, it is often impossible to find enough money to fund his next batch.

As the sun finally begins to dip toward the horizon, the afternoon heat dissipates. A small herd of goats meanders into Mississo's courtyard. They begin sifting through the garbage that lines the fence where his fishing nets have been hung to dry. Mississo regards the animals briefly and takes a final sip of his drink.

"It's hard," he says with a sigh. "I work a lot. I have three jobs, but palm wine—that's my favorite."

**Noland Ryan Deaver is a volunteer working on food security and economic development in rural Benin.**



# LONELY PLANET'S GLOBAL BEER TOUR

A guide to beer tasting at the world's best breweries

---



Explore the vibrant world of craft beer with Lonely Planet's **experts**. We've selected the best breweries around the globe, so thirsty travelers can visit in all countries across five continents, including the USA. The Reader will meet the brewer and get a taste of their authentic craft – with details on how to make your own beers and tasting rooms get you to try.

- We've included local places of interest to create complete itineraries.
- Contributors include published beer authors.

**TITLE:** Lonely Planet's Global Beer Tour

**AUTHOR:** Lonely Planet

**ISBN:** 978-1-78657-749-5

**PRICE:** \$39.99

**FORMAT:** Hardback

**TRIM:** 9" x 12"

**PAGE COUNT:** 224

**PUB DATE:** May 2017

---

**CONTACT & ORDERING**

**SALES:** Lonely Planet, 1250 24th Street, Oakland, CA 94607  
TEL: (800) 477-8665 FAX: (510) 893-8563 EMAIL: [customerservice@lonelyplanet.com](mailto:customerservice@lonelyplanet.com)



ut where? The US is a continent-size country, and where you should travel depends on what you want to try. You can find outstanding examples of every style at everywhere, certain regions have their own specialties. In the northeast, you'll find the extremely often cloudy beers known as New England IPAs—joined Heady Topper from The Alchemist or Sunshine from Lawson's Finest Liquids. In Oregon, you'll find a number of rich and intense Black IPAs, aka Deschutes Dark Ale, such as Hop in the Dark CDA from Deschutes or Dad's Little Helper from Rogue. Perhaps due to the heat, Florida developed a native sour fruit beer

culture, led by breweries Cigar City, Funky Buddha and Cycle Brewing. In Southern California, you'll find the beer cycle that made aggressively bitter brews such as West Coast from Green Flash and Arrogant Bastard from Stone Brewing available.

The American craft scene is so nowadays that just about every city or town has great beer options, from brewpubs and micros to specialty bars and beer-themed restaurants. And if you think things are good in the US today, with all-time-high levels of total breweries, just wait a while: thousands of new craft breweries are expected to open in the next few years.

**TOP 5 BEERS**

**BAR TALK - GREG KOCH**  
With aromatic hop bitterness, the West Coast IPA has become one of the leading craft beer styles around the world today

TOP 5  
BEEF

- Lord Sonachi Brooklyn Brewery
  - Kentucky Breakfast Stout Founders Brewing Company
  - Go to IPA Green Flash Brewing Company
  - Zombie Dust 3 Floyds Brewing Company
  - La Roja Jolly Pumpkin Artisan Ales



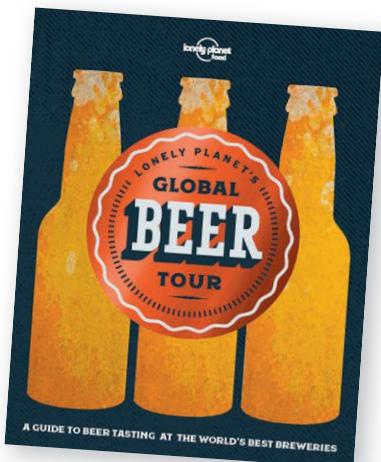
>> GREAT

# PRODUCT: STANLEY CLASSIC VACUUM GROWER

Filling a growler can be frustrating. First you have to watch precious beer go down the drain at the bar—seriously, folks: clean, balance, and chill those draught lines!—and then there's the dilemma of pouring the first pint. Go too fast, and it's foam city. Too slow, and beer dribbles down the side like a cruel joke.

Stanley has taken the trusty growler and applied more than a century's experience keeping your granddad's coffee just the right temperature. These growlers are easy to pour with just one hand, eliminating awkward kitchen sink gymnastics. And the vacuum-insulated 18/8 stainless steel keeps beer cold for up to 24 hours.

Available in 32-ounce Grumbler (\$40) and 64-ounce Growler (\$55) models at [stanley-pmi.com](http://stanley-pmi.com) and retailers nationwide.



**PERFECTING  
OUR  
CRAFT  
SO YOU CAN  
PERFECT  
YOURS**

**STOP BY AND  
SEE US AT  
BOOTH 1009!**



**DICKIES.COM**



**BIA**  
BREWERS  
ASSOCIATION<sup>®</sup>  
ASSOCIATE MEMBER

By Gary Glass



# Big Brew Results

May 6th marked the 20th anniversary of the AHA's Big Brew event honoring National Homebrew Day. This year's Big Brew was another huge success with 7,601 homebrewers at 384 sites, brewing 19,222 gallons of homebrew. In 2017, there were sites in 49 US states and 11 countries around the globe.

Since Big Brew is truly a worldwide affair now, the AHA published a Spanish-language version of the Big Brew website and recipes for the second straight year. The AHA is also publishing a Spanish translation of *Zymurgy* magazine for our Spanish-speaking members available on [HomebrewersAssociation.org](http://HomebrewersAssociation.org).



## Mead Day

The AHA's next event, Mead Day, will be held Saturday, August 5. Mead, which many believe to be humankind's first fermented beverage, is not only tasty, but surprisingly easy to make. If you're a mead lover, be sure to put Mead Day on your calendar. If you've never made mead, August 5 is your day to give it a try. Check out the events section of [HomebrewersAssociation.org](http://HomebrewersAssociation.org) for more details.

**Homebrew Con 2018**

This issue of *Zymurgy* mails just after the 2017 Homebrew Con in Minneapolis comes to a close. We'll have more extensive Homebrew Con coverage in the Sept/Oct issue, but we're already thinking of next year's conference. In 2018, Homebrew Con heads to Portland, Ore. for the first time in 20 years. You will not want to miss this opportunity to join thousands of fellow homebrewers in one of the most respected beer destinations in the world. I hope to see you there!



Clockwise from top: SOMOS MOSTO (We are Wort), with members from Buenos Aires, Mendoza, Neuquen, Calafate, and Rio Negro; More than 50 homebrewers shared wort from Fisher Brewing Company's 10-barrel brewhouse in the first Utah Big Brew co-hosted with local homebrew store The Beer Nut and homebrew clubs The Lauter Day Brewers and the Hop Bombshells; Aaron Ritchie brewing up a clone of Brooklyn Brewery's Sorachi Ace Saison in Williston, Vt. with the Green Mountain Mashers.

## Homebrew Club Insurance

Did you know that the AHA offers AHA-registered homebrew clubs an affordable general and liquor liability insurance option, as well as insurance for directors and officers? For the past several years, the AHA has worked with West's Insurance to provide this much needed coverage for clubs. West's general and liquor liability coverage for clubs costs just \$3.50 per club member. The deadline for enrolling in the homebrew club insurance program is September 1.

See [www.westinsurance.com/homebrewers](http://www.westinsurance.com/homebrewers) for details.

The AHA receives no compensation from West's, as we wish to keep this insurance option as affordable to clubs as possible. However, this year, we've decided to create an incentive for clubs to get their members to join the AHA by offering to reimburse clubs' general and liquor liability insurance coverage premiums if we have 75 percent of the club's membership, as reported to West's

# PISSWASSER LITE

Recipe courtesy Marie-Annick Scott, Edmonton Homebrewers Guild

ALES Open Homebrewer of the Year Marie-Annick Scott shares one of her six award-winning recipes from the 2017 ALES Open—Canada's largest homebrew competition—which was held April 17 to 22 in Regina, SK.

"I made this because one of my brothers can't drink craft beers," says Marie-Annick. "It's a lot more work than most homebrewers would be willing to put in for what you get."

This recipe is brewed using a process similar to that used by large breweries. You'll brew a strong lager of 8% ABV, which is diluted to 4% ABV at packaging. This dilution process "minimizes the yeast flavors that you would get from fermenting the full batch volume and will give you that sought-after 'flavorlessness,'" Marie-Annick notes. A long, multi-step mash program produces the highly fermentable wort necessary to accurately brew this style.

**Batch Size:** 5.5 US gallons (20.8 L) before dilution

11 US gallons (41.6 L) after dilution

**Original Gravity:** 1.070 (16.9° P) before dilution

**Final Gravity:** 1.011 (2.6° P) before dilution

**Color:** 2 SRM

**Bitterness:** 6 IBU

**Alcohol:** 4% by volume

## MALTS

**8 lb.** 6-row malted barley

**6.8 lb.** rice flakes

## HOPS

**0.5 oz.** (14 g) Willamette, 5.5% a.a. @ 60 min

**0.13 oz.** (4 g) Cascade, 5.5% a.a. @ 60 min

## YEAST

Wyeast 2035 American Lager

## WATER

Decarbonated Munich water profile

## ADDITIONAL ITEMS

**1** Whirlfloc tablet @ 15 min

**1/4 tsp.** yeast nutrient @ 15 min

Bentonite and Polyclar for fining post-fermentation

## BREWING NOTES

Mash in at 100° F (38° C) and hold 20 minutes for an acid rest. Raise mash temperature to 122° F (50° C) and hold for a 30-minute protein rest.

Separate mash into thick and thin parts. Raise the temperature of the thick mash to 156° F (69° C), hold for 15 minutes, and then add back to the thin mash. This gives alpha amylase enzymes a chance to break down starches without denaturing the beta amylase enzymes in the thin mash. Raise the temperature of the recombined mash to 146° F (63° C) and hold for 2 hours. Mash out and sparge with enough water to achieve a pre-boil gravity of 1.060.

Boil for one hour, or until wort gravity reaches 1.070, adding hops, Whirlfloc, and yeast nutrient at the indicated times. Chill wort and transfer to a carboy. Wait 15 minutes for the trub to settle out and then transfer again. Oxygenate for 2 minutes and pitch yeast.

Ferment at 50° F (10° C) until kräusen falls, then raise temperature for a diacetyl rest until terminal gravity is reached. Cool to 14° F (-10° C) and hold for 12 hours to allow yeast to flocculate and chill haze to appear before fining with bentonite. Rack and repeat with Polyclar.

You now have approximately 5.5 gal. (20.8 L) of beer at 8% ABV. Boil another 5.5 gal. (20.8 L) of reverse osmosis water for at least 10 minutes to eliminate most of the dissolved oxygen in the water. Chill the water as quickly as possible to avoid oxygen pickup, and then rack your high-gravity beer on to the deoxygenated water. Force carbonate to 2.5 volumes (5 g/L) of CO<sub>2</sub>.

Insurance, listed as members of the AHA in our database. AHA members can update their club membership status by logging into HomebrewersAssociation.org and clicking MY ACCOUNT at the top of the page.

## ALES Competition

This past April, I had the privilege of judging at the 24th annual ALES Open competition. For many years, the ALES Open, organized by the Ale & Lager Enthusiasts of Saskatchewan (ALES) homebrew club based in Regina, SK, has been the largest homebrew competition in Canada. The competition takes place in



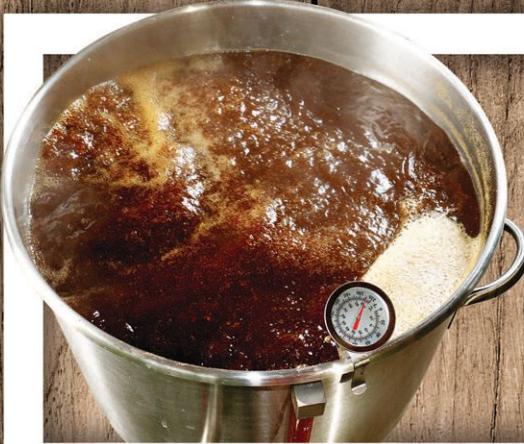
the venerable Bushwakker brewpub—the oldest brewpub in Saskatchewan—which was founded by one of the original club members, Bev Robertson, in 1991.

This year's competition had more than 500 entries, which were judged over

the course of a week. Between judge sessions, the Beer Judge Certification Program's (BJCP) north representative Brian Joas and education and training director Bruce Buerger held Q&A sessions with the judges and stewards. Brian and Bruce also gave a brief presentation during the awards ceremony, as did I.

The quality of entries was quite good. I had the best homebrewed American light lager I've ever encountered as a judge. The gold medal winner of that beer was Marie-Annick Scott of the

# CLEAN BEER



# STARTS HERE

Star San | Saniclean | IO Star | B.S. Remover | 10 % PHOS Acid  
PBW | 5.2 pH Stabilizer | Super Moss HB | Defoamer 105 | LLC



**Five Star Chemicals  
& Supply, Inc.**

[www.fivestarchemicals.com](http://www.fivestarchemicals.com)  
[support@fivestarchemicals.com](mailto:support@fivestarchemicals.com)



[facebook.com/FiveStarChemicals](https://facebook.com/FiveStarChemicals)

Find Five Star Products At Your Local Homebrew Store

# GET BREWING FOR ONLY

# \$269<sup>98</sup>

## KETTLE BURNER FERMENTING KIT

**ANVIL**  
BREWING EQUIPMENT®



[ANVILBREWING.COM](http://ANVILBREWING.COM)



[FB.COM/ANVILBREWINGEQUIPMENT](https://FB.COM/ANVILBREWINGEQUIPMENT)



@ANVILBREWING



[A BLICHHAMM ENGINEERING COMPANY](#)

Edmonton Homebrewers Guild, who took a total of six medals, including four golds, on her way to being crowned the ALES Open Homebrewer of the Year. Check out Marie-Annick's award-winning light lager recipe on page 14 of this issue.

Many thanks to ALES club co-president Kevin Federko for inviting me to participate and helping with the travel costs for me to get there. I really enjoyed meeting the talented brewers and judges, both local and from as far away as Winnipeg, MB and Victoria, BC.

### Legislative Update

There are a pair of homebrew bills in the North Carolina legislature that the AHA is supporting. The North Carolina Craft Brewers Guild is pushing House Bill 500, a comprehensive alcohol bill, which includes a section on homebrewing that would update the existing law to explicitly allow for homebrew events and competitions by mirroring the federal homebrew law. Dustin Canestorp of the Beer Army Foundation is leading the charge on Senate Bill 604, which if passed would expressly allow homebrew to be served at competitions and festivals.

The AHA is also supporting an effort in Ohio, led by AHA member Elmer "Goose" Steingass, to draft a bill expressly allowing homebrew to be served at club meetings, competitions, and events like the AHA Homebrew Con. Currently, Ohio does not have a homebrew law, though Ohio Liquor Control has traditionally defaulted to federal law for matters involving homebrew.

Earlier this year, the AHA supported Nebraska homebrewers who were pushing a bill to allow for the transport of homebrew for club meetings and events. Unfortunately, that bill died in the General Affairs Committee of the Nebraska legislature.

Until next time, happy brewing!

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





# uKeg™

## Pressurized Growler



Designed In Portland, OR  
[WWW.GROWLERWERKS.COM](http://WWW.GROWLERWERKS.COM)



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



## Ready When You Are.

We understand what it is like to start a brew business. You're busy brewing beer, attending festivals, gaining distribution, building a fan base, and working towards a brewery space. Suddenly, you need a tap handle. Yesterday.

Quick, easy and flexible, our Ready-Made catalog offers handles in various shapes, sizes and materials to get you started or fill a gap. Customizable options available to help your beer stand out as you grow. No minimums.

Shop: [taphandles.com/ready-made](http://taphandles.com/ready-made)

Have questions? Need something more customized?  
Contact us at **+1 206.462.6800** or [sales@taphandles.com](mailto:sales@taphandles.com)

MAKE  
THE BEST CHOICE  
FOR YOUR BEER!



 THE OBVIOUS CHOICE FOR BEVERAGE FERMENTATION

Powered by Lesaffre, one of the world's largest yeast and yeast derivatives manufacturer, we offer you the highest quality standard of products for beer manufacturing. Through a dedicated range of active dry yeasts and fermentation aids, we deliver innovative solutions to give you the ability to create the beer you dream about.



[www.fermentis.com](http://www.fermentis.com)

 **Fermentis**  
LESAFFRE FOR BEVERAGES

By Our Readers

## Gear in Gear



Dear Zymurgy,

I'm a longtime member and longer reader of Zymurgy. I am also a big car nut. The shifter knob as a beer tap looks great on the cover of the Jan/Feb 2017 issue. Can you please let me know the company that makes them? I have made my own taps before, but they aren't nearly as nice.

Thanks,

Eric Miller

South Orange, N.J.

**Editor-in-chief Dave Carpenter responds:**

Hi, Eric, I connected with AHA member Conner Macleod, whose bar we featured on the cover of that issue. He says, "The shifter knob was out of a 2007 Subaru WRX STI, and the threads actually matched with no modification on both my standard and Intertap faucets."

We ran some internet searches here at the AHA, and faucet handle internal threads are standardized to 3/8"-16 UNC in the United States and M10x1.5mm in Europe. These also happen to be common thread patterns for shifter knobs in both domestic and imported vehicles, so you shouldn't have too much difficulty matching one up to your faucets.



Dear Zymurgy,

Here is something I put together that some people might find interesting. It's a triple Randall with valves on each chamber so you can adjust the flow through each and tailor the infusion. It uses aluminum and Velcro in a spoke arrangement for easy disassembly. My personal favorite is to run a heavy stout through a Randall of peppers, s'mores ingredients, and coffee. These pictures were taken at VisionQuest Brewery in Boulder, Colo.

Cheers,

Stuart West

Austin, Texas

## Win Some, Lose Some

Dear *Zymurgy*,

I really like the detailed sidebar discussions about water for the style articles in the May/June 2017 issue with the summer recipes. Water is such an important part of these recipes. Please keep it up!

Jeff May

Wort City Brewers  
Clayton, N.C.

Dear *Zymurgy*,

I believe that there is an error in the recipe for The Duke English IPA recipe that you published in the Sept/Oct 2016 issue. It shows a total of 16.5 pounds of grain, including 12.75 pounds of Maris Otter. The recipe shows an OG of 1.063 for an 11-gallon batch. This would only be possible if conversion was higher than 100 percent. I believe that the Maris Otter should be 21 pounds. This would bring the OG, IBU, SRM, and ABV values specified in the recipe in agreement assuming 72% efficiency. I hope there are no other errors in the recipe that I should account for.

Tim Reasonover  
Paradise, Calif.

### **Editor-in-chief Dave Carpenter responds:**

*It looks like there was, indeed, a misprint—thanks for letting us know. We aim to publish accurate recipes, of course, but errors do work their way in from time to time despite our best efforts. We would never intentionally mislead our readers!*

*I went back and ran the numbers on the recipe, and there is, indeed, a typo in the Maris Otter quantity in that recipe. It should have been 22.75 lb. (10.3 kg) at 70 percent total efficiency. With your slightly higher efficiency of 72 percent, 21 lb. (9.5 kg) is probably about right.*

*I always recommend running new recipes (from Zymurgy, another magazine, the internet, your club, your best friend, and other sources) through a brewing calculator because every brewer's equipment and processes are a little different. Even a 100-percent accurate recipe may require some tweaking to make it work with your individual approach.*



## Brew Dogs

Dear *Zymurgy*,

My wife Ashley and I had to say goodbye to Butters T. Doggie at the beginning of the year. This weekend was our first brew day without him keeping an eye on the mash for us. Homebrewing just isn't the same without Butters.

Andy Sparhawk  
Arvada, Colo.

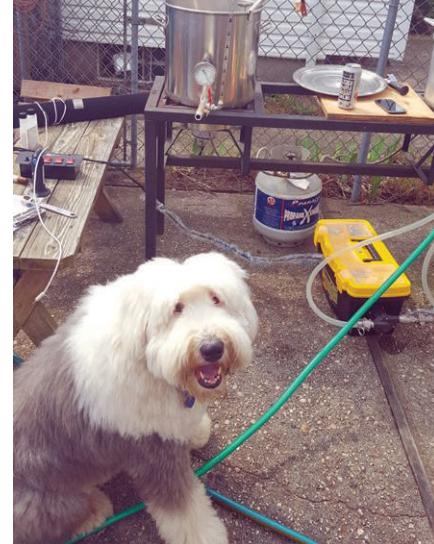


Dear *Zymurgy*,

I thought I'd submit this image of my assistant brewer who took it upon herself to clean out my mash tun. Molly is a rescued dachshund mix who has been by my side at every brew day for the last year, even on the first hour of her first day in our home.

As a side note, she is terrible at cleaning the corners of a mash tun.

Jim Dore  
Overland Park, Kan.



Dear *Zymurgy*,

This is my brew buddy Bode. He is smiling because he knows he is going to have spent grain cookies soon.

Kyle Schirmer  
Selden, N.Y.



Dear *Zymurgy*,

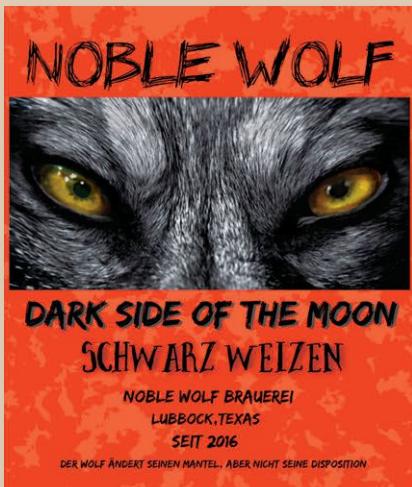
This is my brew dog Emma, a four-year-old West Highland white terrier. She's keeping an eye on me as we celebrate the Patriots win while brewing a New England IPA.

Cheers,  
Blair Mathews  
Auckland, New Zealand

**Send your Dear Zymurgy letters to [zymurgy@brewersassociation.org](mailto: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](http://homebrewersassociation.org/magazine/submit-bottle-label).**

## READER-SUBMITTED HOMEBREW LABELS



This is the label for my Noble Wolf beer. My German roots run deep! The name is an ode to my grandfather, Adolf Haseloff. When you translate his name from German to English it means "noble wolf." I share this same name as well.

I have been brewing for a couple of years now and strictly stick to German-style beers. I primarily do partial mashes, but I just upgraded my equipment to begin all-grain. This is my latest brew, which is a black hefeweizen—a cross between schwarzbier and hefeweizen. At the bottom is our motto in German, which states, "A wolf may change his coat, but never his disposition."

Shawn Adolf Haseloff  
Hope Brew Crew  
Lubbock, Texas

I have been brewing all-grain for about three years now and recently upgraded to a 20-gallon (75.7-liter) Spike system. I have two 14-gallon (53-liter) Ss Brewtech conicals, a four-tap kegerator, and my own can seamer. I try to brew at least once a month and share my beer with friends, neighbors, and relatives. When I started, people kept asking me what I called my brewery. I had not given much thought to naming it, so I went with the name of our neighborhood: Kraft Farm seemed fitting for craft beer.

Joe Smith  
Wootown Brewers  
Jarrettsville, Md.



My son Alec designed this label for Father's Day 2016. I've been homebrewing for six years. I brew all-grain using organic two-row pale malt from Washington state that I buy from Eel River Brewing in Scotia, Calif. (America's first certified organic brewery). Most of the rest of my ingredients come from my local brew store, Humboldt Beer Works. My latest recipe is an extra pale ale using a specialty hop called Gargoyle, which I get from a small farm in Oregon.

I am a member of the Humboldt Homebrewers club. We are a nonprofit organization affiliated with The Ink People's DreamMaker project, which grants money to artists for supplies and workspaces. We host a number of fundraisers, and last year we raised over \$2,000.

Thank you, AHA! We are all so grateful for all you do for the homebrewing community.

Cheers,  
Andrew Perron  
Humboldt Homebrewers Club  
Arcata, Calif.



# Fast FREE Shipping

(Lower 48 only, please, and not big things like wine presses.)



**Maryland Homebrew** is your complete source for homebrew supplies for beer, wine, mead, cider, cheese, spirits and much more.

Our well-stocked, warehouse-style store is conveniently located in central Maryland.

You'll find freezers full of hops, refrigerators full of liquid and dry yeast, shelves upon shelves of brewing kits and ingredients, an entire room dedicated to malts, wine kits, fruit presses for rent, kegs, kettles, brewing hardware, burners ....

### If you need it, we've got it.

Our friendly staff loves to answer questions and help you with your own homebrewing adventure. We also offer beginner and intermediate classes.

[Marylandhomebrew.com](http://Marylandhomebrew.com)

### The difference is service

**6770 Oak Hall Ln.  
Suite #108  
Columbia, MD 21045  
(888)-BREW-NOW**

# 3 Gallons of Affordable, Delicious Brew

Only  
**\$49.99**

Perfect for 1 & 2  
Gallon Batches

Stand  
Included

Yeast  
Harvesting

**FASTFERMENT™**

## Features & Benefits

- First 3G Conical Fermenter with Yeast Harvesting using Mason Jars
- Built on the Gold Medal Winning Design of the 7.9G FastFerment
- Most Accessories & Parts of 7.9G & 14G are Compatible with the 3G FastFerment

- Perfect for Splitting 5G Batches for Testing
- Guaranteed Consistent Batches
- Primary & Secondary Fermentation in the Same Container
- No Transferring & No Racking - 80% Less Work



7.9G FastFement

14G FastFement

FastRack12 & FastRack24  
FastWashers

**FASTBREWING**  
& WineMaking

[www.FastBrewing.com](http://www.FastBrewing.com)

By Professor Surfeit



# Water You Worried About?

Dear Professor,

Regarding the question in the March/April 2017 Zymurgy from a brewer who started noticing plastic character in his beer, you covered a handful of possible causes, but there's one other rather likely cause that's mentioned in the water article in the very same issue: chloramination. If you start with tap water, you should check to see whether your local water treatment plant has recently switched from chlorination to chloramination. If so, just refer him to the water article on how to deal with chloramine (it's not easy, though).

Dick Dunn

Hygiene, Colo.

P.S. Professor, say hi to Charlie for me!

Hello Dick,

*Great to hear from you again. Your contributions as a member for more than three decades are valued. Keep on enjoying great fermentations.*

The Professor, Hb.D.

## Another Water Observation

Dear Professor,

Thanks for all the great advice in your columns. Helping so many people make better beer makes the world a better place. I wanted to contribute more to your advice to James Richardson from Houston about those pesky phenolic, vinyl traits creeping into brews (March/April 2017).

I had the same problem and wasted a lot of otherwise good brews and time obsessing over sanitation until someone explained chloramine to me. No doubt, you're aware a growing number of water treatment plants (including Houston's and mine in Minneapolis) are converting or have converted to chloramine from



chlorine. My recent Minneapolis water report shows a 2015 average of 3.2 parts per million (ppm), which is more than enough to warrant treating our brewing water with Campden tablets (potassium metabisulfite).

Houston's 2015 water report shows levels averaging 2.1 ppm, but as high as 4.2 ppm during that year. Maybe James should give Campden tablets a try if he hasn't already. It's a surprisingly simple and cheap solution.

Pete Bennet

Golden Valley, Minn.

Yo Pete,

*Thanks for the added insight. That will teach me to be a bit more thorough next time.*

Forever,

The Professor, Hb.D.

## Paradigm Shift and Double Dry Hopping

Dear Professor,

I've been a homebrewer since 1978. Hey! That's almost as long as our Armenian friend Charlie Papazian, yes? Anyway,

when I think about hopping schedules for my homebrews, I recite this mantra:

*Hop bittering compounds are not wort soluble. One needs to boil bittering hops for an hour to extract these compounds.*

*Hop flavor compounds are not very wort soluble either. One needs to boil flavor hops for about 15 minutes, up to about 30 minutes, to extract these compounds.*

*Hop aroma compounds are very soluble in boiling wort. Any more than five minutes in the boil and these compounds flash off in the steam. That's why many brewers dry hop their wort.*

I've read in Zymurgy over the past several years that some brewers add a mega addition of hops during the last 10 to 20 minutes of wort boil for the flavor/aroma hop addition. Does this work? It must.

The next beer I brew will be a mahogany ESB. I'll add my 3 ounces (85 g) of Horizon or Magnum hops—I brew in 10-gallon

You asked for it...

We delivered.

The TrailKeg  
**GALLON**

PREORDER NOW!



GREAT BEER. GREAT PLACES.

Visit [TrailKeg.com](http://TrailKeg.com)  
for updates and to learn more



(3.79 L) lengths—and boil for two hours or so. Then I'll add 12 ounces (340 g) of East Kent Golding hops and boil for 10 minutes to try out this concept. What do you think?

Shnorhakalutyun in advance,  
Christopher Cape  
Chester, N.J.

Greetings Christopher,  
Shnorhakalutyun to you, too. I think there's some secret handshake associated with this salutation?

You are on the right track indeed. I'm beginning to think that 5 to 20 minutes is my max for infusing hop flavor character. And to be sure about aroma preservation, lately I've been turning off my boil and adding those aroma hops to steep immediately preceding the chilling out process.

In addition, I've been dry hopping when racking from primary to secondary. With lagers, the hops might remain for four to eight weeks; with ales, two to three weeks. Then five to seven days before kegging (or bottling), I add another dose of dry hops. Why? Because there is usually active yeast still in suspension when you rack from primary. That yeast digests some of the hop compounds and gives you different results than if you dry hop after the beer has cleared (five to seven days before packaging). I want the complexity of it all, so I double dry hop. It works nicely! Actually, it's a thing of beauty.

One last and important thought here. You outline, "Hop bittering compounds are not wort soluble. One needs to boil bittering hops for an hour to extract these compounds . . ." TRUE, but there are other hop bittering compounds that are contributed during both flavor hopping and dry hopping. These are not measurable as bittering units, but they are certainly perceived. And the perception depends on body, alcohol, malt base, temperature, and other factors. So, fortunately for us and all homebrewers, the mysteries of brewing continue to inspire us to learn more.

It's a big world of beer,  
The Professor, Hb.D.

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



## Keep your beer safe & hygienic



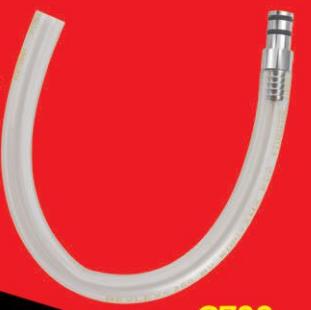
### PART # C545 Hygiene plug

(Fits almost all beer tap types)  
Helps keep beer taps clean.  
Protects taps from fruit flies and contamination when not in use.  
Eliminates the time and waste of wrapping beer taps overnight, as required by health codes.  
Stainless Steel 304 brush wire for long life.



### PART # C708 JUG -GROWLER FILLER

When jugs won't fit under the faucet, this apparatus allows beer to be filled from the bottom up, generating less foam. Perfect for filling jugs or growlers with beer. One end fits over your beer faucet and the other end goes into your growler



To know more visit our website  
[www.kromedispense.com](http://www.kromedispense.com)



[info@kromedispense.com](mailto:info@kromedispense.com)

**krome** dispense<sup>®</sup>  
A VIKING Group Company



CELEBRATING  
**30 YEARS**  
OF CREATING PREMIUM LIQUID YEAST  
AND FERMENTATION PRODUCTS

Wyeast altered the course of brewing history in 1986 when we introduced the Wyeast Culture Collection™. We provide the industry with the freshest quality products for beer, cider, wine, and more. Professionals and home enthusiasts alike have the latitude to brew their best and be part of the thriving craft beverage community.

Explore our strains at:

**[WYEASTLAB.COM](http://WYEASTLAB.COM)**

By Amahl Turczyn

# Scottish Ales

**S**cottish and Scotch ales are malty, deceptively complex beers brewed from what has traditionally been a very simple recipe. Local ingredients and conditions shaped the beers that would come to be recognized as Scottish ales. These beers have always showcased plentiful high-quality barley and excellent brewing water, and a cool climate meant long, cool fermentations. In fact, Scottish ales are widely considered akin to German ales, with a lager-like smoothness that reflects cool fermentation temperatures. Restrained esters, phenols, and hops are signatures of the styles, from weakest to strongest.

## The Breakdown

From lowest to highest strength, they have been divided, per BJCP guidelines, into Scottish Light, Heavy, Export (generally called *Scottish* ales), and Strong and extra-strong “wee heavy” subcategories (these are *Scotch* ales). The BJCP places wee heavy in category 17, Strong British Ale and extends its lower starting gravity to 1.070 to encompass Strong Scotch Ale. Thus, the Strong subcategory is now considered a wee heavy.

Irish Red, an ale of similar formulation, fills in some of the gap between the maximum gravity of Export Scottish ale (1.054) and the minimum gravity of wee heavy (1.070). This gap exists mainly because of parti-gyle mashing, a technique used by thrifty Scottish brewers in which beers of varying strength are created from worts collected from the same mash and blended. This technique gave the brewer more flexibility to produce beers of specific strengths depending upon what was currently in demand; first-run wort could be kept undiluted and boiled and fermented as a strong ale, with the remaining mash rinsed of its sugars during a secondary sparge



to produce a “twopenny” light beer. Or strong wort could be blended with weaker wort from later in the sparge to produce moderate-strength ales of a desired gravity. Brewers were thereby able to make the most of their high-quality Scottish malt and give the drinking public exactly what it wanted.

The various grades of weaker and stronger ales from Scotland were traditionally designated by how much they cost per hogshead (54 UK gallons), though the differences between how they were brewed in the 19th century and how they are brewed now (not to mention the difference in past and present currency values) make these designations somewhat arbitrary.

Nonetheless, modern beers brewed to a sufficient strength for export are commonly at least 4 to 4.5 percent ABV, and at that strength they are designated 80-shilling ales, abbreviated 80/-. Session-strength Scottish ale covers an alcohol range similar to English mild, best, and ordinary bitter, usually 2.5 to 3.9 percent by volume. What's now called a Scottish Light would be no stronger than 1.035 original gravity: a 60-shilling ale. A Scottish Heavy, despite the name, would be only marginally stronger at 1.035 to 1.040, ending up at 3.2 to 3.9 percent ABV: this would be a 70-shilling. Then comes the 80/- Scottish Export at 1.040 to 1.060, up to 6 percent ABV. Then they leap to Scotch ale strength: modern 90-shilling ales often

start at 1.075 OG, and can be 6.5 percent ABV and higher. From there, 120- and 130-shilling ales could weigh in at 8 to 10 percent ABV, though historically, the starting gravity didn't necessarily correspond to alcohol content as much as it does in modern times, since attenuation was often quite low, and finishing gravities were therefore high.

Incidentally, the name "wee heavy" caught on as a catch-all term for the strongest of Scotch ales, though it was initially used for only one commercial product, Fowler's Twelve Guinea Ale. It was sold in "wee" bottles, it was of heavy strength, and the wholesale price of a hogshead was 156 shillings, about as pricey a Scotch ale as you were likely to find. But here again, the "shilling" designation very much depends on when the beer was brewed.

*Scotch Ale* author Greg Noonan writes that early 90-shilling beers could have had an original gravity as high as 1.125, higher than a modern 140-shilling. But, because of malting and kilning techniques, as well as yeast management, complete attenuation would prevent high alcohol production, with finishing gravities of such beers as high as 1.055—strong, but also quite rich and filling.

### Balancing Sweetness

Hops were all but absent from British brewing tradition until roughly the 15th century, and it took the Scots even longer to adopt them. From pre-Roman times, the Picts had had their heather ales, and later inhabitants of Scotland made beers of oats and barley that were bittered and flavored with meadowsweet, bog myrtle, wormwood, broom, dandelion, and juniper, among other herbs. Bitterness in general was only used to balance, or partially balance, malt sweetness.

Hops also did not grow as well in Scotland as they did in the southern reaches of the UK. Even after they were adopted, since English hops were expensive, Scottish brewers tended to use far less for their beers and instead balanced sweetness with grain bitterness from roast barley (and, for the strongest beers, alcohol). The balance of the grain bill for modern Scottish ales was, and remains, pale malt, and that formula could

## 80 SHILLING SCOTTISH ALE

<b>Batch Size:</b>	5.5 US gallons (20.8 L)	<b>Color:</b>	15 SRM
<b>Original Gravity:</b>	1.055 (13.5° P)	<b>Bitterness:</b>	30 IBU
<b>Final Gravity:</b>	1.016 (4° P)	<b>Alcohol:</b>	5.1% by volume

### MALTS

<b>11 lb.</b>	(5 kg) Golden Promise pale malt
<b>5 oz.</b>	(142 g) 500° L roast barley

### HOPS

<b>2 oz.</b>	(57 g) East Kent Goldings, 5% a.a. @ 60 min
--------------	---

### YEAST

White Labs WLP028 Edinburgh Scottish Ale or Wyeast 1728 Scottish Ale yeast (2L starter)

### ADDITIONAL ITEMS

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

### DIRECTIONS

Mash grains at 154° F (68° C) for one hour. Mash out at 168° F (76° C), and sparge at 170° F (77° C). Collect enough wort volume to offset evaporation from the long 120-minute boil.

After an hour of boiling, add the 60-minute hops. At 15 minutes, add either 1 Whirlfloc tablet or 1 tsp. (5 g) of Irish moss. After the boil, stir wort vigorously to create a whirlpool and precipitate out the trub. Chill wort to 63° F (17° C) as quickly as possible, run off into a fermenter, pitch yeast, and oxygenate for 1 minute using pure oxygen.

Fermentation should be allowed to free-rise to 67° F (19° C) during the first 4 days. It can then proceed at that temperature for another 10 days until terminal gravity is reached. Transfer to secondary (glass or stainless steel preferred), cool to 36° F (2° C), and cold condition for 2–4 weeks.

### VARIATION

While it is not traditional, some brewers choose to forgo the long boil and instead run the first 3–4 gallons (11–15 liters) of strong wort into the kettle, then stop runoff and boil that wort for 30 minutes. This creates caramel-like flavors and darkens the wort. Then the remainder of the wort can be run into the kettle and boiled another hour with the bittering hop charge.

### EXTRACT VERSION

Substitute pale malt with 8.5 lb. (3.86 kg) Maris Otter liquid malt extract. Decrease roast barley to 4 oz. (113 g) and steep in 155° F (68° C) reverse osmosis (RO) water for 30 minutes. Remove grains. Dissolve extract and top up to desired boil volume with RO water. Add hops and boil 60 minutes. Proceed as above.

simply be scaled to the desired strength. The malt bills for this continuum of ales were generally quite similar; what set them apart was the quantity used per brew.

Sugar came into use to bolster the lighter Scottish ales, as it did in English bit-

ters and milds, with brewer's caramel for color; some of the lightest strength Scottish ales remain, for this reason, some of the darkest in color. Before coke came into use in malt house kilns and enabled production of pale malts, base malt was usually quite dark; if wood or readily

available peat was used for the kilns, that malt could also take on burnt or smoky notes. But there probably wasn't much variation as far as what we now think of as "specialty malts" used. The exception was roast barley: thrifty malters, often part of the brewing company itself, would steep the green malt to germinate it; any grains that floated were skimmed off as "slack barley," but rather than going to waste, this often ended up in the roaster, and a touch was used to lend the aforementioned color and dryness to the ales.

Hops are minimized here, but the variety is still important. Favor Goldings and Fuggles, or their similar offspring varieties.

### **English Beers in Scotland**

While Scottish and Scotch ales can be seen as the national beer styles of Scotland, that isn't to say Scottish brewers were incapable of brewing other styles, even ones that demanded much higher quantities of hops. Scottish brewing skill was well proven during the 18th and 19th centuries when brewers witnessed the rising popularity of English porter, stout, and

pale ale. They adopted these styles from England, emulating their neighbor's brewing methods, and even bringing in Burton Union systems to brew IPA and Burton ales in Edinburgh. Scotland became a major brewing center, with nearly 300 breweries by the mid-1800s. These grand operations were eventually curtailed by the typical evils of consolidation, war, and taxes, but happily, Scottish ales persisted.

### **Classic vs. Modern Interpretations**

As with any ancient beer style, Scottish ales have evolved over the years. An 1850-style Scotch ale would have been made with base malt that was probably much darker and more flavorful than our modern pale malts, with stronger biscuit flavor and perhaps some roast character. One could try to replicate this by using a base of pale Maris Otter malt with about 13 percent amber malt, a high-kilned British malt that adds a lot of toasty, bready flavor without contributing a lot of sweetness. Noonan includes several recipes with this grain bill as an homage to the heyday of Scottish brewing. His "modern" recipes are just the

classic pale malt with a 3-percent-or-less addition of roast. But today's interpretations of Scottish ale, particularly in the North American craft scene, not only add adjuncts ranging from wheat to corn to sugar, but also specialty malts including caramel, Munich, dextrin, and black malt.

### **That Elusive Smokiness**

Many brewers associate Scottish ales with a peated or smoke character. Since so many regional varieties of Scotch whisky make use of peated malt, shouldn't beer? Well, as it turns out, no. Stylistically as well as traditionally, there really is no such thing as a peated Scottish ale. Back before clean heat sources were used to kiln malt, there would almost certainly have been smoke character picked up by the grain as it was dried, and in many parts of Scotland, this may very well have been peat smoke. But peated distiller's malt and brewer's malt eventually diverged, and since that time, for all intents and purposes, ne'er the twain have met.

Why, then, can one detect low levels of smoke in some Scotch ales? One answer

**FOR THE HOMEBREWER & BEER LOVER**

**zymurgy**  
The Journal of the American Homebrewers Association

**ON THE GO — OR — AT YOUR DESK**

- Download the Zymurgy app
  - Available for iPhone, iPad & Android
  - Read magazines anywhere, regardless of connectivity
  - Search 17 years of back issues
- Access eZymurgy online to read 17 years of Zymurgy magazine
- Available free exclusively for AHA members

**American Homebrewers Association**

**Brewers Association**

# CICERONE® CERTIFICATION PROGRAM



YOUR BEER SERVER SHOULD  
**RESPECT BEER**  
AS MUCH AS YOU DO.  
**DIRTY vs. CLEAN**  
REQUEST QUALITY.



Four levels of professional beer certification:



Learn more about  
flawed beer.



Off  
Flavor  
Kit  
&  
tutored  
tasting  
webinar

Visit [cicerone.org](http://cicerone.org) for more information.



Brewers Association presents the 12th annual

# GREAT AMERICAN BEER FESTIVAL® **PRO-AM** COMPETITION

American Homebrewers Association® members team up with  
professional brewers to brew award-winning homebrew recipes

Medals are presented at the Great American Beer Festival  
Awards Ceremony, October 7, 2017 in Denver

**FOR MORE INFORMATION, VISIT THE COMPETITIONS  
SECTION OF [HOMEBAWERSASSOCIATION.ORG](http://HOMEBAWERSASSOCIATION.ORG)**



is *phenols*. Yeast used for centuries in Edinburgh breweries and in other parts of Scotland may produce a smoky complexity during fermentation, and the Scottish ale strain most available to homebrewers may do this as well; but if present, any yeast-derived smoke should be very, very subtle. Helping it along with a few ounces of distillery peated malt in the grain bill will only boot your effort into category 22B, Other Smoked Beer. (And the fact that a good number of craft breweries are doing this does not make it OK!) Some hints of smoky character may come from normally kilned Scottish malt, roast barley or even the water source, but please reserve your smoked malt for rauchbier.

### Caramelization

Another typical Scottish ale association is with caramel character, but that isn't entirely accurate. What we're looking for is Maillard browning reactions in the kettle; it's a different flavor than that which can be achieved with crystal malt. Historically, this malt complexity came from long boils, and that practice is still used by many Scottish brewers. If you've never tried Traquair House Ale, nothing demonstrates this complexity better; to me, it's the quintessential Scotch Ale, and its character is derived as much from the grist composition of 99 percent pale malt and 1 percent roast as it is from the 4- to 5-hour boil. It is produced in very small quantities but can be obtained in North America from importer Merchant du Vin. No caramel malt is used in the beer.

Homebrewers are therefore advised to resist the temptation to add lots of caramel malt to Scotch ales. Dr. David Brown, a former technical director of Scottish & Newcastle, is quoted in Noonan's book as saying, "The maltiness is not from crystal. Roast barley accounts for flavor, rather than caramel malt as the English do. This is by a tradition that has stood for hundreds of years, rich and sweet beers."<sup>1</sup> Of course, there are acceptable shortcuts. For example, brewers may still achieve the necessary Maillard reactions critical to the style by reducing the first few gallons or liters of wort from the mash tun by half or more; this can be done separately from the main boil, perhaps on the kitchen stove, and

then added back to the kettle once the desired level of caramelization has been achieved. It's not the same as a 4- to 5-hour boil, but it will work in a pinch.

### Malt

Malt quality is obviously critical to the style. Malt type is more of a preference. One can make a perfectly serviceable Scottish ale with Maris Otter malt, but it will have a bit more of a biscuit malt quality than one made with a softer, mellower malt like Golden Promise or Optic. Another shortcut is to add a small

addition of dextrin malt (3 to 5 percent) for added body, but my preference is to simply mash at a higher temperature: 154 to 156° F (68 to 69° C) adds a weighty, dextrinous mouthfeel and boosts finishing gravity.

Malt extract is perfect for Scotch ale brewing, on its own or to bolster the strength of wort produced from a mash. On its own, you can easily achieve a rich array of Maillard flavors with a diluted extract-based wort. Just please don't be tempted to boil straight malt extract syrup; it's too



# Hopsteiner

est. 1845

## HOP VARIETIES

### EUREKA!™



**Alpha-Acid %:** 17 – 19.9  
**Beta-Acid %:** 4.6 – 6  
**Total Oils (ml/100g):** 2.5 – 4.4

**Aroma Specification:**  
 Black Currant, Dark Fruits,  
 Strong Herbal Notes, Pine Tree

**"Holy hop aroma Batman...  
 this is a seriously aromatic hop."**  
 – A Ph.D in Beer

### Lemondrop™



**Alpha-Acid %:** 5 – 7  
**Beta-Acid %:** 4 – 6  
**Total Oils (ml/100g):** 1.5 – 2

**Aroma Specification:**  
 Lemon, Mint, Green Tea, Melon

**"Unique lemon-citrus  
 character with a  
 pleasant aroma..."**

### CALYPSO™



**Alpha-Acid %:** 12 – 14  
**Beta-Acid %:** 5 – 6  
**Total Oils (ml/100g):** 1.6 – 2.5

**Aroma Specification:**  
 Pear, Apple, Tropical,  
 Fruit, Mint

**High alpha hop  
 used for its soft  
 aromatics.**

### DENALI™



**Alpha-Acid %:** 13 – 15  
**Beta-Acid %:** 4 – 5  
**Total Oils (ml/100g):** 2.5 – 4

**Aroma Specification:**  
 Pineapple, Pine, Bright Citrus

**"Beautiful, honestly like  
 no hop I'd smelled before."**  
 – Brûlosophy.com

*The Proof is in the Pour™*

**Ask your local homebrew supply shop  
 for these exciting new hop varieties.**

**hopsteiner.com**

f    t    i    a

easy to burn it that way. Remember to use distilled or reverse-osmosis water when diluting malt extract; it usually already contains salts.

## Water

Water for Edinburgh-style Scottish and Scotch ales should have some light sodium and sulfate; very soft or reverse-osmosis filtered water would benefit from having scant additions (1g/gal. each) of calcium chloride and calcium sulfate. The sulfates bring some dryness and balance to what can be a very sweet and malty style. It should be noted that Edinburgh's water profile is similar to Burton-Upon-Trent's, which is why IPAs were brewed so successfully there. Moderate "Burtonization" of your Scottish ale brewing water may be worth experimenting with, but I would err on the light side with those salts.

## Yeast

Fortunately, there are some very good liquid yeast strains available to homebrewers that come directly from Scottish breweries. Both White Labs WLP028 Edinburgh Scottish Ale and Wyeast 1728 Scottish Ale yeasts are said to come from McEwan's, and indeed, they do exhibit similar characteristics. Lower strength Scottish ales will turn out substantially maltier with this yeast than with other strains, while attenuation tends to be lower; in terms of percentage, expect low 70s. For stronger Scotch ales, it becomes important to pitch a great deal of yeast slurry to minimize ester production. In fact, it is recommended that you brew a middle-range Scottish ale first, and use the entire yeast cake for your strong Scotch ale. Wort should be well chilled at pitching, again to minimize esters: at warmest, pitch at 65° F (18° C), though the lower end of this yeast's temperature range, 63° F (17° C), is recommended. Historically, brewers even restricted wort aeration prior to pitching for the same reason.

Here, however, one needs to again address the question of historical accuracy vs. modern standards. Ancient Scotch ales were fermented at temperatures well below modern yeast producers' recommended temperature ranges, and oxygen starvation would further prevent yeast reproduction, leading to a very smooth,

# WEE HEAVY/STRONG SCOTCH ALE

<b>Batch Size:</b>	5.5 US gallons (20.8 L)	<b>Color:</b>	20 SRM
<b>Original Gravity:</b>	1.091 (21.8° P)	<b>Bitterness:</b>	36 IBU
<b>Final Gravity:</b>	1.025 (6.3° P)	<b>Alcohol:</b>	8.8% by volume

## MALTS

<b>18.25 lb.</b>	(8.28 kg) Golden Promise pale malt
<b>8 oz.</b>	(227 g) 500° L roast barley

## HOPS

<b>3 oz.</b>	(57 g) East Kent Goldings, 5% a.a. @ 60 min
--------------	---

## YEAST

White Labs WLP028 Edinburgh Scottish Ale or Wyeast 1728 Scottish Ale yeast (preferably fresh yeast slurry from a Scottish ale)

## ADDITIONAL ITEMS

1 Whirlfloc tablet or 1 tsp. (5 g) Irish moss @ 15 min  
1/2 tsp. (2.2 g) yeast nutrient @ 15 min

## DIRECTIONS

Mash grains at 152° F (67° C) for one hour. Mash out at 168° F (76° C), and sparge at 170° F (77° C). Collect enough wort volume to offset evaporation from the long 120-minute boil.

After an hour, add the 60-minute hops. At 15 minutes, add either 1 Whirlfloc tablet or 1 tsp. (5 g) of Irish moss and the yeast nutrient. After the boil, stir wort vigorously to create a whirlpool and precipitate out the trub. Chill wort to 63° F (17° C) as quickly as possible, run off into a fermenter, pitch yeast, and oxygenate for 1 minute using pure oxygen.

Fermentation should be allowed to free-rise to 67° F (19° C) during the first 4 days. It can then proceed at that temperature for another 2 weeks, or until terminal gravity is reached. Transfer to secondary (glass or stainless steel preferred), cool to 36° F (2° C), and cold condition for 2–4 weeks. The beer can then be conditioned in kegs or bottles for up to 10 months at cellar temperatures before serving.

## EXTRACT VERSION

Substitute pale malt with 13.75 lb. (6.24 kg) Maris Otter liquid malt extract. Decrease roast barley to 6 oz. (170 g) and steep in 155° F (68° C) reverse osmosis (RO) water for 30 minutes. Dissolve extract and top up to desired boil volume with RO water. Add hops and boil 60 minutes. Proceed as above.

and most certainly under-attenuated beer. Finishing gravities of 1.055 were not uncommon with some of the bigger brews. Scots liked their beers big, malty, and sweet, to the point of being sticky. For modern, more completely fermented versions, (the BJCP is adamant that wee heavy be big and full-bodied, but not cloying—if you are brewing for competition, take heed), wort oxygenation is definitely recommended to prevent a

stuck ferment, and temperatures of 63° to 65° F (17 to 18° C) will still produce a smooth Scotch ale.

If you still want to target a more traditional Scotch ale with a high finishing gravity, I would again recommend increasing the mash temperature instead: 158 to 159° F (70 to 71° C) is not unreasonable for wee heavy. For Scotch ales above 1.070, expect a two- or even three-week fermentation.



Download the FREE Brew Guru app to learn more about Scottish Ales..

Note that even for lighter ales, Scottish ale yeast likes to jump out of the fermenter once it gets going, so be prepared to beat it back into the brew as the Scots did, or have blow-off equipment handy.

Also be prepared to age your stronger Scottish ales: ales with an original gravity in excess of 1.075 can easily be cellared a year before serving to reach full, Scotch whisky-like flavor development, and will continue to improve for years afterwards. The smaller beers—80/- Scottish ales and lighter—should be consumed fresh, as they do not possess the alcohol to adequately preserve them longer than a few months.

#### References

1. Noonan, Gregory J. *Scotch Ale*. Boulder, CO: Brewers Publications, 1993.

**Amahl Turczyn** is associate editor of *Zymurgy*.

# Gotta-Brew.com

## Control Fermentation Temps Like the Pros!



- ✓ Add a Cooling Jacket to your Conical!
- ✓ Fits Conicals, Carboys, Buckets, Kegs, Jugs, Variable Volume Tanks, just about any fermenter!
- ✓ Easy to use!
- ✓ Flexible and removable!
- ✓ No risk of contamination!

Our Jackets fit a wide range of fermenters!  
Visit [Gotta-Brew.com](http://Gotta-Brew.com) for more info.





# GREAT AMERICAN BEER FESTIVAL®

## OCTOBER 5-7, 2017

GREATAMERICANBEERFESTIVAL.COM

MEMBERS-ONLY TICKET SALE AUGUST 1!

SAVOR THE FLAVOR  
RESPONSIBLY®







# A New Number One!

By Jill Redding  
with recipes by Amahl Turczyn

## The streak is over.

**M**ove over, Pliny the Elder. Two Hearted Ale has staked its claim at the top of the hop mountain.

After eight straight years of Russian River Brewing Company's popular double IPA dominating the top spot in *Zymurgy*'s Best Beers in America poll, Bell's Two Hearted Ale was named the number one beer in the 15th annual survey.

"We knew it wouldn't go on forever," said Russian River co-owner and brewmaster Vinnie Cilurzo. "We have no problem getting knocked off by Two Hearted. It's a great beer."

Pliny the Elder finished second in the voting, followed by Founders Breakfast Stout. The poll is open to members of the American Homebrewers Association, who could submit up to 20 of their favorite commercial beers available for purchase in the United States. Since the 2016 poll, almost 1,000 new breweries have opened, with a spectacular array of new beers available for craft beer lovers.



#1  
Bell's  
Two Hearted Ale



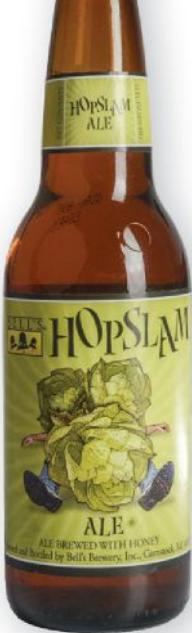
#2  
Russian River  
Pliny the Elder



#3  
Founders  
Breakfast Stout



#4  
Three Floyds  
Zombie Dust



#5  
Bell's  
Hopslam

## TOP-RANKED BEERS

(T indicates Tie)

- |  |   |
|--|---|
| 1. Bell's Two Hearted Ale*                   | T27. Fat Head's Head Hunter IPA           |
| 2. Russian River Pliny the Elder*            | T27. Firestone Walker Double Jack         |
| 3. Founders Breakfast Stout                  | T27. Melvin 2x4 DIPA                      |
| 4. Three Floyds Zombie Dust                  | T27. New Belgium La Folie                 |
| 5. Bell's Hopslam                            | T27. Odell 90 Shilling                    |
| T6. Founders KBS (Kentucky Breakfast Stout)* | T27. Russian River Pliny the Younger      |
| T6. The Alchemist Heady Topper               | T27. Sierra Nevada Torpedo Extra IPA      |
| T8. Deschutes Fresh Squeezed IPA*            | T27. The Alchemist Focal Banger           |
| T8. Sierra Nevada Celebration*               | T27. Tröegs Nugget Nectar                 |
| 10. Ballast Point Sculpin IPA                | T27. Founders Backwoods Bastard           |
| T11. Boulevard Tank 7 Farmhouse Ale          | T27. Oskar Blues Ten FIDY                 |
| T11. Sierra Nevada Pale Ale                  | T38. Great Lakes Edmund Fitzgerald Porter |
| T13. Founders All Day IPA                    | T38. Deschutes The Abyss                  |
| T13. Lawson's Finest Liquids Sip of Sunshine | T38. North Coast Old Rasputin             |
| 15. Cigar City Jai Alai IPA                  | T38. Arrogant Bastard Ale*                |
| 16. Deschutes Black Butte Porter             | T38. Stone Enjoy By IPA                   |
| 17. Goose Island Bourbon County Brand Stout  | T43. Dogfish Head 120 Minute IPA*         |
| 18. Left Hand Milk Stout Nitro*              | T43. New Glarus Wisconsin Belgian Red     |
| T19. Lagunitas IPA                           | T43. Oskar Blues Dale's Pale Ale*         |
| T19. Dogfish Head 90 Minute IPA              | T43. Russian River Consecration           |
| T19. Stone IPA                               | T47. Wicked Weed Pernicious               |
| T22. Tree House Julius                       | T47. Firestone Walker Union Jack          |
| T22. Odell IPA*                              | T47. New Holland Dragon's Milk            |
| T22. Russian River Blind Pig IPA*            | T47. Oskar Blues Old Chub                 |
| T22. Toppling Goliath pseudoSue              | T47. Three Floyds Alpha King              |
| 26. Fat Head's Hop Juju                      |   |

\* Clone this beer at home! Find the recipe on our website @ HomebrewersAssociation.org/clones



#6T  
Founders  
KBS

(Kentucky Breakfast Stout)



#6T  
The Alchemist  
Heady Topper



#8T  
Deschutes  
Fresh Squeezed IPA



#8T  
Sierra Nevada  
Celebration



#10  
Ballast Point  
Sculpin IPA

"I'm continually amazed at the creativity and passion that craft breweries exhibit," commented Zymurgy reader Hans Muecke of San Marcos, Calif. "Just when you think you've tried it all, someone throws you a curve ball."

### A Tale of Two Beers

Bell's Brewery director of operations John Mallett was literally speechless when he heard the news regarding this year's results. The brewery's top-selling Two Hearted Ale, an American IPA that showcases Centennial hops, had finished second to Pliny the Elder for seven straight years.

"I would say that my loss of speech when the incredible honor was communicated speaks volumes," Mallett said later. "Those who know me know that I am rarely at a loss for words. I have so much admiration and respect for the homebrewing community, and the creativity and commitment to the lovely craft that they embody."

Two Hearted Ale, named after the Two Hearted River in Michigan's Upper Peninsula, got its start in 1993 as a homebrewed "super IPA" that a Bell's

**"I CONSIDER TWO  
HEARTED AN AMERICAN  
CLASSIC. IT SITS RIGHT  
UP THERE WITH SIERRA  
NEVADA PALE ALE AND  
ANCHOR STEAM."**

- Vinnie Cilurzo, Russian River

employee took to a birthday party, trying to impress the guest of honor. That beer became the foundation for Two Hearted, though the hop bill was changed to exclusively use a then-recently released cultivar: Centennial. Two Hearted checks in at 7 percent ABV.

"This is an incredible honor for us. We got our start as homebrewers—that's how my dad got going—so we really identify with the homebrewing community," said Bell's



Find the Best Beers in  
your state on our website @  
[HomebrewersAssociation.org/JA17](http://HomebrewersAssociation.org/JA17)

CEO Laura Bell, whose father, Larry, started the brewery in 1985 in Kalamazoo, Mich. "We take a lot of that spirit into what we do today."

Two Hearted Ale was originally a specialty and then a seasonal beer for the brewery. "Five or six years ago, we were able to take the brakes off a little bit," commented Bell. "Since it's a single-hopped beer, we wanted to make sure we have the resources to do it. It's grown incredibly and has helped define us."

Two Hearted Ale has "a perfect balance of hops and malt sweetness," commented AHA member James Little of Commerce, Mich.

"No other IPA compares with this beer," summed up Jason Horton of Allendale, Mich.

Cilurzo also has high praise for Two Hearted. "I consider Two Hearted an American classic," he said. "It sits right up there with Sierra Nevada Pale Ale and Anchor Steam."

## BELL'S TWO-HEARTED ALE CLONE

As brewed by David Curtis and Ryan Kramer

Bell's director of operations John Mallett comments, "The beer is all about letting the quality of the raw materials shine through. Malt flavors are what give the background to this beer. Malt flavor should be clean, so watch the lauter to assure a bright wort in the kettle."

"Centennial is a notoriously finicky hop and when choosing them, you want to have the pine, light floral, lemon-lime, ripe orange, and deep cherry flavors all present. Avoid hops that exhibit sulfury onion-garlic aromas."

"If you are interested in playing with this recipe a bit, I would suggest cutting in a small quantity of Munich malt in place of some of the base malts. You want to have the hops still be the primary flavor, but playing with middle level malt flavors is a nice take on the style."

<b>Batch Size:</b>	5 U.S. gallons (18.9 L)	<b>Bitterness:</b>	55 IBU
<b>Efficiency:</b>	65%	<b>Color:</b>	10 SRM
<b>Original Gravity:</b>	1.063 (15.5° P)	<b>Alcohol:</b>	7% by volume
<b>Final Gravity:</b>	1.012 (3.0° P)		

### MALTS

- 10 lb.** (4.5 kg) Briess Two-Row Brewers Malt (1.8° L)  
**2.83 lb.** (1.3 kg) Briess Pale Malt (3.5° L)  
**8 oz.** (227 g) Briess Caramel (40° L)

### HOPS

- 1.2 oz.** (34 g) Centennial pellets, 9.1% a.a. @ 45 min  
**1.2 oz.** (34 g) Centennial pellets, 9.1% a.a. @ 30 min  
**3.5 oz.** (99 g) Centennial pellets, 9.1% a.a., dry hop

### YEAST

White Labs WLP001 California Ale Yeast or WLP051 California Ale V Yeast

### BREWING NOTES

Use 4.5 gallons (17 liters) carbon filtered water, adjusted with 4 grams gypsum. Step mash: 45 minutes at 150° F (66° C), ramp to 170° F (77° C) over 15 minutes (or ramp by infusing 2.5 gallons boiling water), rest 10 minutes at 170° F (77° C). Vorlauf until clear. Collect 6.6 gallons (25 liters), sparging with 175° F (79° C) water. Boil vigorously for approximately 75 minutes, hopping as indicated above. Whirlpool and allow to settle for 15 minutes. Chill wort to 64° F (18° C). Aerate wort and pitch yeast. Ferment warm (ale temperature). Dry hop one week into fermentation. Allow beer to stay warm with hops for a week. Rack beer, crash cool, and cold age for a week. Rack beer, prime with sugar, and bottle.

### EXTRACT VERSION

Use 6.6 lb. (3 kg) Briess Golden Light liquid malt extract and 2.5 lb. (1.1 kg) Golden Light Dry malt extract instead of the two-row and pale ale malts. Steep the 8 oz. caramel malt in 1 gallon (3.8 liters) of 150° F (66° C) water for 20 minutes. Strain and sparge through the grains, topping up to 6.6 gallons (or up to 3.5 gallons for a partial boil) and bring to a boil. Add the malt extracts. Add 2 grams of gypsum to the boil. Continue as per all-grain recipe (unless using partial boil process where water needs to be added to bring post boil volume up to 5.25 gallons/20 liters).



Don't expect any bad blood between these breweries as they switch places in the rankings. "We couldn't be happier for our friends at Bell's not only for their amazing beer, but the friendship between our two breweries," said Cilurzo. "Each year I trade beers with other breweries in the U.S. for our staff holiday party at Russian River, and Bell's Two Hearted is one of the beers we get every year. I get special requests from several of our staff each year making sure that I'd be bringing in Two Hearted again."

Pliny the Elder's consistently high performance in the poll continues to impress considering that the beer is not widely distributed. Russian River is building a new brewery and brewpub in Windsor, Calif. that is scheduled to open in the third quarter of 2018, but still plans to focus most of its distribution close to home.

Pliny the Elder is brewed with Amarillo, Centennial, CTZ, and Simcoe hops, and checks in at 8 percent ABV. "Still a master stroke all these years later," commented Timothy Grant of Washington, D.C. "Perfectly clean, balanced, and hopped with precision."

### The Rest of the Best

Despite the influx of new breweries—the U.S. brewery count was more than 5,300 at press time—many of the beers in the top 50 are perennial favorites. Eight of the top 10 beers from 2016 also made the top 10 this time around.

Founders Breakfast Stout jumped into the third spot after finishing sixth last year—the first time a non-IPA has cracked the top three since 2011. "Amazingly well-rounded, perfect stout and the right amount of chocolate and coffee," summed up Stephen Pack of Louisville, Colo.

Three Floyds Zombie Dust, seventh last year, finished in fourth place, while Bell's Hopslam (eighth in 2016) rounded out the top five.

### Newcomers

Some of the 2016 poll newcomers found their way into the top 50 again, including Sip of Sunshine from Lawson's Finest Liquids (tied for 13th), Toppling Goliath

# thank you

Dear Homebrewing Community,

Our journey began in a way that is familiar and relatable to so many of you. Pursuit of better beer. That passion led us to something else we all have in common. Brewing.

Those fundamental roots are the foundation of where we are today and they will always be part of where we go next. To be recognized by so many that share our passion and enthusiasm is more than we can express here. Thank you!

We also thank you for your continued support of family owned and independent craft beer.

On behalf of everyone here at Bell's, we raise a pint to you.

Cheers,

*Tony J. Bell   Jaurand Bell   David Bell*



pseudoSue (tied for 22nd), and Tree House Julius (tied for 22nd).

"You could make a case for a lot of beers from Toppling Goliath, but pseudoSue is in a class by itself," commented Ben Zimmer of Menomonee Falls, Wis. "Intense citrusy hop flavor with an extremely balanced hop bitterness that will convert non-beer drinkers to the right side!"

Among the beers making their debut in the top 50 this year were Melvin 2x4 DIPA, Wicked Weed Pernicious, and The Alchemist's Focal Banger (see the May/June 2017 issue of Zymurgy for our Focal Banger clone recipe).

### Epiphanies

Some beers are life-changing experiences for many of our readers, whether classics they keep coming back to or new beers that left a big impression. A sampling of these "epiphany" beers:

Alesmith Speedway Stout: "Back in 2007 this was my first craft beer, and it was a stellar introduction to the emerging scene. All the exciting flavors I'd never experienced before. This beer changed my life." (James Gallant, San Diego).

Anchor Steam: "First beer I ever tried, and it never lost a bit of its appeal." (Coleman Rosenberg, San Francisco)

Boston Lager: "I was born and raised 45 minutes from Boston; voting for anything else would be sacrilege. This is the beer that inspired me to learn how to brew my own." (Matthew Deveikis, Amelia Court House, Va.)

Funky Buddha Maple Bacon Coffee Porter: "The first time I had this was my first true beer nirvana moment. It changed the way I thought about beers and what they could be." (Allen Steen, Punta Gorda, Fla.)

Bale Breaker Mount Saint Humulus: "The only five-star review I have given a beer." (Rev. Steven Harrison, Yakima, Wash.)

Sierra Nevada Pale Ale: "This was my first introduction to craft beer in 1992. It is my go-to beer ever since. It's perfect for every occasion." (Don Schel, Cobleskill, N.Y.)



## TOP BREWERIES

(T indicates Tie)

1. **Bell's Brewery, Inc., Comstock, Mich.**
2. **Founders Brewing Co., Grand Rapids, Mich.**
3. **Russian River Brewing Co., Santa Rosa, Calif.**
4. **Sierra Nevada Brewing Co., Chico, Calif. and Mills River, N.C.**
5. **Stone Brewing, Escondido, Calif., Richmond, Va., and Berlin, Germany**
6. **Firestone Walker Brewing Company, Paso Robles, Calif.**
7. **Deschutes Brewery, Bend, Ore.**
8. **Dogfish Head Craft Brewery, Milton, Del.**
9. **Lagunitas Brewing Company, Petaluma, Calif. and Chicago, Ill.**
10. **Ballast Point Brewing, San Diego, Calif.**
11. **Odell Brewing Co., Fort Collins, Colo.**
12. **Three Floyds Brewing Co., Munster, Ind.**
13. **Boulevard Brewing Co., Kansas City, Mo.**
14. **Oskar Blues Brewery, Longmont, Colo., Brevard, N.C., and Austin, Texas**
15. **New Glarus Brewing Co., New Glarus, Wis.**
- T16. **New Belgium Brewing, Fort Collins, Colo. and Asheville, N.C.**
- T16. **The Alchemist, Waterbury and Stowe, Vt.**
18. **Avery Brewing Co., Boulder, Colo.**
19. **Great Lakes Brewing Company, Cleveland, Ohio**
- T20. **Cigar City Brewing, Tampa, Fla.**
- T20. **Great Divide Brewing Co., Denver, Colo.**
- T20. **Left Hand Brewing Co., Longmont, Colo.**
23. **Victory Brewing Co., Downingtown, Pa.**
24. **Surly Brewing Co., Minneapolis, Minn.**
- T25. **Fat Head's Brewery, Cleveland, Ohio, and Portland, Ore.**
- T25. **Goose Island Beer Co., Chicago, Ill.**



EXPERIENCE BELLINGHAM, WASHINGTON



BE  
SPIRITED

AWARD-WINNING (EVER-GROWING) CRAFT BEER SCENE  
ADVENTURES FROM MOUNT BAKER TO THE SALISH SEA



BE IN Bellingham  
WHATCOM COUNTY  
[bellingham.org](http://bellingham.org)

BASECAMP  
BELLINGHAM



GREAT AMERICAN  
BEER FESTIVAL®  
2017 PROUD SPONSOR



Stone Brewing's Greg Koch and Steve Wagner.

## BEST PORTFOLIO

(T indicates Tie)

**1. Stone Brewing (31 beers)**

**2. Bell's Brewery, Inc. (27 beers)**

**3. Firestone Walker Brewing Co. (25 beers)**

**4. Sierra Nevada Brewing Co. (24 beers)**

**T5. Dogfish Head Craft Brewery (22 beers)**

**T5. Lagunitas Brewing Company (22 beers)**

**T7. Boulevard Brewing Co. (21 beers)**

**T7. Founders Brewing Co. (21 beers)**

**9. Avery Brewing Co. (19 beers)**

**T10. New Glarus Brewing Co. (18 beers)**

**T10. Odell Brewing Co. (18 beers)**

## SIERRA NEVADA CELEBRATION ALE CLONE

Recipe by Amahl Turczyn

**Batch Volume:** 5.5 US gallons (20.8 L)

**Original Gravity:** 1.068 (16.5° P)

**Final Gravity:** 1.015 (3.8° P)

**Bitterness:** 64 IBU

**Color:** 15 SRM

**Alcohol:** 7.1% by volume

### MALTS

- |               |                              |
|---------------|------------------------------|
| <b>12 lb.</b> | (5.44 kg) UK pale malt       |
| <b>1 lb.</b>  | (0.45 kg) 60° L crystal malt |
| <b>8 oz.</b>  | (227 g) 80° L crystal malt   |
| <b>8 oz.</b>  | (227 g) dextrin malt         |
| <b>2 oz.</b>  | (57 g) chocolate malt        |

### HOPS

- |                |   |
|----------------|---|
| <b>1 oz.</b>   | (28 g) Chinook, 11% a.a. @ 50 min             |
| <b>1.5 oz.</b> | (42 g) Cascade, 5.5% a.a. @ 30 min            |
| <b>1.5 oz.</b> | (42 g) Cascade, 5.5% a.a., whirlpool 10 min   |
| <b>1 oz.</b>   | (28 g) Centennial, 10% a.a., whirlpool 10 min |
| <b>1.5 oz.</b> | (42 g) Cascade, 5.5% a.a., dry hop 3–5 days   |
| <b>1 oz.</b>   | (28 g) Centennial, 10% a.a., dry hop 3–5 days |

### YEAST

Chico ale yeast (American or California ale yeast) 2L starter

### BREWING NOTES

Mash grains at 152° F (67° C) for 60 minutes. Sparge at 168° F (76° C). Chill wort to 65° F (18° C) and ferment for 4 days, then allow temperature to rise to 67° F (19° C) and ferment to completion. Dry hop for 3–5 days, then rack and package.

### EXTRACT VERSION

Substitute 9 lb. (4.08 kg) pale malt extract for UK pale malt. Steep remaining grains in 155° F (68° C) water for 30 minutes, drain, rinse grains, and dissolve extract using reverse osmosis or distilled water. Top off to desired boil volume and proceed as above.





SIERRA  
NEVADA®



FAMILY OWNED, OPERATED & ARGUED OVER

PALE ALE



## When There's No Roadmap,

you rely on instinct. And you take risks. No one planned for pine and citrus hop flavors to challenge brewing conventions. Or for the green label to become iconic.

In 1980, Ken Grossman brewed the beer he wanted to drink and shared it with his friends. Some things never change.

# TRUST

*the folk*

## WHO HAVE BEEN Making Malt FOR GENERATIONS

Muntons have been supplying brewers with their malt since the 1920s. As you would expect, over that time we've built a detailed knowledge of what brewers need from their ingredients and we've built a reputation for providing service and quality within the brewing industry.

Today, Muntons malt ingredients portfolio covers the entire gamut of brewers' needs. From homebrewer, to craft brewer, to some of the world's largest breweries.

Our brewing products span branded malt extracts for starter kits thru specialty malt extracts (such as Maris Otter®) to dried spraymalts and bulk grain malts.

So if you're a first time brewer hoping for a painless initiation, a craft brewer with aims to create something totally new or an established brewery looking for a consistent supply of product and support, you can trust Muntons.



Muntons are leading manufacturers of malt and malt extract providing only the finest quality ingredients for the homebrewer, craft brewing industry as well as national and international breweries. Muntons are also the largest manufacturer of homebrew extract kits. Additional kits now include all grain starter kits. Ingredients that may also enhance your brews include a variety of spraymalts.

Visit your local homebrew store  
for Muntons homebrew products  
or contact us at:  
[www.muntonshomebrew.com](http://www.muntonshomebrew.com)  
email: [sales@muntons-inc.com](mailto:sales@muntons-inc.com)

@MuntonsUSA  
 @muntonshomebrew



PURE MALT EXTRACTS



HOMEBREW KITS



SPRAYMALTS



GRAIN MALTS



## TOP IMPORTS

(T indicates Tie)

1. Unibroue La Fin Du Monde (Canada)
2. Duvel (Belgium)
- T3. Orval (Belgium)
- T3. Saison Dupont (Belgium)
- T3. Rodenbach Grand Cru (Belgium)
- T3. St. Bernardus Abt 12 (Belgium)
- T7. Chimay Cinq Cents (White) (Belgium)
- T7. Duchesse De Bourgogne (Belgium)
- T7. Westvleteren 12 (Belgium)
- T7. Paulaner Oktoberfest (Germany)
- T7. Schneider Aventinus (Germany)
- T7. Mikkeller Beer Geek Breakfast (Denmark)
- T7. Epic Hop Zombie (New Zealand)

Arrogant Bastard Ale: "This was the beer that showed me what beer could really taste like, and is still one of my favorites." (Craig Teel, Missouri City, Texas)

Aecht Schlenkerla Rauchbier: "Worth a 3,000-mile trip." (Gale Siedenburg, Loveland, Colo.)

Boulevard Rye-on-Rye: "This beer tastes like everything life is worth living for." (Jedidiah Smith, Parker, Colo.)

## Above the Rest

In the top breweries division, Bell's also knocked Russian River out of the top position after finishing fifth last year. Russian River had claimed the top brewery spot for three straight years.

Bell's placed two beers in the top five, with Hopslam, a seasonal double IPA, taking the fifth position. The brewery recently finished

## LAWSON'S SIP OF SUNSHINE CLONE

Recipe by Sean Lawson and Amahl Turczyn

**Batch Volume:** 5.5 US gallons (20.8 L)

**Original Gravity:** 1.076 (18.5° P)

**Final Gravity:** 1.016 (4° P)

**Bitterness:** 75 IBU

**Color:** 8 SRM

**Alcohol:** 8% by volume



### MALTS

9 lb.	(4.08 kg) pale two-row malt
2 lb.	(0.9 kg) Vienna malt
1 lb.	(0.45 kg) flaked oats
1 lb.	(0.45 kg) dextrose @ flameout
12 oz.	(340 g) dextrin malt
4 oz.	(113 g) CaraMunich malt
4 oz.	(113 g) CaraRed malt

### HOPS

1 oz.	(28 g) Columbus/Tomahawk/Zeus, 14% a.a. @ 60 min
1 oz.	(28 g) Citra, 12% a.a. @ 20 min
6 oz.	(170 g) Citra, 12% a.a., whirlpool 20 min
3 oz.	(85 g) Citra, 12% a.a., dry hop 3–5 days

### WATER

1 g/gal.	calcium chloride
1 g/gal.	calcium sulfate

### YEAST

Chico ale yeast (American or California ale yeast) 2L starter

### BREWING NOTES

Mash grains at 152° F (67° C) for 60 minutes. Sparge at 168° F (76° C). Add dextrose at the end of the boil. Chill wort to 65° F (18° C) and ferment for 4 days, then allow temperature to rise to 68° F (20° C) and ferment to completion. Dry hop for 3–5 days, then rack and package.

### PARTIAL-MASH VERSION

Substitute 6.25 lb. (2.83 kg) pale malt extract for all but 1 lb. (0.45 kg) of the pale two-row malt, and decrease dextrin malt to 8 oz. (227 g). Mash Vienna, oats, dextrin malt, CaraMunich, and CaraRed malts in 155° F (68° C) water for 60 minutes; drain, rinse grains, and dissolve extract using reverse osmosis or distilled water. Top off to desired boil volume and proceed as above.

a significant expansion and has extended its distribution, launching Texas in February.

"The craft landscape is changing a little bit, but we've stuck to our roots as an

independent family brewery and to the things that are important to us, like using high quality ingredients," said Bell. "We have a lot of gratitude for the folks who still see that and appreciate it."

## THE ONLY GLASS YOU'LL EVER NEED

No matter what styles of beer you're brewing, this superior quality Rastal glass complements the flavors and aromas of them all. It's stackable, durable and versatile, and is the perfect ambassador for your homebrew brand or club.

### CRAFT MASTER GRAND

EXCLUSIVELY AT GRANDSTAND



- 16 OZ. (BRIMFUL)
- STACKABLE
- DURABLE
- ERGONOMIC
- STYLISH
- VERSATILE
- SENSORY REFINING
- HIGH QUALITY DECORATION

**GRANDSTAND**  
GLASSWARE + APPAREL



Glassware



Apparel



Promo



Creative

eGRANDSTAND.COM

Founders Brewing Co. in Grand Rapids, Mich. finished second in the voting, placing three of its beers in the top 50 (along with Breakfast Stout's third-place finish, KBS tied for fifth, and All Day IPA tied for 13th).

In the Best Portfolio division, Stone Brewing once again dominated that category, with 31 of its beers receiving votes in the poll. Bell's was second with 27 beers, and Firestone Walker had 25 of its beers receive votes.

## Foreign Affairs

As has been the case for the past several years, no beers produced by breweries outside of the U.S. cracked the top 50. La Fin du Monde, a tripel from Quebec, Canada brewery Unibroue, was the top import for the fourth straight year.

Duvel, a Belgian strong pale ale, finished second, and four other Belgian beers tied for third: Orval, Saison Dupont, Rodenbach Grand Cru, and St. Bernardus Abt 12.

Saison Dupont is "the gold standard of a classic saison," commented Jared Carter of Philadelphia, Pa. "Every time I pop a bottle of this beer, it's a special occasion."

"Abt 12 continues to be the one beer that immediately puts a smile on my face and drives my wife crazy since I have to tell her what an amazing beer it is every time I'm drinking it," commented Muecke.

## Recipes

As usual, we're providing clone recipes for some of the top beers in the poll. Zymurgy associate editor Amahl Turczyn has compiled homebrew recipes for Sip of Sunshine and Sierra Nevada Celebration. We're also reprinting the Bell's Two Hearted Ale recipe that appeared in the July/August 2011 Zymurgy, with updated brewing notes from Mallett. Give them a try and let us know what you think!

The recipe for Pliny the Elder appeared in the July/August 2014 issue. We've also published clone recipes in the past for many other beers in the top 50. Search the Zymurgy index at HomebrewersAssociation.org to find the specific issues for some of those recipes.

Thanks to all AHA members who took the time to vote in this year's poll, and for your thoughtful comments that once again helped tell the story of Zymurgy's Best Beers in America.

**Jill Redding is the former editor-in-chief of Zymurgy. She is editor-in-chief of The New Brewer, the journal of the Brewers Association.**

**BREW JACKET**

Professional Quality Temperature Control  
Dual Heating & Cooling  
BrewJacket.com

**Lager Without a Refrigerator**

Warm or cool to any temp up to 35° F above / below room temperature

**UINTA**  
BREWING co.

Proudly Brewed In • SALT LAKE CITY • UTAH • USA

BREWED WITH Renewable POWER + WIND & SOLAR

Looking for answers? LOOK NO FURTHER

Uintabrewing.com

BREWED IN UTAH GOES WELL WITH Anywhere

Stalk us?

Instagram Twitter Facebook YouTube



All Natural Since 1876

I WORK FOR BEER



**At Briess we work for beer. From our growers to our maltsters, we're as passionate about craft and homebrew beer as you are.** So next time you fire up the kettle, brew with our handcrafted specialty malts and taste the passion for yourself.  
[BrewingWithBriess.com/Homebrew](http://BrewingWithBriess.com/Homebrew) | [info@BrewingWithBriess.com](mailto:info@BrewingWithBriess.com)





# REVISITING THE REFRACTOMETER

IMPROVED FERMENTATION  
MONITORING THROUGH  
REFRACTOMETRY

By Petr Novotný

**W**hile most homebrewers have considerably fewer measurement options than do professional brewers, we still share a desire to obtain consistent and repeatable original and final gravities for our recipes. To accomplish this, we ideally need a tool with accuracy better than 0.001 to 0.002 specific gravity (SG) points. Excluding expensive professional equipment, two tools offer this capability and fit our budget: the hydrometer and the refractometer.

## HYDROMETER BASICS

The hydrometer is a basic piece of homebrewing equipment that is both intuitive and reliable. If you remember your physics classes, you know how the hydrometer works. Archimedes' principle asserts that any object that is fully or partially immersed in a fluid experiences an upward buoyant force equal to the weight of the fluid displaced by that object. In our case, the fluid (wort or beer) has a density that corresponds to the amount of dissolved sugar and/or alcohol. The hydrometer sinks lower (displaces more volume) in thinner wort than it does in denser wort, and we read the specific gravity from a scale printed on the stem of the instrument.



There are just a few challenges in hydrometer measurement, but when we discuss accuracy, we should be aware of them. First, we need a large enough sample to float the hydrometer. About 100 to 200 mL usually does the trick, but this can be a significant amount for someone who brews small batches, especially if one wishes to take multiple samples to monitor the fermentation process. Another disadvantage of the hydrometer is that carbon dioxide ( $\text{CO}_2$ ) in solution increases the hydrometer reading by about 0.001 SG, and density is also highly dependent on temperature. Moreover,  $\text{CO}_2$  bubbles can stick to the hydrometer glass surface and compromise the measurements.

## REFRACTOMETER BASICS

The refractometer solves some of these problems, especially that of sample volume. In fact, the required sample shrinks to just a few drops. A refractometer's reading is only slightly dependent on dissolved  $\text{CO}_2$ . Temperature adjustment of the sample is not necessary because (1) the sample size is small to begin with, (2) the refractometer body cools down the sample, and (3) most refractometers have built-in automatic temperature correction (ATC). The price of a basic refractometer isn't much more than that of a hydrometer, and accuracy is similar after proper calibration. This sounds like homebrewing paradise, doesn't it?

Unfortunately there are some problems that come with using the refractometer

during the fermentation process. The refractometer measures density indirectly through the sample's *refractive index*, which depends on solution composition and concentration. Different substances have different refractive indices, and alcohol's is higher than that of water. Thus, the measured value for a fermented sample is always higher than the real value. Fortunately, the effect isn't random because yeast follows predictable laws of fermentation, and we can account for its behavior. The measured value must be corrected to match a hydrometer reading, and that's where science comes in.

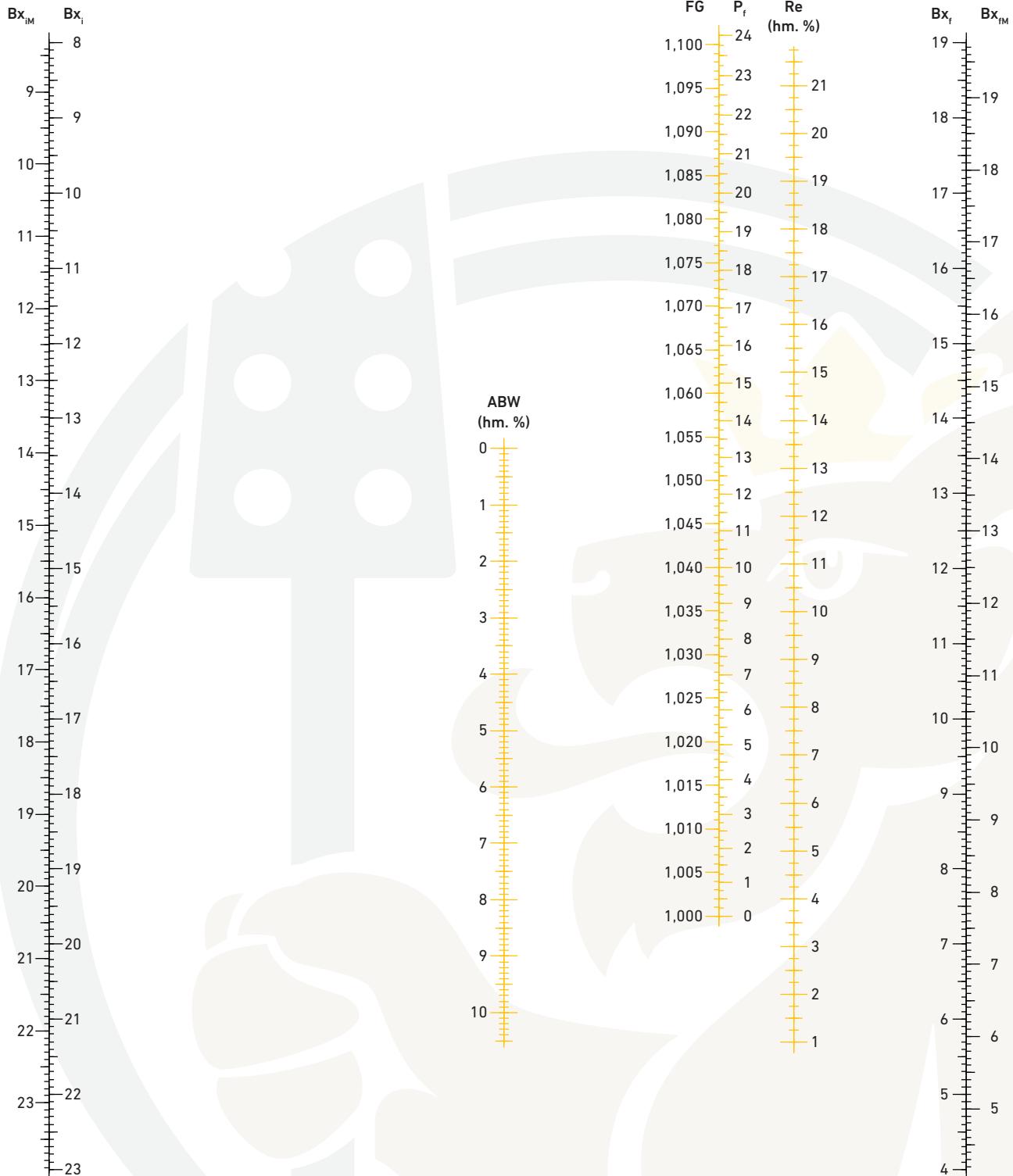
## WORKING WITH THE MEASUREMENTS

As far as I know, there is the only one usable correction that has been published freely on the internet. Sean Terrill did good work in this area and obtained data for different "fully" fermented samples (i.e., finished beer). His resulting formula does a good job for beer with common ranges of attenuation. However, if your yeast doesn't attenuate between roughly 65 and 80 percent, the formula won't work properly for you. If you'd like to monitor the progress of fermentation, you will end up with strange numbers that differ from the reality in your bucket or carboy.

When I first considered this problem, I leaned on my scientific training and headed straight to the literature. I can conduct experiments at home, but with

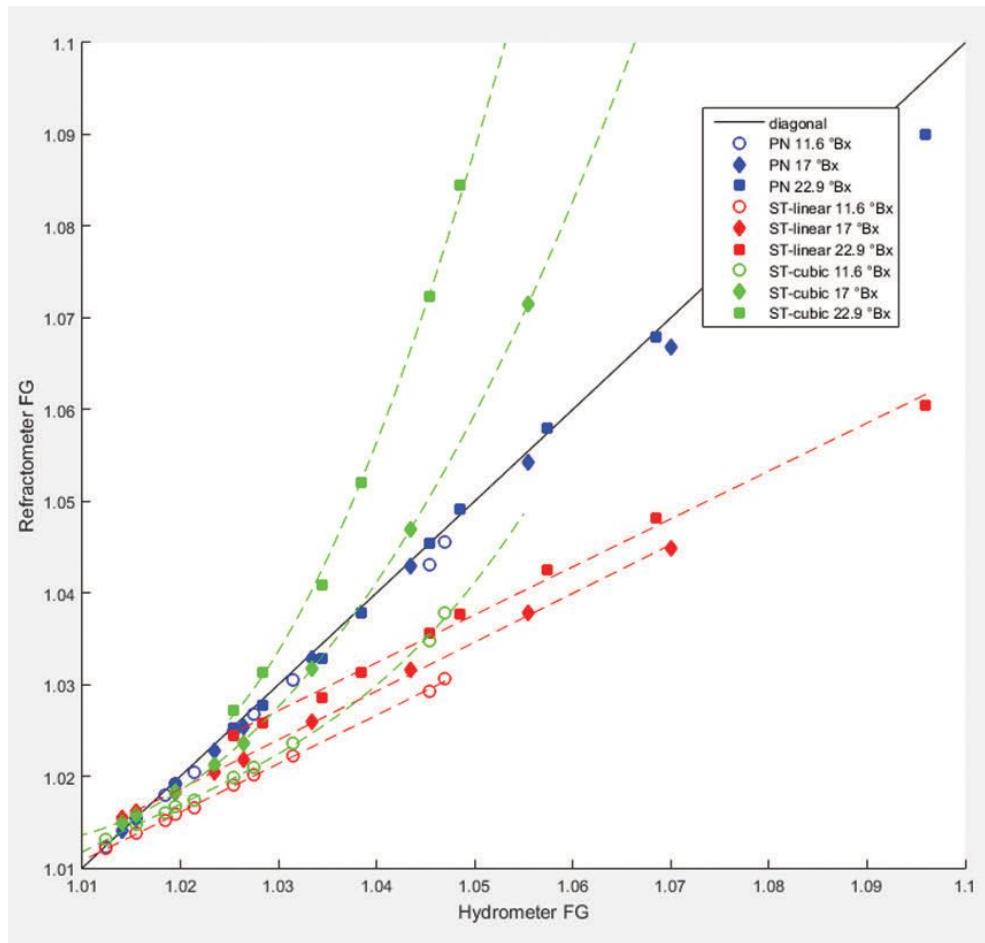


Don't own a refractometer?  
Learn more about hydrometer  
readings to better your beer  
@ [HomebrewersAssociation.org/hydrometer-reading](http://HomebrewersAssociation.org/hydrometer-reading)



Assumed wort correction factor 1.04, thus  $Bx = Bx_M / 1.04$  where subscript M denotes measured value.

**FIGURE 1: COMPARISON OF TERRILL'S AND NOVOTNÝ'S FORMULAE WITH SG MEASURED BY HYDROMETER (CLOSER TO DIAGONAL MEANS BETTER ACCURACY).**



amateur equipment and lack of time, it seemed more reasonable to see what the professionals had already done.

I had an opportunity to consult with Dr. Petr Košin, who works in the research and development department of the Budějovický (Budweiser) Budvar brewery in České Budějovice, Czech Republic. His team published a paper relevant to our problem in 2008, and the equations for real extract and alcohol by weight (ABW) are accurate and useful for “fully” fermented beer as well as for intermediate stages of fermentation.

There is only one complication. As homebrewers, we prefer using *apparent extract* or SG instead of the real extract. Apparent extract is the specific gravity of the working sample that we measure with a hydrometer, what we usually call final gravity. Real extract is the actual sugar concentration of the

working sample. As fermentation progresses, apparent extract deviates from real extract because of the presence of alcohol, the density of which is less than that of water.

So, we need to incorporate the Košin equations into Tabarie's formula (Pfenninger, 1993) and include the conversion factors for wort/beer density and alcohol concentration by weight (Košin, 2009). It requires a bit of engineering and literature review skills and a lot of algebra. I won't bother you with the annoying algebra, but the final equation is as follows.

$$FG = -0.002349Bx_i + 0.006276Bx_f + 1$$

where  $Bx_i$  is the original extract measured in Brix before fermentation (corresponds to original gravity), and  $Bx_f$  is the apparent extract measured in Brix during or after fermentation. Also, the original formulae for real extract (Re) and alcohol

by weight (ABW) would be interesting because these values are usually calculated from less complex and less accurate equations. This gives us a valuable new opportunity to calculate them.

$$\begin{aligned} ABW &= 0.67062Bx_i - 0.66091Bx_f \\ Re &= -0.29388Bx_i + 1.27582Bx_f \end{aligned}$$

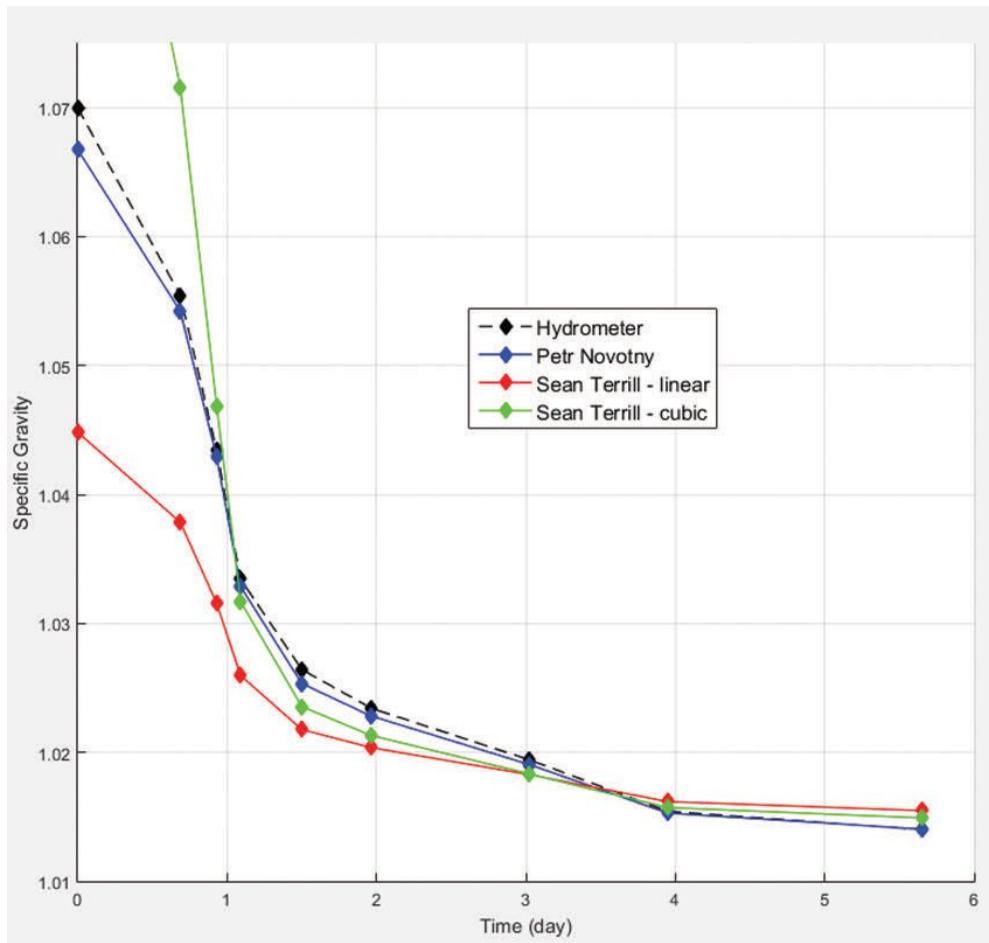
Finally, alcohol by volume (ABV) is more convenient for many of us and is easily calculated from the above values as

$$ABV = \frac{FG \times ABW}{0.791}$$

## VALIDATION

Since the professionals did the real work for us, we didn't need to conduct any experimental data so far. On the other hand, this approach was new and I was curious about its accuracy. Therefore, I decided to run three separate fermentation tests to validate this equation.

**FIGURE 2: MONITORING OF BEER FERMENTATION COURSE BY REFRACTOMETRY, DIFFERENT CORRECTION EQUATIONS.**



**YOU DON'T NEED TO  
WORRY ABOUT USING YOUR  
REFRACTOMETER DURING  
AND AFTER FERMENTATION  
IF YOU USE IT ADEQUATELY,  
ACCURATELY, AND WITH  
THIS ROBUST CORRECTION.**

I used worts having original extracts of 11.6, 17, and 22.9 Brix to simulate a plausible brewing range. The experimental setup was simple. I poured each sample

into a hydrometer jar, pitched K-97 yeasts and kept them at the hydrometer calibration temperature of 60° F (16° C). Then I measured hydrometer and refractometer values at different stages of fermentation. The hydrometer readings were obviously influenced by dissolved CO<sub>2</sub>, which I have accounted for by subtracting 0.00057 SG from the measured hydrometer readings (Ohsumi, 1999). The results are presented in Figures 1 and 2.

The data clearly imply the validity of the improved method. The accuracy of the presented equation is within the experimental error of our usual equipment, approximately 0.001 SG or 0.2° Bx.

As expected, the worst accuracy is found at the first experimental data point. At this stage, fermentation hadn't started yet, and the equation simply converts between SG and Brix. Obviously, using the equation for this point is unnecessary because

no correction is needed. In theory, the deviation at the very beginning of the fermentation may be caused by the different metabolic behavior of the yeast when alcohol production is suppressed in favor of yeast cell growth.

### USING THE NOMOGRAPH

We live in the digital age, but some of us still love paper. For me, a piece of paper and a pen are the tools of choice during brew day. If you are like me or don't like math, I've created a beautiful old-fashioned nomograph. Let's play!

Using the nomograph is simple. Find your initial Brix value ( $B_{xi}$  or  $B_{xiM}$ ) on the left black scale, and then find your current refractometer reading on the right scale ( $B_{xf}$  or  $B_{xfM}$ ). Use a ruler or a straightedge to draw a line between these values across the nomograph. Each place that the line crosses a gold scale represents a result for one unknown

variable. At the same time, just by drawing one line, you've calculated alcohol by weight (ABW), corrected final gravity (FG) or corresponding extract value ( $P_f$ , in Plato degrees), and real extract (Re). Amazing, isn't it?

You can find two options on the black scales. The subscript M denotes quantities that have been directly measured, excluding wort correction factor. The relation between those two options (with and without M) assumes a wort

correction factor 1.04. If you prefer to use a different correction factor, calculate your real Brix value first (divide  $B_{xM}$  by the wort correction factor), then use the scale without the M subscript in the nomograph.

Example: We measured the wort before and after fermentation as 15° Bx and 8° Bx, respectively. Our wort correction factor is 1.08. First, we calculate the corrected values:  
Original extract:  $15^{\circ}\text{Bx} \div 1.08 = 13.9^{\circ}\text{Bx}$   
Apparent extract:  $8^{\circ}\text{Bx} \div 1.08 = 7.4^{\circ}\text{Bx}$

Now it's time for the nomograph to work. By applying the rules mentioned above, you should get 4.4% ABW, a final gravity of 1.014, and real extract of 5.3° Bx. If you want to calculate alcohol by volume, just use the equation above.

## BREW AND ENJOY

Some brewing software does a good job with these calculations. For example, results from BeerSmith are similar to those of the improved equations presented in this article, so it is reasonable to assume it uses a similar approach. I think sharing knowledge is the most important part of homebrewing, and I am happy to share my result with the broad audience of Zymurgy magazine.

You don't need to worry about using your refractometer during and after fermentation if you use it adequately, accurately, and with this robust correction. I plan to use mine more often, starting today!

## RESOURCES

- Košin, P.; Šavel, J.; Brož, A.; Sigler, K. Control and Prediction of the Course of Brewery Fermentations by Gravimetric Analysis. *Folia Microbiol.* (Prague) 2008, 53 (5), 451–455.
- Ohsumi, T.; Nakashiki, N.; Shitashima, K.; Hirama, K. Density change of water due to dissolution of carbon dioxide and near-field behavior of CO<sub>2</sub> from a source on deep-sea floor. *Energy Conversion and Management* 1992, 33 (5-8), 685–690.
- Pfenninger, Heinrich. *Brautechnische Analysenmethoden. Methodensammlung der Mitteleuropäischen Brautechnischen Analysenkommission, MEBAK Band II*. Freising-Weihenstephan: MEBAK, 1993.
- Šavel, J.; Košin, P.; Brož, A.; Sigler, K. Monitoring of Brewery Fermentation Course by Refractometry. *Kvasný průmysl* 2009, 55 (4), 94–99.

## GREAT BREWING REQUIRES THE BEST TEMPERATURE CONTROL

- Convenient switch-selectable COOL or HEAT mode
- Simple, intuitive switchable operation
- Unique Duty-Cycle feature for optimizing temperature stability
- Adjustable Differential setting
- Plug-in, replaceable sensor probe (optional bottle probe for storage)
- Adjustable from 35 – 220°F, with bright LED digital display; selectable °F/°C
- Load capacity @120VAC up to 13A (1500W for Heating)
- Built-in temp and sensor alarms; 3-Year Warranty, Made in USA

Dealer Inquiries Invited

BH Enterprises • (800) 973-9707 • TempStatControls.com • Since 1984



W

### THE WORLD'S BEST COUNTER-PRESSURE BOTTLE FILLER

\* Very easy to use.  
\* True counter-pressure filling without any spillage or loss of carbonation.  
\* Adjustable height for up to 14½ inch bottles.  
\* Now takes growlers up to 5.9 inches in diameter.  
\* Bottle a fully carbonated 5 gallon Cornelius keg in under 30 minutes.

Available at [Amazon](#) | FOR MORE INFO VISIT US AT [WILLIAMSWARN.COM](#)

**Petr Novotný is a Ph.D. candidate in Chemical Engineering at North Carolina State University, an AHA member, and co-founder of the Czech Homebrewers Guild.**

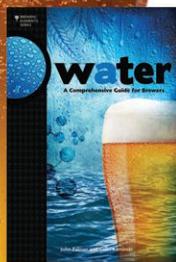


# BREWLAB®

## Brew your best batch every time!

### It's in the Water!

The BrewLab® BASIC test kit for Home Brewers quantifies **6 important water test factors** while the BrewLab® PLUS measures **6 water test factors** and includes a digital pH meter for monitoring batches from start to finish. Experts agree water conditions affect your final product, so take the mystery out of making great beer. Trust LaMotte, the water analysis experts since 1919, to help you control your most important ingredient—water!



Kit developed in cooperation with John Palmer, author of *Water, a Comprehensive Guide for Brewers*.



#### Test for 6 Key Factors

Plus a high quality pH meter

- Total Hardness
- Calcium Hardness (Magnesium Hardness)
- Total Alkalinity
- Sulfate
- Chloride
- Sodium



50+ tests for most factors!  
Digital pH Tester for unlimited pH tests!

**LaMotte**  
Chestertown, MD 21620 800.344.3100



[www.lamotte.com](http://www.lamotte.com)



# FAST & FREE SHIPPING

FREE SHIPPING ON ORDERS OVER \$59\*

1 TO 2 DAY GROUND SHIPPING TO 88% OF U.S. RESIDENTS

#### WHAT'S NEW AT MOREBEER.COM



Kegmenter  
13 G With Ball Lock QDs



NEW! 50 G BrewBuilt  
Brewing Kettle



100 Hop Varietals  
In Stock!



MoreBeer! Pro Tanks  
[Visit MoreBeerPro.com](http://Visit MoreBeerPro.com)



8 New GigaYeasts  
200 Billion Cells Per Pack!



NEW! 14 G Brewmaster  
Brew Bucket

PicoBrew

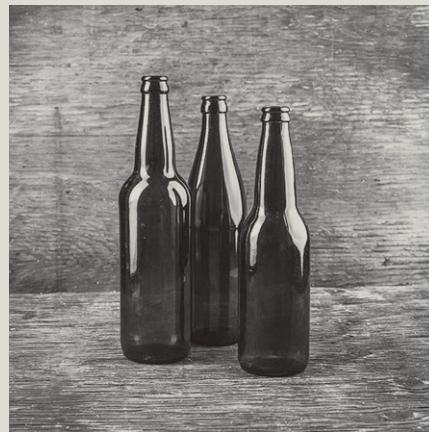
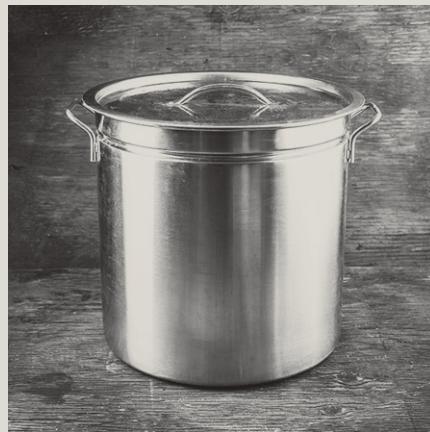
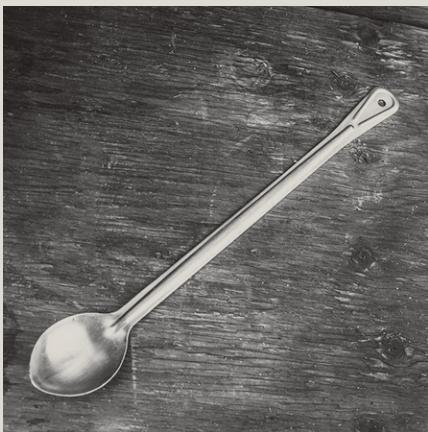


## BREWER'S BEST FRIEND

**PicoBrew Zymatic® is the world's first fully automatic, all-grain brewing appliance.**

Whether you are an established craft brewery, ingredient supplier, or a brewery in planning, the Zymatic® is a valuable tool that can save you precious time and money.

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



# ULTRALIGHT HOME BREWING

Frequent travelers and long-distance hikers understand the importance of packing lightly. They recognize that a few innocent items laid out on the bed at home have a way of morphing into Acme-brand anvils once they're in a bag.

Homebrewing isn't all that different. What begins simply enough as a basic extract kit and a stock pot soon expands to fill kitchens, basements, garages, and then some. Soon, equipment upgrades place their own demands on the brewer, and what once was a hobby has become a monster that requires constant feeding.

In AHA surveys, homebrewers cite "lack of time" as the number one reason they don't brew as often as they'd like. We understand—it happens to us, too.

But it doesn't have to be that way. You've got options. Adopt a scaled-back approach, brew smaller batches, or compress your

brew day down to the bare minimum. Learn to do more with less.

What follows are three ways you can simplify your methods so you have more time for what matters: enjoying a well-earned homebrew.

>>





## FOLLOW THE PATH TO MINIMALIST HOMEBREWING

BY CLINT CHEREPA

*“Simplicity is the ultimate sophistication.”*

—Leonardo da Vinci

Minimalists share the common goal of ridding themselves of excess while focusing on what is most important to them: happiness, freedom, and fulfillment. In this case, beer.

Homebrewing often leans toward being maximalist. In the United States, endless homebrewing supplies, equipment, and ingredients are at your fingertips. Everything you could ever imagine and more is available at the local homebrew shop or a few clicks away on an array of websites. The average homebrewer has a spare room, the basement, or even a garage dedicated to storing and fermenting the good stuff. It is common for a homebrewer to have an extra fridge or two, a special brew stove, and more bottles than they will ever use.

This doesn't work quite so well when you live in a studio apartment or move around a lot.

I started homebrewing in 1998 and quickly filled my basement with bottles and brewing paraphernalia. I recall wandering the pages of homebrew supply catalogs and highlighting all the stuff I “needed.” I soon realized that I had way more than I needed or wanted when we moved from a house to an apartment across the state. It was a pain, but I brought all my equipment, bottles and all. Sadly, the bottles collected a thick layer of dust when I took a sabbatical from homebrewing and I started working for a brewpub that provided me with better beer than I dreamed of making.

Acknowledging my maximalist style of homebrewing really came to light when I moved abroad and had to find a home for my brewing equipment. The bottles

ended up on the curb waiting for the recycle truck to gobble them up.

### THE MINIMALIST HOMEBREWER DEFINED

One of the most popular websites on minimalism, [thememinimalists.com](http://thememinimalists.com), states, “Minimalism is a tool that can assist you in finding freedom. Freedom from fear. Freedom from worry. Freedom from overwhelm. Freedom from guilt. Freedom from depression. Freedom from the trappings of the consumer culture we've built our lives around. Real freedom.”

Freedom sounds like a word that graces most homebrewers' lexicons. I asked some fellow homebrewers what minimalist homebrewing meant to them.

Greg Russell, from Wuhan, China, says, “A minimalist homebrewer seeks to forgo fancy gadgets and bloated setups to make the best beer with the least equipment.”

Russell goes on to explain, "A minimalist homebrewer recognizes that a simple recipe, such as a SMaSH (single malt and single hop) beer can be just as compelling as a kitchen sink recipe with a dozen different ingredients. In some cases, the minimalist will engage in more complex processes than another brewer to achieve a desired result as compensation for the lack of special ingredients."

Another homebrewer who has embraced the minimalist style is Gilad Nachmani, who is behind the website, minimalistbrewing.com. Nachmani shares, "A minimalist homebrewer is someone who seeks the best result with the least effort, making the shortest brewing process (in time and steps) to achieve the most complex beer."

## THE MINIMALIST MINDSET

Lack of space forces some to go minimal. Some want to have less clutter and less to worry about, and others choose to go the minimalist route for deeper reasons.

I queried Bob Schneider, who has been making beer since 1990 and has taught around 25 people how to brew over the years, about the minimalist mindset. He says it could be about efficiency, getting it done fast, or a work-smarter-not-harder mindset. He says, "The less time you handle the product, the least chance of breakage or spoilage."

Nick Garrard, a homebrewer living in Norwich, England, feels that minimalism can mean different things to different people. Garrard notes, "Some people count the number of items they own; some people extend that mindset to their diet and relationships as well. To me, a minimalist homebrewer is one who only has the equipment that is needed to make good beer."

Every homebrewer wants to end up with great beer. Going to great lengths to perfect the craft is what we love to do.

This approach goes along nicely with Steve Ruch's ideas. Steve writes about homebrewing and has 18 years of experience. To him, a minimalist homebrewer is "someone more interested in the



results than having all the latest gear." He explains, "I keep (most of) my recipes to the lowest level of complexity that will achieve the results that I want."

## BENEFITS OF MINIMALISM

The reason I have chosen to go minimalist is out of necessity and lifestyle. What are some of the other benefits of going minimal?

"On forums, you read thousands of comments from people who say their partner gets fed up with the house being full of brewing stuff, so minimalism certainly keeps your significant other happy!" says Garrard.

Two more benefits highlighted by Greg Russell are that "minimalist homebrewing is not only much cheaper than going all-out, but the narrower focus of a minimalist homebrewer often leads to better beer than a brewer who focuses on too many things at once."

Nachmani feels he can brew more beer more often with the minimalist approach. "Mainly in terms of variety and experimentation options," he notes, "at this point I will make five out of six brews an experiment of some kind with only occasionally making my 'regulars.' The minimalist setup means less time each brewing day, and it is a setup that even allows me to brew two or three beers in one go."

## THE SEARCH FOR MINIMALISTS

I began my search for minimalist homebrewers on the internet. There were no homebrewers that I could find in Nicaragua. They may exist, but they do not have an internet presence. I also looked to Costa Rica, since a nascent homebrewing scene is emerging there.

Beer forums were the best source of knowledge I could find. They are where a person can find thousands of homebrewers who have walked the walk, brewed the brew, and carved out the groove for us to brew in.

Getting started as a minimalist is easier said than done. How can you cut down on equipment, minimize supplies, and keep it simple without sacrificing the quality of your brew?

The forums are ringing with brew-in-a-bag (BIAB) enthusiasts. Gilad Nachmani has seen good results with this method. He says, "Sticking to BIAB has been the main way to stay minimalist, and second is choosing small batches. It started out of necessity from living in a small flat in central London but remains my favorite way of making beer despite having the space to create an all-grain setup."

Greg Russell also likes the BIAB setup. He says, "I stick to a single-vessel BIAB setup, a cheap hand-cranked grain mill, and

# BREW-IN-A-BAG CRANBERRY ALE

Recipe courtesy Gilad Nachmani

This is very much a cranberry ale, but it's sour, refreshing, and not too sweet. Light floral tones with a strong sweet-and-sour berry aroma give way to a peppery flavor with a fruity and juicy, tart finish. It's easy to drink, and even when it warms up a little, it still has the fruity sour taste.

**Batch Size:** 8 liters (2.1 US gallons)

**Original Gravity:** 1.043 (10.7° P) @ 60% efficiency

**Final Gravity:** 1.010 (2.6° P)

**Bitterness:** 56 IBU

**Alcohol:** 4.3% by volume

## MALTS

**1.25 kg** (2.76 lb.) pale malt

**150 g** (5.3 oz.) crystal malt

**100 g** (3.5 oz.) Vienna malt

**200 g** (7 oz.) light dry malt extract

## HOPS

**10 g** (0.35 oz.) Target, 12.2% a.a. @ 60 min

**10 g** (0.35 oz.) Simcoe, 12.3% a.a. @ 30 min

**10 g** (0.35 oz.) Simcoe, 12.3% a.a. @ 0 min

## YEAST

**5g** (0.2 oz.) Danstar Nottingham dry yeast

## ADDITIONAL ITEMS

**100 g** (3.5 oz.) dried cranberries @ 30 min

**50 g** (1.8 g) dried cranberries @ 0 min

**150 g** (5.3 oz.) dried cranberries, "dry hop" 1 week

**5 g** (0.2 oz.) dextrose for rehydrating yeast

**39 g** (1.4 oz.) dextrose for bottle priming with 2 volumes (4 g/L) CO<sub>2</sub>

## BREWING NOTES

Mash crushed malts at 65° C (149° F) with 4 L (4.2 qt.) of water for 120 minutes in an insulated pot (wrap in a towel if necessary to maintain temperature). Remove grain bag, drain, and squeeze to yield roughly 3 L (3.2 qt.) of concentrated wort. Top up with 2 L (2.1 qt.) of water for a pre-boil volume of 5 L (5.3 qt.), add dry malt extract, and stir to dissolve.

Dissolve yeast and 5 g (0.2 oz.) dextrose in 500 mL (2 cups) filtered water at 24° C (75° F), and leave to activate while you conduct the boil.

Boil wort for 60 minutes, adding hops and dried cranberries as indicated. Chill, top up to 8 L (2.1 gal.) total volume, pitch yeast, and ferment at 20° C (68° F). A week after brewing, add 150 g (5.3 oz.) dried cranberries and allow to condition for an additional week before bottling.



boiling on my stovetop. I'm working on developing a few 'less-is-more' recipes to be staples and reduce the seat-of-my-pants brewing I do that often leaves me with sub-par beer and leftover ingredients."

Russell also suggests, "Ignore 90 percent of specialty grains and try to use the absolute minimum possible number of ingredients in every recipe. Similarly, limit yourself to a few favorite hop varieties and only venture outside of them when none of them will work for your current brew. Choose a house yeast strain and use it exclusively unless it absolutely won't work for the beer in question (e.g., US-05 for a hefeweizen). Develop a limited number of house recipes and get great at them rather than flitting between recipes and styles every brew day."

There is nothing wrong with brewing to the max, but if you want to cut ties with some

of your stuff and minimize, take Ruch's words to heart: "Do your research. There is a lot of unnecessary gear out there that would be nice to have but can be done without."

For those just beginning, Nachmani suggests starting in the most basic way. Avoid kits but start with extracts and begin learning about all-grain brewing and BIAB. He says, "I truly believe that for most brewers who aren't obsessed with the tiniest of details and controlling the smallest of factors, it's more than enough for making great beer."

Having a low-tech mindset doesn't mean you can't be inventive. Garrard built an all-in-one rig similar to the commercial Grainfather system to help with his minimalist practices. He says, "It does everything you need it to, reliably, and in a relatively small space; however, one thing

# OH MAMA! AMERICAN PALE ALE

Recipe courtesy Gilad Nachmani

This APA has a nice aroma from the Citra and Celeia hops: citrusy, red grapefruit, and berries. It's light-bodied, but there still a creamy malt presence. Hops quickly take over, leaving a crisp, refreshing ale with a full hoppy flavor but no bitter aftertaste.

**Batch Size:** 7 liters (1.8 US gallons)

**Original Gravity:** 1.050 (12.3° P) @ 55% efficiency

**Final Gravity:** 1.010 (2.6° P)

**Bitterness:** 50 IBU

**Alcohol:** 5.4% by volume

## MALTS

**1.5 kg** (3.3 lb.) pale malt

**250 g** (8.8 oz.) dextrose

## HOPS

**10 g** (0.35 oz.) Target, 12.7% a.a. @ 60 min

**10 g** (0.35 oz.) Challenger, 6% a.a. @ 15 min

**10 g** (0.35 oz.) Marynka, 9.3% a.a. @ 15 min

**10 g** (0.35 oz.) Citra, 12.5% a.a. @ 0 min

**20 g** (0.71 oz.) Citra, dry hop 1 week

**4 g** (0.14 oz.) Celeia, dry hop 1 week

## YEAST

**5g** (0.2 oz.) Danstar Nottingham dry yeast

## ADDITIONAL ITEMS

**5 g** (0.2 oz.) dextrose for rehydrating yeast  
**46 g** (1.6 oz.) dextrose for bottle priming with  
2.3 volumes (4.6 g/L) CO<sub>2</sub>

## BREWING NOTES

Mash crushed malt at 66° C (151° F) with 5.25 L (5.5 qt.) water for 90 minutes in an insulated pot (wrap in a towel if necessary to maintain temperature). Remove grain bag, drain, and squeeze to yield roughly 4.5 L (4.8 qt.) of concentrated wort. Top up with 1 L (1.1 qt.) of water for a pre-boil volume of 5.5 L (5.8 qt.), add dextrose, and stir to dissolve.

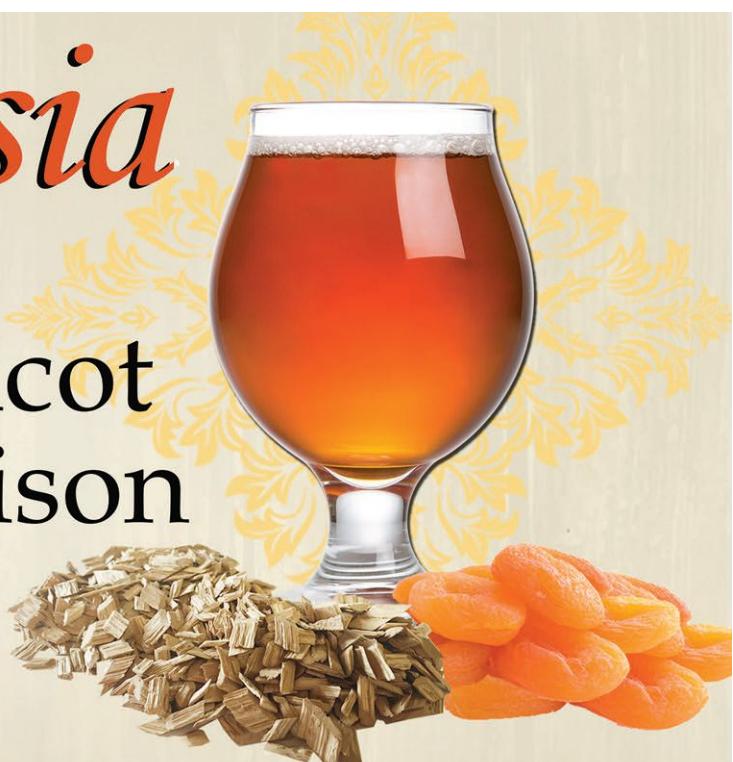
Dissolve yeast and 5 g (0.2 oz.) dextrose in 500 mL (2 cups) filtered water at 24° C (75° F), and leave to activate while you conduct the boil.

Boil wort for 60 minutes, adding hops as indicated. Chill, top up to 7 L (1.8 gal.) total volume, pitch yeast, and ferment at 20° C (68° F). A week after brewing, add dry hops and allow to condition for an additional week before bottling.

# Ambrosia



## Oak & Apricot Imperial Saison



(888) 654-5511



**love2brew**  
Homebrew Supply

**LOVE2BREW.COM/AMBROSIA**

that I try to incorporate into my minimalist approach is that, where possible, everything should have one purpose."

Schneider suggests keeping it simple and doing the least amount of labor. He has made great beers using extract and a few grains that he steeps. He recalls, "I even had Michael Jackson, the beer connoisseur, wonder if I had cloned Chimay yeast when I had taken second place on a Belgian Trappist[-style] ale at the Minnesota Brewfest in 1996."

## THE MINIMALIST SETUP

How does one get started? It is easiest to go minimal if you are just starting out and a bit trickier if you have already been submerged in a maximalist style.

Garrard advises, "If you're starting out keep it simple. Get a couple of 1-gallon [3.8-liter] demijohns and a big stock pot. Use your stove pot initially and really get to grips with how good wort is produced and be hands on with the ingredients."

When it comes down to it, homebrewing really is a minimalist hobby. Schneider suggests this bare-bones setup:

- ❑ Stockpot of 3 to 5 gallons or 10 to 20 liters
- ❑ Primary fermenter with airlock (get the three-piece airlock—it's easier to clean)
- ❑ Racking siphon with bottle filler
- ❑ A big spoon or ladle made of stainless steel
- ❑ 40 empty 16 oz. beer bottles or 56 empty 12 oz. longneck bottles (must be refillable)
- ❑ 40 bottle caps (If you use Grolsch-type "swing top" bottles, you do not need caps or a bottle capper.)
- ❑ Bottle capper
- ❑ Glass carboy with handle and stopper
- ❑ Strainer

## A WORK IN PROGRESS

Homebrewing gives us the opportunity to keep learning, and even going minimalist is a work in progress.

Russell has found that there are many interesting ingredients and useful gadgets

that can save us time and effort. He says, "It's easy to get swept up in the variety or the promise of better, easier brewing."

Garrard agrees. "As homebrewers, we are all aware of the vast catalog of gadgets and things we think might . . . make our lives easier, and the temptation is to buy all kinds of stuff for it. Whilst I do have an automated system now, I try to remember that beer has been around for hundreds of years, before pH meters and temperature regulators."

Homebrewing is a journey that requires patience, perseverance, and a willingness to experiment. We don the hat of the mad scientist to concoct the nectar that pleases our palates. Choosing to go minimalist is just another fork in the road of homebrewing that can satisfy our need to brew.

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



# ALL THE RIGHT FAUCETS

(866) 291-5756  
[MICROMATIC.COM](http://MICROMATIC.COM)



DESIGNER STYLE

304 Grade  
Stainless Steel  
304

STOUT

Perfect for Dispensing  
Nitro Beers  
JESF-4

FLOW CONTROL

On-Demand  
Adjustment  
4933-FC-SS

ROTO TAP

Stainless Steel  
Style Faucet  
4933-ROTO

# INTRODUCING THE GRAINFATHER CONICAL FERMENTER

PROFESSIONAL  
FERMENTATION CONTROL  
FOR HOMEBREWERS



- + BUILT-IN HEATING & DOUBLE WALLED INSULATION
- + DUAL VALVE TAP FOR YEAST DUMP AND SAMPLING
- + HASSLE-FREE CLEANING
- + MULTIPLE FERMENTATION PROFILES
- + MODULAR UPGRADEABLE SYSTEM
- + GLYCOL CHILLER ADD ON AVAILABLE

INTEGRATED  
COOLING SLEEVE

\*ACCURATELY CONTROL  
THE BUILT-IN HEATING UNIT  
OR COOLING ADD ONS

\* INNOVATIVE  
DUAL FUNCTION TAP  
REDUCES CLEANING TIME

\*SOLD SEPARATELY

THE  
**GRAINFATHER**  
ALL GRAIN BREWING



[www.grainfather.com](http://www.grainfather.com)

# SMALL BATCH, BIG FLAVOR, ALL GRAIN

BY CHRIS COLBY



**H**omebrewers come from all walks of life, and assembling a brewery that best fits the brewer's situation can make it a more enjoyable hobby. Although 5-gallon (18.9-liter) brewing setups are standard in extract homebrewing, and 10-gallon (37.9-liter) rigs are common among all-grain brewers, some brewers benefit from a smaller brewery—one that can brew both all-grain beers and partial-mash beers.

Specifically, a 3-gallon (11.4-liter) all-grain brewing setup might be good for apartment dwellers, including college students and urban citizens. The smaller footprint and lower per-batch costs—due to the small size and the lower cost of malt versus malt extract—may be attractive.

Brewers who are just learning, and those who brew prolifically to enter contests, will find that a smaller system lets them brew more batches without being buried in beer. Likewise, brewers who make the occasional batch using an expensive special ingredient will appreciate the cost savings of smaller volumes. And finally, extract brewers who want to try all-grain brewing can use this simple setup to test the waters if they don't have the space or the cash for a larger brewery. If they want to scale up later, they can.

Brewing 3 gallons of beer also has some incidental benefits. For starters, a rolling, full wort boil can be achieved on most kitchen stoves. This eliminates the need to use a propane burner outdoors,

something that isn't an option for most apartment residents. After the boil, 3 gallons of wort can be chilled in a sink or bathtub if the brewer has yet to invest in a wort chiller.

Furthermore, both Wyeast and White Labs packages of yeast contain around 100 billion cells. This is enough to adequately pitch 3 gallons of ale wort at an original gravity of up to 1.049 (according to the Mr. Malty calculator). If you're only brewing 2.5 gallons (9.5 liters), a single package can pitch ale wort up to OG 1.059. So, for most "average strength" beers, you can pitch the optimal amount of yeast without making a starter.

Finally, a 3-gallon batch of beer has a roughly 20 percent higher surface-to-volume ratio than a 5-gallon (18.9-liter) batch, which makes evaporative cooling with a wet T-shirt and a fan more effective. To top it off, it's easy and cheap but doesn't cut any corners with respect to quality.

## EQUIPMENT

A complete 3-gallon all-grain brewery starts with the standard set of equipment for 5-gallon extract brewing, which includes a 5-gallon brew pot. If you're reading *Zymurgy*, you almost certainly have this equipment. If not, beginner set-ups are inexpensive.

Additional items you need include a 3-gallon insulated beverage cooler—the kind with the spigot at the bottom. They are typically used to dispense ice water, iced tea, lemonade, and other cold drinks at outdoor gatherings. This cooler serve as the lauter tun, or a combination mash-lauter tun. A 3-gallon beverage cooler fits easily on most kitchen counters and produces a volume of wort small enough to be boiled on a regular kitchen stove and yield 2.5 to 3 gallons of average-strength wort.

For stronger beers, you'll need a larger lauter tun and perhaps a larger brew pot (and also a wort chiller).

A 3-gallon beverage cooler can hold up to 6 pounds (2.7 kilograms) of crushed grains and enough water—up to 2 gallons (7.6 liters)—for a mash thickness of 1.38 quarts per pound (2.6 liters per kilogram). From a full cooler, a brewer can collect approximately 3.9 gallons (14.8 liters) of wort with a specific gravity (SG) of 1.040 to 1.044. (This assumes a grist

of at least 90 percent base malt and an extract efficiency of at least 65 percent.) This volume can be boiled down to 3 gallons of wort at SG 1.052 to 1.057, or down to 2.5 gallons (9.5 liters) at SG 1.062 to 1.069. For lower-gravity session beers, less grain would be used.

Obviously, homebrewers are interested in many beers that clock in above 1.052. For higher-gravity beers, a larger cooler could be used, or you can add malt extract to hit the target gravity. If you want to stick with

## COPPER ALE

Recipe courtesy Chris Colby

A copper-colored ale with a nice “Fuggly” hop aroma and malty flavor. I designed and refined this to be a flavorful but quaffable everyday beer. If you are hung up on beer styles, you can call it an altbier, although it's really built from the ground up based on the flavors and characteristics I wanted.

**Batch Size:** 3 US gallons (11.4 L)

**Original Gravity:** 1.051 (12.3° P) @ 70% efficiency

**Final Gravity:** 1.010 (2.6° P)

**Color:** 15 SRM

**Bitterness:** 33 IBU

**Alcohol:** 5.3% by volume

### MALTS

<b>4.5 lb.</b>	(2.04 kg) US 2-row pale malt
<b>1.19 lb.</b>	(540 g) Munich malt (10° L)
<b>2.4 oz.</b>	(68 g) aromatic malt
<b>1.8 oz.</b>	(51 g) Victory malt
<b>1.2 oz.</b>	(34 g) chocolate malt
<b>0.67 oz.</b>	(19 g) black malt

### HOPS

<b>0.53 oz.</b>	(15 g) Northern Brewer, 9% a.a. @ 60 min (30 IBU)
<b>0.2 oz.</b>	(6 g) Fuggle, 5% a.a. @ 15 min (3 IBU)
<b>0.2 oz.</b>	(6 g) Fuggle @ 0 min

### YEAST

White Labs WLP001 California Ale, Wyeast 1056 American Ale, or Fermentis Safale US-05 yeast (no yeast starter required)

### WATER

Carbon-filtered tap water, carbonates around 100 ppm, calcium around 75 ppm

### ADDITIONAL ITEMS

<b>1/4 tsp.</b>	(1.2 mL) calcium chloride (optional)
<b>3/5 tsp.</b>	(3 mL) Irish moss
<b>3 oz.</b>	(85 g) corn sugar for priming to 2.6 volumes (5.2 g/L) of CO <sub>2</sub>

### BREWING NOTES

Heat 8.8 qt. (8.3 L) of brewing liquor to 163° F (73° C) and mash grains in your brew pot at 152° F (67° C) for 60 minutes. Stir the mash a couple times and heat briefly to maintain temperature. Heat mash, while stirring, to mash-out temperature of 168° F (76° C). Scoop mash into 3 gal. (11.4 L) beverage cooler lined with a mesh steeping bag. Recirculate wort until almost clear, then run off. Sparge steadily over 45 minutes to collect 3.5–3.8 gal. (13.2–14.4 L) of wort. You will need around 8 qt. (7.6 L) of sparge water, heated to 170° F (77° C) for this.

Bring wort to a boil. If hot break is not big and fluffy, add optional calcium chloride. Once the hot break forms, add bittering hops and vigorously boil wort for 60 minutes. Add remaining hops and Irish moss at times indicated to yield a post-boil volume around 3.25 gal. (12.3 L), topping up with boiling water if needed. Chill wort and rack to fermenter. Your yield should be about 3 gal. (11.4 L). Aerate wort thoroughly, pitch yeast, and ferment at 68° F (20° C). After fermentation stops, let beer settle for 2–3 days, then rack directly to keg or secondary fermenter. Carbonate to 2.6 volumes (5.2 g/L) of CO<sub>2</sub>.

### EXTRACT VERSION

Substitute 3.25 lb. (1.47 kg) pale malt extract syrup for pale malt. Mash remaining malts at 152° F (67° C) for 60 minutes. Drain, rinse grains with 170° F (77° C) reverse osmosis or distilled water. Dissolve extract completely in wort, then continue to sparge until desired boil volume is reached. Proceed as above.

# THE CURE FROM CORK

Recipe courtesy Chris Colby

This is a dry stout reminiscent of Murphy's Pub Draught, now sold in widget cans. Murphy's stout is slightly mellower and a little less bitter than Guinness. There's also a hint of chocolate and caramel in the malt. In my opinion, it tastes better when carbonated with pure CO<sub>2</sub> than it does when pushed with beer gas. If you like session ales and are disappointed that you can only find Murphy's in widget cans, this is a great recipe to try.

**Batch Size:** 3 US gallons (11.4 L)

**Original Gravity:** 1.038 (9.5° P) @ 65% extract efficiency

**Final Gravity:** 1.007 (1.8° P)

**Color:** 41 SRM

**Bitterness:** 34 IBU

**Alcohol:** 4.1% by volume

## MALTS

<b>3.38 lb.</b>	(1.53 kg) English pale ale malt
<b>1.2 oz.</b>	(34 g) dark crystal malt (90° L)
<b>1.8 oz.</b>	(51 g) chocolate malt
<b>6.0 oz.</b>	(170 g) roasted barley (500° L)

## HOPS

<b>0.54 oz.</b>	(15 g) Target, 10% a.a. @ 60 min (34 IBU)
-----------------	---

## YEAST

White Labs WLP007 Dry English Ale

## WATER

80 ppm calcium, 20 ppm magnesium, 240 ppm carbonate

## ADDITIONAL ITEMS

<b>7.5 oz.</b>	(213 g) cane sugar @ 15 min.
<b>1/8 tsp.</b>	(0.6 mL) yeast nutrient @ 15 min
<b>2.5 oz.</b>	(71 g) corn sugar (to prime bottles for 2.0 volumes of CO <sub>2</sub> )

the 5-gallon brew pot, a 5-gallon beverage cooler could mash 8 lb. (3.6 kg) of grain and 2.8 gallons (10.6 L) of water. This would yield up to 5 gallons of wort at SG 1.040 to 1044. With a little care to avoid a boil-over—perhaps by withholding the final 2 to 3 quarts (1.9 to 2.8 liters) until an equivalent amount of wort has been boiled off—this could be boiled down to 3 gallons at 1.069 to 1.076 or 2.5 gallons at 1.083 to 1.092.

Instead of the customary false bottom, braid, or manifold, a nylon steeping bag large enough to line the cooler holds the grains. A 4-cup (0.95-liter) or similarly sized measuring cup can act as a grant, which is a vessel that temporarily holds

wort. Finally, a large kitchen pot—around 12 quarts (11.4 liters) or larger—serves as the hot liquor tank.

Optional additions include 3-gallon or smaller carboys for conditioning the beer after it has been fermented in a larger bucket or carboy from your 5-gallon brewery. Three-gallon soda kegs can also be found if you look hard enough. If space is your primary concern, a 5-gallon bucket or carboy could be used for primary fermentation, and one or more 3-gallon carboys for conditioning, if you do that. If space is really at a premium, you can ferment 2.5-gallon (9.5-L) batches in 3-gallon carboys, though you'll want to use a blow-off tube.

## BREWING NOTES

Crush dark grains separately from pale malt (you will likely need to tighten the mill gap a bit for the smaller dark grains). In your brew pot, mash grains at 150° F (66° C) in 5.5 qt. (5.2 L) of brewing liquor for 45 minutes. Heat mash, stirring while you do, to 168° F (76° C). Scoop mash into a 3 gal. (11.4 L) beverage cooler, lined with a mesh steeping bag. Recirculate wort, then begin running off. Sparge with about 6 qt. (5.7 L) of 170° F (77° C) water until you yield 2.5 gal. (9.5 L) in your brew pot. Add water to achieve a pre-boil volume of 3.5 gal. (13.2 L).

Boil wort hard for 90 minutes, adding hops as indicated. Your post-boil volume should be slightly over 3 gal. (11.4 L) Keep a separate pot of water boiling in case you need to top up the wort during the boil. Stir in sugar and yeast nutrients for the final 15 minutes of the boil. Cool wort and rack to fermenter. Aerate well, pitch yeast, and ferment at 70° F (21° C). Keg or bottle condition. You can push this beer with nitrogen if you like, but I think it tastes better with “normal” CO<sub>2</sub> bubbles.

## EXTRACT VERSION

Substitute 2.75 lb. (1.25 kg) pale malt extract syrup for pale malt. Steep remaining malts at 156° F (69° C) for 30 minutes. Drain, rinse grains with 170° F (77° C) reverse osmosis or distilled water. Dissolve extract completely in wort, then top up with rinse water until desired boil volume is reached. Proceed as above.

Such a setup is simple and “off the rack”—no need for modifications. And, it works just like a 5- or 10-gallon all-grain rig, only smaller.

## MASHING AND VORLAUF

Using this setup, a brewer has two options. The simplest is to use the cooler, lined with the steeping bag, as a mash-lauter tun. The hot strike water can be poured into the cooler and the crushed grains stirred into it. At this small scale, the mash will likely lose about 4° F (2 °C) over the course of an hour. The exact temperature drop depends on how well insulated the cooler is.

The brewer can also mash the grains in the brew pot and then scoop or pour

them into the cooler when it is time to lauter. Mashing in your brew pot has the advantage that heat can be added to hold the mash temperature more evenly, and you can heat the mash for a final mash-out step. Full step mashes can also be employed this way. You can also stir the mash, which helps improve mash efficiency slightly.

Once the grains are mashed—and transferred to the cooler, if needed—the wort should be recirculated (*vorlauf*). To do this, simply drain 2 to 3 cups (50 to 75 milliliters) of wort from the spigot into your grain (measuring cup or similar), and pour it carefully back on top of the grain bed. Repeat until the wort has cleared substantially.

## LAUTERING

As with mashing, the brewer has two options. The most straightforward is to batch sparge. To do this, simply drain the cooler—via repeated fillings of the grain if necessary—into the brew pot. Then, stir hot sparge water into the cooler, recirculate, and collect the second runnings in the same manner as the first wort. The amount of sparge water used should be slightly less than the volume of strike water employed.

You could also do what I call a pulsed sparge to emulate continuous sparging. To do this, collect 2 to 3 cups of wort in the grain and pour it into the brew pot. Then, take the same volume of sparge water from the hot liquor tank (large kitchen pot) and pour it gently on top of the grain bed. Wait 30 seconds, then repeat. Once you are out of sparge water, drain the remaining liquid from the cooler into the brew pot. If your cooler was full, you should have about 3.9 gallons (14.7 liters) of wort when you're done.

As you might expect, the flow of wort out of the cooler may slow as the nylon bag gets clogged with little bits of grain. This is easy to remedy. Just lift the bag slightly, an inch (a couple of centimeters) at most, and rotate it inside the cooler about a quarter turn. Then, let it settle. Draw a sample of wort to the grain. If it's cloudy after moving the

bag, just add that wort to the top of the grain bed and repeat until clear. Then, collect wort as you had been. If you are DIY type, you could also try fitting the beverage cooler with a manifold similar to those found in larger picnic cooler mash tuns.

## RECIPE CONVERSION

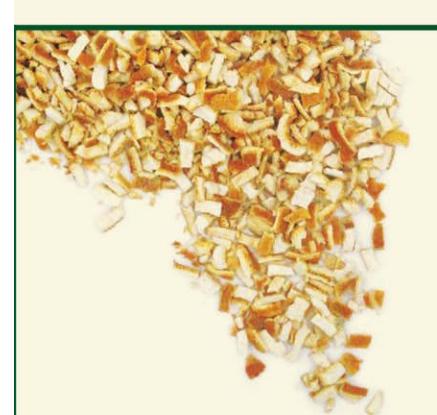
The world is awash in 5-gallon homebrew recipes, but where can you find small batch recipes? There aren't many, but my website ([beerandwinejournal.com](http://beerandwinejournal.com)) has a few. In the absence of off-the-shelf recipes, you'll have to make your own. Luckily, all you need to do is take a standard 5-gallon recipe and multiply all the ingredient amounts by 3/5 or 1/2 to yield 3 or 2.5 gallons, respectively. If the total grist weighs more than 6 lb. (2.7 kg), you'll either need to scale the batch size down further, use a larger lauter tun (and perhaps kettle), or supplement with malt extract to compensate.

## A CONVENIENT SOLUTION

A simple 3-gallon brewery might be the main system for an apartment dweller on a budget. For others, an inexpensive second homebrew configuration permits small test batches, batches of contest beers, experimental beers, or beers that make use of expensive ingredients. Although small in scale, you can exercise complete control over the mash if you do it in your brew pot. Likewise, lautering in a cooler lined with a mesh bag is almost comically simple, but it works.

A brewery doesn't have to be big to turn out big flavor. With a small-batch all-grain setup, you can brew great beer at home, a few gallons at a time.

**Chris Colby has been a homebrewer since the early 90s, when he studied molecular evolutionary genetics at Boston University. After receiving his PhD in 1997, he briefly worked in educational publishing before becoming a beer writer and editor. He is the author of the newly released *Home Brew Recipe Bible* and is currently editor of *Beer and Wine Journal* ([beerandwinejournal.com](http://beerandwinejournal.com)). He lives in Bastrop, Texas, with his wife and many cats.**

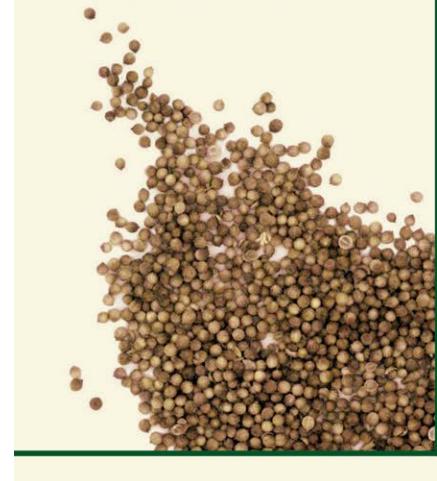


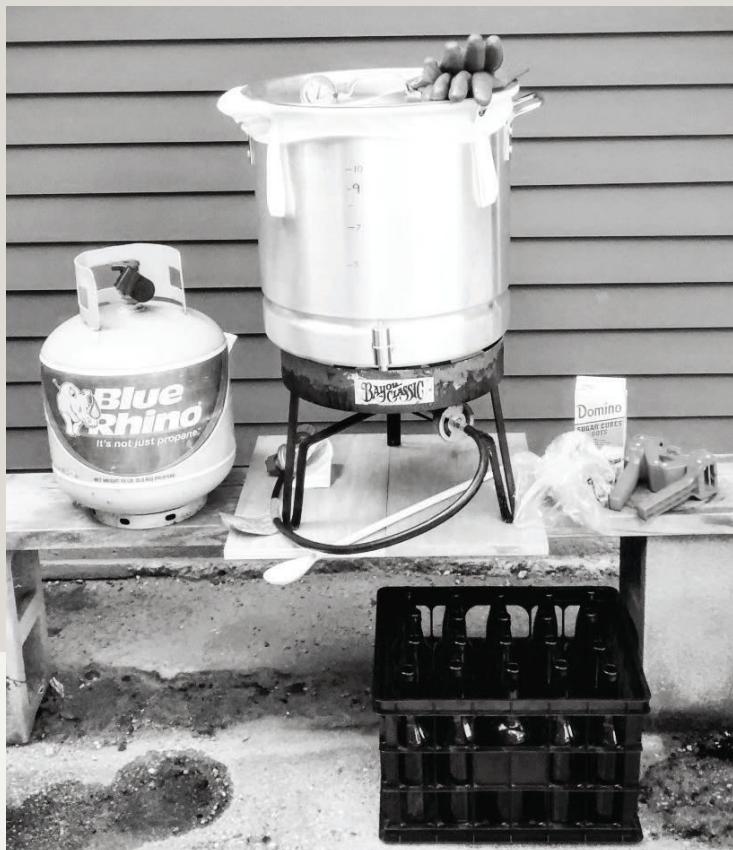
**SAN FRANCISCO  
HERB CO.**  
• Since 1973 •

Wholesale Supplier  
of Quality Spices &  
Aromatic Botanicals

Orange Peel  
Coriander  
Hibiscus  
Lemongrass  
Grains of Paradise  
Grapefruit Peel  
Cardamom  
Rose Hips  
Star Anise  
450+ others

800.227.4530  
[sfherb.com](http://sfherb.com)





## TWO HOURS TO FIVE GALLONS

BY MATT SMITH

In her book *Speed Brewing*, Mary Izett opens with a quotation that hits at the heart of homebrewing as a hobby:

"I used to be a traditional homebrewer . . . Yet if beer brewing has one downside, it's this: it takes a good amount of time. Like most other brewers I know, I had to dedicate a precious weekend day to brew and then more time to monitor the fermentation and bottle the beers. As weeks turned into months, and months turned into years, my life continued . . ."

I think you know where her story ends: less brewing. Time is the downside, to put it mildly. It can be a hobby killer. And although *Speed Brewing* has some brilliant alternative solutions—like

2-gallon brew-in-a-bag (BIAB) batches of low-alcohol beer, mead, cider, and kombucha—it doesn't really offer a way to brew 5 gallons of all-grain beer in a reasonable amount of time.

That's the real question for me. Whether you have a kid, a job, friends, or other hobbies, homebrewing is a selfish bully, sometimes taking up five hours, eight hours, or an entire day. I have never heard a homebrewer say "I brew too much beer." Most of us wish we had more time to brew more beer.

Like many readers, I'm part of a homebrew club that meets every month to share our beers with one other. But, upon entering, I always chuckle at how

many brewers don't have homebrew to share. Even a person like me, who boasts two-hour brewdays, has trouble keeping up with my brewing desires. And when we step back and think about potential homebrewers—curious friends and others who might be interested in the hobby—the situation is much worse. Their first question is "How long?" Followed by "No thanks." Followed by "Can I have some of your homebrew when it's done?"

The solution, in my mind, is not to create more time to brew beer but to question our assumptions about how long it takes to make good beer. Brew-in-a-bag offers one possible solution, which is why that method is so popular now. But even that is a long brew day. Let's dive into my 5-gal-



lon, all-grain, 2-hour brew evening. Not brew day. *Brew evening.*

## HALF AN HOUR

For all my beers, from imperial IPA to Belgian tripel, I conduct a 30-minute mash and a 30-minute boil. This automatically saves at least one hour. I don't pretend to be a scientist, and I don't mean to invalidate established brewing science by questioning the sacred 60-minute mash and boil times. I understand the reasons behind them, but shorter mashes and boils aren't new ideas.

Drawing on the results of a few experiments performed by the Brûlosopher ([brulosophy.com](http://brulosophy.com)), I suggest that, when it comes to 5-gallon batches at home, 30 minutes is plenty of time to convert starches to sugars. Indeed, I've spoken with a professional brewer who claims a mere 15 minutes can be long enough. Our scale is small, and the malts we use are highly modified.

We boil wort, of course, to get bitterness from hops, to sterilize the wort, and to

protect the beer from dimethyl sulfide (DMS). In my short boils, the hops are no big deal. I simply adjust the hop schedule accordingly. For a really bitter IPA, I add more hops at 30 minutes and save money by using a clean and powerful bittering hop like Magnum. Half an hour is more than enough time to kill off spoiling bacteria and wild yeasts, and as for DMS, that's a risk I'm willing to take. In fact, I've taken it 36 times and counting—so far, so good.

## ONE VESSEL

Quoting again from *Speed Brewing*, "A little research led me to the Brew in a Bag method, where the entire brewing process is conducted in the brew kettle."

I love BIAB, but BIAB is not really a one-vessel system. There's still fermentation and packaging, after all. But it should be, and it can.

This is what inspired me to create a true one-vessel system, which I call one-pot brewing, for lack of a better name. If you mash, boil, ferment, and

bottle from one vessel, then you have a true one-vessel system. One pot for the whole process means less cleaning, less racking, less oxygen, and less effort. It's lean and efficient.

What does the pot look like? It's just a 13-gallon (49-liter) aluminum stock pot with a spigot attached 2 inches (5 centimeters) from the bottom. The spigot is for bottling or transferring to a keg, whichever I prefer. The pot is large, light, and heat conductive, and it conveniently comes with a lid. Add a brew bag, a spoon, a pair of heat-resistant gloves, a thermometer, a heat source, a wort chiller, and I literally just explained my brewing equipment.

Oh, I forgot scissors. I need scissors to open the hops, and occasionally a scale to measure hops, but not usually. Goodbye, carboy. Goodbye, mash tun. Goodbye, air-lock. Goodbye, hot liquor tank. Goodbye tubes. Goodbye, cleaning supplies.

I should start by saying, in full disclosure, that I didn't expect my new system



[shop.oconnorshomebrew.com](http://shop.oconnorshomebrew.com)

**\$10.99**

**Flat Rate Shipping**

**Anywhere in the U.S. All Cart Sizes**



## GET PUMPED

The only pump built for brewers is now available!

**RipTide™**  
BREWING PUMP

**\$199.99**

[ORDER NOW](#)



**Inkbird Temperature Controllers**  
**Starting at \$32.99**



to work. This was an experiment, and while I hoped it would work, I had no evidence to back that up. On the contrary, I searched the internet high and low for a similar system and found none. All I found were skeptics and doubters and reasons why it wouldn't work.

Thirty-six batches and two years later, I couldn't be happier with how well it works.

### START THE TIMER

Let's start the mash. I like to crank the heat as I'm filling the pot with mash water. Alternatively, if your hot tap water is safe to drink, starting with hot water saves more time than you think. While waiting for the strike water to reach my desired temperature, I always put the lid on, a considerable time savings. Six to ten minutes later, we are mashing in.

BIAB allows you to dump the entire sack of grains in, all at once. In other words, no "mashing in" for 10 minutes. Because the water-to-grain ratio is so high, dough balls usually aren't an issue. Stir occasionally for better efficiency. Thirty minutes later, I crank the heat, lift the bag of grains out, and squeeze the hell out of them. Remember, the heat is cranked so I'm not wasting any time.

After discarding the grains, now is a good time to "first wort" hop and quickly put the lid back on the pot. Again, this saves a lot of time and maximizes your bittering hops. Getting to boil takes me around eight minutes. During the boil is when I do my "cleaning." I clean my dirty brew bag in the kitchen, wash my gloves, and wash the thermometer. At this point, cleaning for the entire brew session is complete. As we know, most time is usually spent cleaning equipment.

When the short, 30-minute boil is complete, I usually chill with an immersion chiller and stir for about 10 minutes. If the beer gets to 100° F (38° C), I'm happy. Unless it's winter, I feel like chilling for much longer is a waste of my time. Instead, I am fortunate enough to have a fermentation chamber, which chills the beer to its proper temperature while I sit on the couch and have a beer. I do not

count this as "brewing time," and I realize that most people don't have the luxury of a fermentation chamber, but at this point I am under two hours. Pitching the yeast usually means sprinkling dry yeast directly into the wort.

After about a week, I cold crash the beer for a day or so and bottle directly from the bottling spigot, attached two inches from the bottom of the pot. Because my dishwasher has a 'sanitize' setting, I don't mind bottling at all—it does all the hard work. All I have to do is focus on filling about twenty-five 22-ounce bottles with a bottle filler attached to the spigot, which takes about 20 minutes. The entire process takes about 40 minutes with cleanup. Sometimes I transfer directly to a keg, depending on the beer.

Either way, I am left with a nasty pot of trub, yeast, and hops. This is where actual cleaning comes into play. If I'm not lazy, now is a good time to harvest yeast. However, I usually just spray the pot with a hose and set it aside, ready for the next brew session. Sometimes I'll fill the pot with dish soap and hot water. Occasionally I disconnect the spigot and clean it with hot water and soap or OxiClean. The brilliance of using one vessel is that sanitation practices, while still important, are frankly not as critical. After all, it's the boil kettle, and the wort gets boiled and sterilized in the same pot.

I must say that after 36 batches, I've never been happier with my brewing: both the process and the results.

Living at Walden Pond, Henry David Thoreau wrote, "Simplicity, simplicity, simplicity!"

Simplicity indeed.

**Matt Smith is a librarian and home-brewer in Kalamazoo, Mich. Other than brewing beer as fast as possible, he likes to read, work out, drink IPAs, and hang out with his son Immanuel, who is named after a German philosopher.**





# QUALITY MATTERS



## QUALITY IS SANITARY, PROFESSIONALLY WELDED FITTINGS

Featured on all our kettles, conicals and Spike Systems, our pro-level fittings are easy to assemble, easy to clean and won't leak like weld-less designed equipment utilizing o-rings. If you want to step up your beer, step up your gear with SPIKE Brewing equipment.



THICKEST ON MARKET  
304 STAINLESS STEEL



PUSH TO CONNECT  
PICKUP TUBES



FLUSH WELDED DESIGN  
(WELDED IN THE USA)

KETTLE SIZES —

10 GALLON | 15 GALLON | 20 GALLON | 30 GALLON | 50 GALLON

[SPIKEBREWING.COM](http://SPIKEBREWING.COM)



# CRISP *malting* GROUP

*Traditional Malts For Innovative Brewers*



Crisp Malting Group is an independent maltster,  
employing both modern malting plants and traditional floor maltings.

Our largest maltings at Great Ryburgh in Norfolk combines traditional concepts of  
malt production with 21st century technology.

At our historic No.19 Floor Malthouse, we carefully handcraft small batches of malt,  
using exactly the same techniques that have always been used on these floors.

**Master maltsters since 1870.**



[bsgcraft.com](http://bsgcraft.com)

By Amahl Turczyn

# The Inner Sydney Brewers 2017 Harbour City Brewoff

The Inner Sydney Brewers Club hosted its Harbour City Brew-Off on March 11, 2017 at Wayward Brewing Co. in Annandale, a suburb of Sydney, New South Wales, Australia. Organizer Brendan Abbott provided background on the club and how its brew competition has evolved over the years. The club began with a relaxed schedule and a casual approach to the hobby.

"The Inner Sydney Brewers was founded in 2006. In its initial years the club met up at irregular intervals, mainly whenever someone would offer to host a gathering. These were either a big brew day when 200 to 300 liters [50 to 80 gallons] were brewed, transferred to no-chill cubes, then everyone would take one home to ferment. Other times it was a barbecue with both homebrew and commercial beers to try," Abbott explained.

In 2012, several of the members decided they wanted a more formal structure, including regular meetings and topics for presentation and discussion. Abbott described how they found a solution. "One of the members managed to secure a meeting room at their company's office, which is very centrally located. We now meet the first Wednesday of the month and have guest speakers, theme nights, and, as always, have some homebrew to share. Today, the club has about 250 members with around 50 of those taking an active role in monthly meetings, homebrew competitions, and social gatherings. Many are BJCP qualified."

As the club grew and organized, Abbott saw the opportunity for the Inner Sydney Brewers to model a competition of their own after two popular annual Sydney competitions. "In Sydney we had two official homebrew competitions that brewers could enter," he continued. "One is organized by another local



club, the Extra Special Brewers (ESB), which is run in May/June, and the New South Wales (NSW) State competition in August. The latter feeds into our national competition."

Abbott needed to get the timing right for his own competition so it wouldn't interfere with the others. "For several years I tried to get a homebrew competition off the ground by myself. I wanted to hold a competition earlier in the year to give homebrewers and judges another time to use their skills. I also knew that the Inner Sydney Brewers had reached a sufficient size to run a competition. Finally we were ready, so I organized a team, picked a date, and split the work."

As luck would have it, a fellow club member just happened to have the perfect venue in which to hold the event. "We held the inaugural competition at Wayward Brewing in Camperdown, which is in Sydney's Inner West. Peter Philip, the owner of the brewery, is a founding member of ISB and has been an incredible supporter to the competition and the club, providing much of his time, expertise and facilities." From there, it was just a matter of getting the word out.

"I gave about three months' notice for the announcement of the competition from the entry due date. I determined that it would allow sufficient time to brew most of the styles that are judged. The entries were to be

# STRIKE GOLD

WITH CRYSTAL WHEAT MALT

Introducing Crystal Wheat Malt from the rich, golden wheat fields of the Pacific Northwest. Its bready, nutty, and coffee flavors make this malt a tasty addition to your next brew.

[greatwesternmalt.com](http://greatwesternmalt.com)  
#soulofbeer



**GREAT  
WESTERN  
MALT**  
THE HEART OF YOUR CRAFT



## KÖLSCH

Best of show, 2017 Harbour City Brewoff

As a courtesy to our Australian friends, the recipe below uses metric units, with US customary units given in parentheses.

**Batch Size:** 20.8 liters (5.5 US gal.)

**Efficiency:** 70%

**Original Gravity:** 1.048 (12° P)

**Final Gravity:** 1.010 (2.5° P)

**Bitterness:** 30 IBU

**Color:** 3.7 SRM

**Alcohol:** 5.1% by volume

### MALTS

**3.5 kg** (7.7 lb.) Pilsner malt

**1 kg** (2.2 lb.) Vienna malt

**0.1 kg** (3.5 oz.) wheat malt

**0.2 kg** (7 oz.) acid malt

### HOPS

**45 g** (1.59 oz.) Styrian Golding pellets, 5.2% a.a., first wort hop

**10 g** (0.35 oz.) Styrian Golding pellets, 5.2% a.a. @ flameout

### YEAST

White Labs WLP029 Kölsch/German ale yeast

### EXTRA INGREDIENTS

1 tablet Whirlfloc

4 g calcium chloride (added to mash)

### BREWING NOTES

Mash at 65° C (149° F) for one hour. Sparge, running 30 L (7.9 gal) of wort into kettle. Boil down to 25 L (6.6 gal).

### EXTRACT VERSION

Substitute 4.08 kg (9 lb.) of pilsner malt extract syrup and 0.45 kg (1 lb.) Vienna malt extract syrup for the grains. Dissolve extracts in reverse osmosis or distilled water to desired boil volume and proceed as above.

dropped off at the brewery two weeks prior to the comp or at local homebrew shops.

"ISB's inaugural home brew competition, titled 'Summer Lovin' Home Brew Competition,' was held in March 2016 and attracted about 130 entries across

six categories and 13 beer styles. This year's (2017) competition was also held in March, titled 'Harbour City Brew-Off,' had about the same number of entries, though we changed it to be only across five categories and 15 beer styles."

The best-of-show winner this year won some great prizes donated for the Brew-Off. Continued Abbott, "Barry Cranston, a very successful homebrewer in Sydney, was awarded this year's best of show, with an average of 45.5 points for a superb Kölsch, and in doing so won \$500 of Ss Brewtech equipment and a prize pack from 4 Pines Brewing Company."

Cranston, now retired, lives in Panania, a suburb of Sydney. "I brewed a few kit beers in the 1980s," he recalls of his introduction to homebrewing, "but with four young children, the hobby lapsed. With the encouragement of my wife, I started homebrewing again at the beginning of 1997."

Cranston began again with kits, but shop owner Mel Robson at ESB Brewing Supplies helped him progress to extract, and then steeped grain brews. "At the beginning of 1998 I started all-grain brewing," he said, and again received "great support" from his wife, who realized he'd have to move out of the kitchen and into the garage.

"I have entered and judged at many club, local, state, and national competitions over the years. A few years back I achieved the rank of BJCP Certified beer judge. I hope to judge at the Australian National Amateur Wine and Beer Show (ANAWBS) one day if possible."

Cranston is a member of the aforementioned Sydney-area brew club ESB. "We are an enthusiastic bunch of brewers. We hold our own ESB competition each year, which is open to all homebrewers."

Well-known as he is to local brewing circles, both amateur and professional, Cranston has also joined forces with a few local micros. "I have been most fortunate to be able to brew collaborative beers with Mountain Goat Brewery in 2010 and Bridge Road in 2012. I like a wide range of beers and I have brewed most styles. I always brew Vienna lagers, Kölsch, foreign extra stouts, ESBs and saisons each year. Following is a recipe for my Kölsch."

**Amahl Turczyn** is associate editor of *Zymurgy*.

**BREWVISION™**  
STEP-BY-STEP BREWING INSTRUCTION  
REAL-TIME UPDATES AND ALERTS  
BEERSMITH™ RECIPE INTEGRATION  
RECORDABLE RESULTS

Available on the App Store COMING SOON TO Google play

## WHAT IF THE MORE YOU KNEW, THE BETTER YOU COULD BREW?

Our latest innovation, the BrewVision® Thermometer, brings real-time data to the palm of your hand. Eliminate the guesswork from your brewing, and focus on what matters most – *your beer*.

BREWING INNOVATION

**BLICHMANN**  
ENGINEERING™

blichmannengineering.com

## KUDOS—BEST OF SHOW

### AHA/BJCP Sanctioned Competition Program

#### August 2016

Mevashlim, 54 entries—Aleksey Radionov, Beer Sheva, Israel.

#### February 2017

SNAFU Winterfest 2017, 120 entries—Sean McMorrow, Las Vegas, NV.

Newcastle Regional Show Brewers Championship, 100 entries—Jason Kidd, NSW, Australia.

24th Annual Peach State Brew Off, 449 entries—Ben Halter, Roswell, GA.

Biela Vrana 2017, 129 entries—Peter Chnupa, Bratislava, Slovakia.

Coal Country Brewers Cup, 36 entries—Rasha Patel, Morgantown, WV.

Copa latinoamericana de cervezas artesanales, 403 entries—Underground Beer Club, Montevideo, Uruguay.

#### March 2017

Lancaster Iron Brewer, 214 entries—Paul Futer, New Holland, PA.

National Brewing Championships, 345 entries—Adrian Crombie, Wee County Brewers, Ireland.

Winter's Warmers, 86 entries—Mark Denys, Wyndmoor, PA.

Fur Rondy Homebrew Competition, 26 entries—Mike Cragen, Anchorage, AK.

Ocean State Homebrew Competition (OSHC), 470 entries—Jamie Burnett, Pawtucket, RI.

WanCup, 169 entries—Ben, Hyogo Prefecture, Japan.

The Scots vs The Irish THC Club-Only Comp, 75 entries—Bill Stehling, Tucson, AZ.

Snake Saturday Irish Only Competition, 15 entries—David Burrows, Leavenworth, KS.

Rocket Rod Kailua Kona Homebrew Competition, 168 entries—Michael Franchini, Captain Cook, HI.

Daegu Stout Smackdown, 41 entries—윤성민, Seoul, South Korea.

Spring Kick Off, 36 entries—Troy Love, Central Point, OR.

Drunk Monk Challenge, 571 entries—Joe Formanek, Bolingbrook, IL.

ISB - Harbour City Brew-Off, 113 entries—Barry Cranston, NSW, Australia.

Mountain View Homebrew Open, 136 entries—David Ronnenberg, Calgary, AB.

Show How Homebrew Competition, 40 entries—Lu Zhen Hong, Taoyuan City, Taiwan.

March Mashness, 161 entries—Wayne Doucette, Big Lake, MN.

Mazer Cup, 500 entries—Thomas Repas, Hermosa, SD.

5th Annual Wyoming Brewers Festival presented by Midas Homebrew Competition, 49 entries—Zack Leuschel-Paul, Cheyenne, WY.

Ensenada Beer Fest 2017, 121 entries—Luis Larios, Mexicali, Baja California, Mexico.

2017 Mashed In Homebrew Competition, 39 entries—Eric Martin, Norman, OK.

2017 State of Franklin Brewoff I, 14 entries—Joe Newland, Limestone, TN.

Dogfish Alehouse Home Brewers Competition, 12 entries—Joseph Osiecki, Fairfax, VA.

Steins' 3rd Annual Home Brew Competition, 18 entries—Karl Konnerth, Redwood City, CA.

Bozeman Brew Off, 67 entries—Shawn Markman, Bozeman, MT.

San Diego Homebrew Festival 2017, 30 entries—Darrel Brown, San Diego, CA.

Iº Concurso CCBR de Cervejas Caseiras, 14 entries—Diovan Cunha, Rio de Janeiro, Brazil.

Márciusi sörförillardom, 141 entries—Péter Juhász-Nagy, Balatonalmádi, Hungary.

Suwancee Beer Festival Homebrewing Competition, 223 entries—Sean Stephenson, Atlanta, GA.

Bataille des Bieres, 50 entries—Bruce Baker, Baton Rouge, LA.

The Merri Mashers 2017 IPA Comp, 77 entries—Joel Broad, Kensington, VIC, Australia.

West Coast Brewers Belgian Beauties, 40 entries—Michael Keenan, Perth, WA, Australia.

Garrison Brewing Home Brew Off, 38 entries—Roger Ringuette, Fredericton, NB, Canada.

2nd Annual Battle of the Brew Clubs, 5 entries—The Grain Trust, San Jose, CA.

IBU Open, 380 entries—Stuart Hemesath, Des Moines, IA.

The Western NY Homebrew Competition - "Amber Waves of Grain," 530 entries—Kevin DiTondo, Cheektowaga, NY.

Brooks Brewing/CRAFT Club Competition, 5 entries—Bill Gornicki, Macomb, MI.

IBD Young Members Home Brew Competition and Exhibition 2017, 57 entries—Jan Hodel.

DC Homebrewers 4th Annual Cherry Blossom Competition, 279 entries—Jonathon Stone, Warrenton, VA.

Ist Annual Port City Plunder, 307 entries—William Spiesberger, Richmond, VA.

31st Annual Bluebonnet Brew-Off, 1,312 entries—Karl King, Colleyville, TX.

California State Fair Homebrew Competition, 665 entries—Pavel Anisimov, Concord, CA.

Wizard of Saaz X, 388 entries—Chris Surak & Jeremy Kearns, Akron, OH.

Los Angeles Belgian Brew Challenge, 78 entries—Joe St. John, Los Angeles, CA.

QUAFF Club Only IPA vs Hoppy Beer, 40 entries—Paul Bicher / Patrick Martinez, San Diego, CA.

IMAS Night at the Brew-seum Battle of the Brew, 89 entries—Andy Scherzinger, Katy, TX.

#### April 2017

Belgian Beerfest, 70 entries—Michael Bowron.

Fools & Fans Beer Fest, 14 entries—Wouter Cronje, Helderberg, WC, South Africa.

Olde Hickory & Howard Brewing Pro Am, 206 entries—Jody Hinson, Wilmington, NC.

The Spring Equinox Mead Competition, 28 entries—Peter J. Lamb, Eagle River, AK.

Benoit-Casper Homebrew Competition + Armistice Release, 13 entries—Kolsch, Queers Makin' Beers, Berkeley, CA.

World Cup of Beer, 511 entries—Jason Davis, Arslan Meshovic, Theo Rohr, Oakland, CA.

Arizona Spring Classic, 217 entries—Justin Rawleigh. Betsisa 2017, 110 entries—Omer Lasar, Oranit, Israel. Wolfgang Cup 2017, 16 entries—Anthony Smith, Cape Town, WC, South Africa.

LIBME April Pro-Am, 25 entries—Matt Barker. Jerusalem Craft Beer Fair, 34 entries—Yoav Tal, Jerusalem, Israel.

7º Concurso Interno ACervA Paulista, 54 entries—Ricardo Simoni, Sao Paulo, Brazil.

TRASH XXVII, 285 entries—Justin Goodfellow, East McKeesport, PA.

25th Spirit of Free Beer Homebrew Competition, 406 entries—Ed Bielaus, Rockville, MD.

Jeff Sanders Memorial, 47 entries—James Hilbing Redondo Beach, CA.

Colonial Cup, 285 entries—Joe Domm, Charlotte, NC.

South Shore Brewoff 2017, 212 entries—James Dorman, Mystic, CT.

Prague Homebrewing Competition, 74 entries—Frantisek Rezek, Prague, Czech Republic.

Between the Bluffs Homebrew Competition, 93 entries—Gary Lockwood, Madison, WI.

Gold Coast Amateur Brewing Competition, 220 entries—Luke Ronalds, Upper Coomera, QLD, Australia.

Let's Get Weird Homebrew Competition, 56 entries—Keith Baker, Rising Sun, OH.

ALES Open, 536 entries—Alex Cochran, Langley, BC, Canada.



## KUDOS—BEST OF SHOW

### AHA/BJCP Sanctioned Competition Program

VII Concurso ACervA Mineira de Cervejas Artesanais, 28 entries—*Jeferson Dyonisio de Sá, Belo Horizonte, Brazil.*  
Spring Fling, 362 entries—*Scott Nieradka, Portland, OR.*  
Erie County Fair Home Brew Competition, 182 entries—*Sean Wall, Hamburg, NY.*  
The Great Singapore Brew-Off 2017, 63 entries—*Daryl Yeap, Singapore.*  
King of the Mountain, 153 entries—*Jerry Murphy, North Ridgeville, OH.*  
Academy of Taste, 7 entries—*Jan Roodt, Bloemfontein, Free State, South Africa.*  
Concurso Andaluz Homebrewers (IV Ed.), 45 entries—*Salvador Garcia Montoya, Puerto Santa María, Cádiz, Spain.*  
Nebraska Shootout 2017, 106 entries—*Eric Kennedy, Omaha, NE.*  
21st Annual Chico Homebrew Competition, 258 entries—*Kenneth Berry, McKinleyville, CA.*  
Tucson Homebrew Club 1st Annual Homebrew Competition, 150 entries—*Forrest Mitchell, Tucson, AZ.*  
Titletown Open XXIII, 120 entries—*Jacob Lindholm, Peyton, CO.*  
TippyBrew (And All Styles Too), 135 entries—*Jarrod Doucette, West Lafayette, IN.*  
Upland Brewing Co. UpCup, 73 entries—*Sam Snyder, Fort Wayne, IN.*  
Lunar Rendezbrew, 378 entries—*Kyle Autry, Houston, TX.*

### May 2017

HOWL Annual Homebrew Competition, 11 entries—*Luis Antonio Ponce, Leesburg, VA.*  
II Concurso TREMBIER de Cervejas Artesanais, 110 entries—*Fábio Ferreira Florêncio, Belo Horizonte, Brazil.*  
UNYHA 39th Annual Homebrew Competition, 349 entries—*Phil Boulanger, Rochester, NY.*

# BUILT FOR BREWERS



## The NEW RipTide™ Pump

- Tri-clamp head connection disassembles quickly
- Integral linear flow valve for superior control
- Super quiet
- Stainless steel head rotates 360°
- Convenient power switch
- Air vent valve allows for a primed pump in seconds

BREWING INNOVATION



blichmannengineering.com

**AHA/BJCP SANCTIONED  
COMPETITION PROGRAM CALENDAR**

For complete calendar, competition and judging information go to  
[HomebrewersAssociation.org/pages/competitions](http://HomebrewersAssociation.org/pages/competitions)



**July 1, 2017**

**Welsh National Homebrew Competition**

[homebrewcompetition.wales](http://homebrewcompetition.wales)  
Newport, Gwent, UK

**July 1, 2017**

**Iº Concurso de Cerveja Caseira Vale do Lúpulo**

[facebook.com/Concurso-Cerveja-Caseira-2017-Vale-do-Lupulo-204623202269983](http://facebook.com/Concurso-Cerveja-Caseira-2017-Vale-do-Lupulo-204623202269983)  
Blumenau, Santa Catarina, Brazil  
Entry Deadline: 5/24/2017

**July 1, 2017**

**Copa Cerveza Regia**

Monterrey, Mexico  
Entry Deadline: 6/15/2017

**July 2, 2017**

**Beer Week Cup**

[facebook.com/beerweekACIQ](http://facebook.com/beerweekACIQ)  
Querétaro, Querétaro, Mexico  
Entry Deadline: 7/1/2017

**July 7, 2017**

**Mid-State Fair Homebrew Competition**

[cmsf.fairmanager.com](http://cmsf.fairmanager.com)  
Paso Robles, CA  
Entry Deadline: 7/1/2017

**July 8, 2017**

**Red, White, and Brew**

[longbeachhomebrewers.com/comp/rwb2017.php](http://longbeachhomebrewers.com/comp/rwb2017.php)  
Long Beach, CA  
Entry Deadline: 6/24/2017

**July 8, 2017**

**Toast Under the Oaks**

[nottoway.com/iberville/beerfest/beerfest-index.htm](http://nottoway.com/iberville/beerfest/beerfest-index.htm)  
White Castle, LA  
Entry Deadline: 7/1/2017

**July 11, 2017**

**El Paso County Fair Homebrew Competition**

[brewbrocco.com/competitions/el-paso-county-comp](http://brewbrocco.com/competitions/el-paso-county-comp)  
Colorado Springs, CO  
Entry Deadline: 7/1/2017

**July 15, 2017**

**Antelope Valley Fair Home Brew Competition**

[avfair.com/transplantsbrewing.com](http://avfair.com/transplantsbrewing.com)  
Palmdale, CA  
Entry Deadline: 7/15/2017

**July 15, 2017**

**Deer River BBQ & Brew Fest**

[deerriver.org/event](http://deerriver.org/event)  
Deer River, MN  
Entry Deadline: 7/14/2017

**July 15, 2017**

**Santa Clara County Fair Homebrew Competition**

[thefair.org](http://thefair.org)  
San Jose, CA  
Entry Deadline: 6/24/2017

**July 15, 2017**

**Amador County Fair Homebrew Competition**

[brewangels.com](http://brewangels.com)  
Plymouth, CA  
Entry Deadline: 7/7/2017

**July 15, 2017**

**2017 Ohio Brew Week Homebrew Competition**

[obw.brewcomp.com](http://obw.brewcomp.com)  
Athens, OH  
Entry Deadline: 7/7/2017

**July 15, 2017**

**E.T. Barnette Homebrew Competition**

[mosquitobties.com/Den/Beer/Events/Events.html](http://mosquitobties.com/Den/Beer/Events/Events.html)  
Fox, AK  
Entry Deadline: 7/12/2017

**July 15, 2017**

**6th Annual MVHBC Homebrew Competition**

[mvhbc.com](http://mvhbc.com)  
Lowell, MA  
Entry Deadline: 7/1/2017

**July 15, 2017**

**Dekegger Homebrew Competition**

[dekegger.com](http://dekegger.com)  
Decatur, IN  
Entry Deadline: 6/18/2017

**July 16, 2017**

**Lane County Fair**

Eugene, OR  
Entry Deadline: 7/14/2017

**July 18, 2017**

**Maillard Beer Cup II**

Barbera del Valles, Spain  
Entry Deadline: 6/30/2017

**July 20, 2017**

**Segunda Copa Sudamericana de Homebrewers**

[chilebruers.cl](http://chilebruers.cl)  
Santiago, Chile  
Entry Deadline: 7/3/2017

**July 22, 2017**

**Dunn County Fair Homebrew Competition**

[dunncountyfair.org](http://dunncountyfair.org)  
Menomonie, WI  
Entry Deadline: 7/19/2017

**July 22, 2017**

**2017 Honey Beer Competition**

[honeybeercompetition.com](http://honeybeercompetition.com)  
St. Louis, MO  
Entry Deadline: 7/12/2017

**July 22, 2017**

**Battle of the Brews**

[delawarestatefair.com/p/240](http://delawarestatefair.com/p/240)  
Harrington, DE  
Entry Deadline: 6/1/2017

**July 22, 2017**

**Arvada on Tap**

Arvada, CO  
Entry Deadline: 7/16/2017

**July 23, 2017**

**2º Concurso Nacional Bräu Akademie**

[braukademie.com.br](http://braukademie.com.br)  
São Paulo, São Paulo; BR

**July 23, 2017**

**Austin ZEALOTS Homebrew Inquisition**

[inquisition.brewcomp.com](http://inquisition.brewcomp.com)  
Austin, TX  
Entry Deadline: 7/9/2017

**July 28, 2017**

**Curmudgeon Cup**

[beercomp.triontavern.com](http://beercomp.triontavern.com)  
New Haven, IN  
Entry Deadline: 7/21/2017

**July 29, 2017**

**Master Cup Home Brew Tournament of China #4 Shenyang**

Shenyang, Liaoning, China  
Entry Deadline: 7/28/2017

**July 29, 2017**

**ESB 10th Anniversary HomeBrew Competition - Monster Mash**

[prstemp.wixsite.com/esbcomp/competition-details](http://prstemp.wixsite.com/esbcomp/competition-details)  
Sydney, NSW, Australia  
Entry Deadline: 7/22/2017

**July 29, 2017**

**Funky Buddha Lounge and Brewery End of Summer Homebrew Competition**

Boca Raton, FL  
Entry Deadline: 6/21/2017

**July 29, 2017**

**Operation Fermentation IV**

[cialers.org](http://cialers.org)  
Houston, TX  
Entry Deadline: 6/21/2017

**July 29, 2017**

**Niagara County Fair Homebrew Competition**

[ccniagaracounty.org/niagara-county-fair/ncf-homebrew-competition](http://ccniagaracounty.org/niagara-county-fair/ncf-homebrew-competition)  
Lockport, NY  
Entry Deadline: 7/25/2017

**July 29, 2017**

**2017 German Fest Stein Challenge**

[steinchallenge.com](http://steinchallenge.com)  
Milwaukee, WI  
Entry Deadline: 7/14/2017

**July 30, 2017**

**National Capital Homebrew Competition**

[nchb.ottawabrewing.com](http://nchb.ottawabrewing.com)  
Ottawa, ON, Canada  
Entry Deadline: 6/23/2017

**July 31, 2017**

**Ventura County Fair Homebrew Competition**

Ventura, CA  
Entry Deadline: 7/30/2017

**August 5, 2017**

**First Coast Cup 2017**

[thecask.org/first-coast-cup](http://thecask.org/first-coast-cup)  
Jacksonville, FL

**AHA/BJCP SANCTIONED  
COMPETITION PROGRAM CALENDAR**

For complete calendar, competition and judging information go to [HomebrewersAssociation.org/pages/competitions](http://HomebrewersAssociation.org/pages/competitions)

**August 5, 2017**

**6º Concurso Cervejeiro Caseiro Bierland**  
Blumenau, Santa Catarina, Brazil  
Entry Deadline: 3/17/2017

**August 5, 2017**

**The Niagara College Brewing Competition**  
[ncbrewcomp.brewcompetition.com](http://ncbrewcomp.brewcompetition.com)  
Niagara-on-the-Lake, ON, Canada  
Entry Deadline: 7/27/2017

**August 5, 2017**

**Dominion Cup**  
[jrhb.org](http://jrhb.org)  
Ashland, VA  
Entry Deadline: 7/22/2017

**August 5, 2017**

**Montgomery County Agricultural Fair Homebrew Competition**  
[mcaf.brewcomp.com](http://mcaf.brewcomp.com)  
Gaithersburg, MD  
Entry Deadline: 7/29/2017

**August 5, 2017**

**New South Brew Off**  
[clarksvillcarboys.com](http://clarksvillcarboys.com)  
Clarksville, TN  
Entry Deadline: 7/17/2017

**August 5, 2017**

**Iberian IPA Day 2017**  
[ipaday.cerveceros-caseros.com](http://ipaday.cerveceros-caseros.com)  
El Puerto de Santa María, Spain  
Entry Deadline: 7/22/2017

**August 7, 2017**

**Copa Colombia de Cervezas**  
[copacolombiadecervezas.com](http://copacolombiadecervezas.com)  
Cartagena de Indias, Bolívar, Colombia  
Entry Deadline: 8/1/2017

**August 11, 2017**

**Mevashlim**  
[mevashlim.b7homebrewclub.org](http://mevashlim.b7homebrewclub.org)  
Beer Sheva, HaDarom, Israel  
Entry Deadline: 7/31/2017

**August 11, 2017**

**Kentucky State Fair Homebrew Competition**  
[kystatefair.org](http://kystatefair.org)  
Louisville, KY  
Entry Deadline: 7/1/2017

**August 12, 2017**

**Nebraska State Fair Beer and Wine Competitions**  
[statefair.org](http://statefair.org)  
Omaha, NE  
Entry Deadline: 7/28/2017

**August 12, 2017**

**2017 Michigan Beer Cup**  
[michiganbeercup.com](http://michiganbeercup.com)  
Lansing, MI  
Entry Deadline: 7/21/2017

**August 12, 2017**

**Evergreen State Fair 2017**  
[evergreenfair.org/DocumentCenter/View/604](http://evergreenfair.org/DocumentCenter/View/604)  
Monroe, WA  
Entry Deadline: 8/3/2017

**August 12, 2017**

**Iº Concurso Eu Cervejeiro - Concerveja**  
[concerveja.com.br/concurso](http://concerveja.com.br/concurso)  
Florianópolis, Santa Catarina, Brazil

**August 13, 2017**

**Jeffco Fair & Festival Homebrew Competition**  
[celebratejeffco.com](http://celebratejeffco.com)  
Golden, CO

**August 18, 2017**

**Western Idaho Fair Competition**  
Boise, ID  
Entry Deadline: 8/6/2017

**August 19, 2017**

**VI Concurso Estadual da ACerva Catarinense**  
[acervacatarinense.com.br](http://acervacatarinense.com.br)  
Florianópolis, Santa Catarina, Brazil  
Entry Deadline: 8/12/2017

**August 25, 2017**

**CanFest**  
[canfestbeer.com](http://canfestbeer.com)  
Reno, NV  
Entry Deadline: 8/14/2017

**August 26, 2017**

**Master Cup Home Brew Tournament of China #5 Wuhan**  
Wuhan, Hubei, China  
Entry Deadline: 8/25/2017

**August 26, 2017**

**Chili Pepper Extravaganza 2017**  
[reggiebeer.com/ReggieEntry.php?CompetitionID=IXCJHU1000244](http://reggiebeer.com/ReggieEntry.php?CompetitionID=IXCJHU1000244)  
Broomfield, CO  
Entry Deadline: 8/20/2017

**August 26, 2017**

**Blessed Sacrament Sludge Puppy Homebrew Competition**  
[blessedsacramentsandy.org/fundraising-committee2.html](http://blessedsacramentsandy.org/fundraising-committee2.html)  
Sandy, UT  
Entry Deadline: 8/18/2017

**August 26, 2017**

**2nd Annual San Mateo Fire Fighters Chili Cookoff Homebrew Competition**  
[wortsowisdom.org/2017-san-mateo-county-firefighters-chili-cookoff](http://wortsowisdom.org/2017-san-mateo-county-firefighters-chili-cookoff)  
San Mateo, CA  
Entry Deadline: 8/5/2017



For an up-to-date calendar of AHA and BJCP events go to the Events section of [HomebrewersAssociation.org](http://HomebrewersAssociation.org)

# YES! CANS!

THE PERFECT SESSION BEER

IS NOW IN CANS.

12oz 12-PACKS OUT NOW!



## GOLD MEDAL

World Beer Championships

"Light, fresh citrus hop aroma and flavor. Very refreshing with a good dose of crispness. Easy drinking, a great option for knocking back a few."

Beer Advocate



BREWED & CANNED IN CLIFTON PARK, NY

[ShmaltzBrewing.com](http://ShmaltzBrewing.com) • ShmaltzBrewing



Serving You for Over 30 Years

BEER • WINE • CHEESE  
CIDER • MEAD • SPIRITS

Supplies • Equipment • Advice  
Let us help you make your own!

[www.homebrewery.com](http://www.homebrewery.com)

Ozark, Missouri  
800-321-BREW • (417) 581-0963

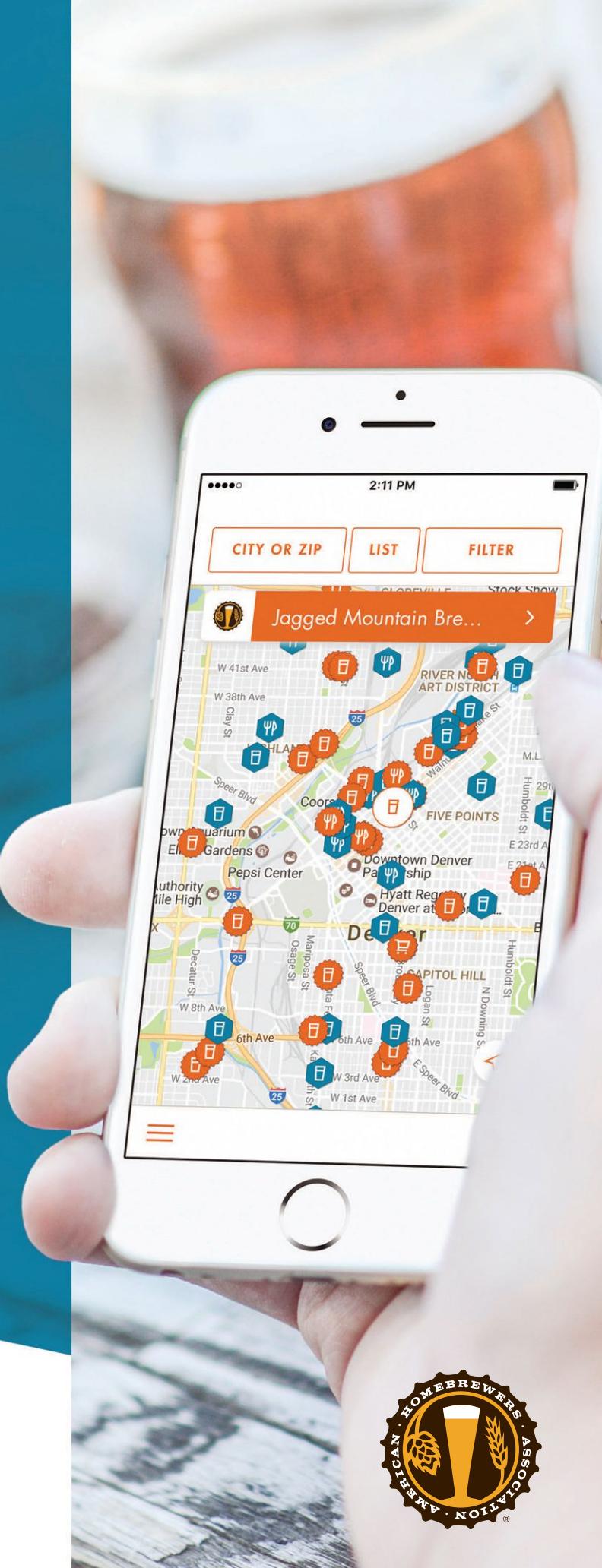


BREW GURU™

# THE PATH TO GOOD BEER

Find local deals.  
Improve your brew IQ.  
Become a Brew Guru.

# FREE!





**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.**

**W**hat do coffee and oysters have in common? Both are luxurious gifts of the earth whose harvest and consumption require an appreciable investment in manual labor. There's dichotomy—oysters are bivalves, and coffee beans come two to a cherry, the elusive peaberry notwithstanding (though peaberries are still more common than pearls). And both oysters and coffee are sensory delights that, as it happens, pair exceptionally well with stout.

In this issue of *Zymurgy*, our judges evaluate two strong stouts: one brewed with the roasted seeds of the fruit of *Coffea arabica*, the other brewed with marine mollusks.

First up is Rise Up Stout from Evolution Craft Brewing Company in Salisbury, Md. Evolution calls Rise Up a “Caribbean-style stout, synonymous with strong full-bodied stouts, infused with coffee . . . rich and dark with a toasted brown head, well balanced, roasty, and full flavored.”

The stout is conditioned on coffee roasted at Rise Up Coffee in Easton, Md., which is located about 40 miles (64 km) northwest of the brewery as the crow flies. Evolution suggests pairing this coffee beer with brunch, black forest cake, espresso-crusted grilled meats, chocolate, and “breakfast for dinner.” Rise Up Stout has 6.7% ABV, 40 IBUs, and undisclosed milligrams of caffeine.

Virtually every brewer succumbs to the urge to drip some coffee into the occasional stout, but fewer opt to add oysters. Oyster and stout pairings date to at least the 19th century, and nearly eight decades have passed since London's Hammerton Brewery first added bivalves to the kettle. The style has seen a bit of a recent resurgence, but we're not ready to call it commonplace. It elicits slightly less puzzled looks than it used to, though (for more on oyster stout, see [HomebrewersAssociation.org/ja17](http://HomebrewersAssociation.org/ja17)).

Marooned on Hog Island is a collaboration between San Leandro, Calif.'s 21st Amendment Brewery and Hog Island

**OUR EXPERT PANEL** includes 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.



**Evolution Craft Brewing Company**  
[evolutioncraftbrewing.com](http://evolutioncraftbrewing.com)

**21st Amendment Brewery**  
[21st-amendment.com](http://21st-amendment.com)

**BJCP Style Guidelines**  
[bjcp.org](http://bjcp.org)

**Commercial Calibration Index**  
[HomebrewersAssociation.org/pages/zymurgy/commercial-calibration](http://HomebrewersAssociation.org/pages/zymurgy/commercial-calibration)

Oyster Company, which farms 160 acres in Tomales Bay. The brewery describes its beer as “a rich and chewy stout brewed with Hog Island Sweetwater oyster shells for a silky, salty finish.”

Marooned on Hog Island has 7.9% ABV and is brewed from pale malt, crystal malt, rolled oats, Carafa malt, chocolate malt, white wheat, and, of course, Hog Island Sweetwater oysters. It is available in four-pack cans and at select draft accounts.

# THE SCORES



Rise Up Stout—Evolution Craft Brewing Company, Salisbury, Md.  
BJCP Category: 30A, Spice/Herb/Vegetable Beer (16C Tropical Stout base style)



DAVE HOUSEMAN



SANDY COCKERHAM



SCOTT BICKHAM



GORDON STRONG

**Aroma:** Big coffee aroma up front with a good deal of dark, dried fruitiness. Crystal and other malts evident. Moderate hop aroma. No DMS. No diacetyl. Low alcohol aroma. Very rich and complex. Beautifully balanced aroma. (11/12)

**Appearance:** Black with ruby highlights. Opaque. Dense, creamy, tan, long-lasting head, but the carbonation dissipates fairly quickly. (3/3)

**Flavor:** Malt sweetness, dominated by roastiness from coffee and malt, gives way to high bitterness from hops and coffee. Lots of coffee flavor that falls off mid-palate, replaced by noticeable alcohol and moderate hop flavor. Some remaining sweetness, appropriate to the tropical stout base, but not cloying. There's a good deal of dark, dried fruit esters from malt and fermentation. No DMS or diacetyl. Coffee dominates the finish with lingering bitterness. (17/20)

**Mouthfeel:** Medium-full body. Somewhat creamy mouthfeel. Substantial bitterness but no astringency. Quite alcohol warming. Fully attenuated. Moderate carbonation dissipates quickly—could be more highly carbonated. (4/5)

**Overall Impression:** A very nice, semi-sweet tropical stout infused with lots of coffee aroma and flavor. Exactly as advertised. Well-executed. The base beer (tropical stout) and the special ingredient (coffee) are both identifiable, complementary, and balanced. An excellent sipping beer or accompaniment to a late-night burger or morning brunch. (8/10)

**Total Score: (43/50)**

**Aroma:** Moderate dark malts, dark chocolate, and roast lead, along with an undertone of caramel. Moderate coffee aroma akin to medium-dark roast. Very low notes of green pepper (minus the heat) and no hop aroma. Clean fermentation character. The aroma comes across as rich and complex with a very low note of smoke. (10/12)

**Appearance:** Deep brown, opaque body. Moderate tan head with average retention falls to a frothy tan skim of foam. It has a dark, oily appearance, but the head is easily roused. (3/3)

**Flavor:** Big malty flavor with medium-high bittersweet chocolate, a hint of roast, a touch of anise and smoke, and medium-low bread and toast. Medium-high bitterness but no hop flavor. Coffee is still here, but the punch of the stout itself overshadows most of it until the chilled coffee finish lingers on the palate. A little bit of that pepper character here, too, but it fits. No esters. As the beer warms, the coffee is even more apparent. (16/20)

**Mouthfeel:** Medium-full bodied with moderate carbonation. Alcohol is moderate but doesn't come across as overly warming for the style. The finish is dry and lingers with a medium-low level of roast astringency. (4/5)

**Overall Impression:** A complex and enjoyable coffee stout. The chocolate tones play nicely with the coffee. The slight green pepper note is likely coffee derived and doesn't detract from the overall experience. I would have enjoyed a bit more coffee character coming through in the flavor. Well-made and quite enjoyable to drink. (8/10)

**Total Score: (41/50)**

**Aroma:** Initial aroma is strong but smooth coffee without any harsh roasted notes. There are moderate-low notes of mocha and chocolate, but focus is on the coffee with malt playing a supporting role. A low level of alcohol creeps out as the beer warms in the glass. I also pick up some spiciness reminiscent of roasted poblano peppers. (11/12)

**Appearance:** Moderate carbonation, but head forms very briefly before sizzling away into the atmosphere. Color is very dark brown with exceptional clarity. (2/3)

**Flavor:** Malt character is more evident in the flavor than in the aroma, with medium-low toasted notes and a light caramel sweetness that helps balance the coffee. Bitterness is moderately high, with contributions from hops, coffee, and roasted malts. The finish is quite long and dry and is pleasant except for some burnt, smoky notes that pop up a few seconds after swallowing. There is not much fermentation character evident, but the roasted pepper notes add some spicy complexity in the flavor. (16/20)

**Mouthfeel:** Full body. Creamy. Medium carbonation. Warming quality grows, becoming a touch hot. Very nice smooth, silky texture. (4/5)

**Overall Impression:** Congratulations on designing and executing a well-crafted beer that makes even a non-coffee drinker appreciate the marriage of coffee and beer. The low level of slightly harsh burnt notes in the finish was the main distraction, and better conditioning could enhance the appearance and mouthfeel. Well done! (9/10)

**Total Score: (43/50)**

**Aroma:** Coffee is moderately light and has a freshly cut green bell pepper or poblano-like aroma that comes from the coffee roasting. Fermentation character is very clean. No hops, not getting alcohol. Just a rich, clean coffee character but not very intense. (10/12)

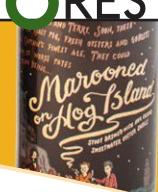
**Appearance:** Very tall head, light brown in color, great retention. Black. Opaque. (3/3)

**Flavor:** Coffee comes through with a milk chocolate background and medium bitterness. The coffee has an espresso edge to it. Light vegetal pepper note is not as strong as in the aroma. Very clean fermentation character. Seems a touch sweet up front, but the alcohol and bitterness counter (it fits the style more than my preference). Light hops. Not much fruit except in the pepper note. Clean, bitter coffee aftertaste like espresso with sweetener. (16/20)

**Mouthfeel:** Full body. Creamy. Medium carbonation. Warming quality grows, becoming a touch hot. Very nice smooth, silky texture. (4/5)

**Overall:** Clean and fairly well balanced. A little hot, could benefit from some additional aging or conditioning. Espresso-like. The green pepper character really doesn't belong. Very clean fermentation character and very smooth—those are great attributes in this style. (8/10)

**Total Score: (41/50)**



## THE JUDGES' SCORES FOR MAROONED ON HOG ISLAND



**Aroma:** Light roast malt with hints of fruity esters, breadiness, and noticeable chocolate character. No roasted barley aroma. More porter than stout. No hop aroma. No specific oyster, fishy, or briny aromas. No DMS. No diacetyl. No overt alcohol. (8/12)

**Appearance:** Very dark brown, bordering on black with ruby highlights. Almost opaque but clear. Rocky, tan head with initially fair retention falls rapidly. (2/3)

**Flavor:** Sweet roast malts with high hop bitterness, typical for a stout. Crystal and chocolate malts seem to dominate. Little to no hop flavor. No oyster, fishy, or briny flavors. No DMS. No diacetyl. Alcohol is very subtle and not evident in flavor. There is some chalkiness that might be attributed to the carbonates from oyster shells. (16/20)

**Mouthfeel:** Smooth, creamy mouthfeel. Full body. Some lingering bitterness and astringency. Alcohol is warming but subtle. Carbonation dissipates quickly to nearly flat. (3/5)

**Overall Impression:** A good basic stout that seems more London porter than stout. The oyster character seems to only be present in the addition of carbonates the shells added to the water—no oyster, fishy, or briny character—resulting in a British strong ale. Additional complexity from hop aroma/flavor, roasted barley and more oysters would have been nice. If this beer didn't say "oyster stout," I would not have known they were there, so don't fear this beer if you don't like oysters! I'd certainly recommend this to drink with oysters, either raw at the bar or as Oysters Rockefeller. (7/10)

**Total Score:** (36/50)

**Aroma:** This begins with complex maltiness; notes of chocolate, a hint of coffee, a bit of caramel, and a medium-low note of roast. No hop aroma, moderate funky earthiness and a hint of umami. Medium-low sweet alcohol and very slight oxidized tones (more sherry than paper) are pleasant and add extra complexity. A low note of generic fruitiness. (8/12)

**Appearance:** Dark brown with good clarity. The moderate, dark tan head is mostly fine bubbles with some froth mixed in. Head retention is fairly good, and the head is easily roused. (3/3)

**Flavor:** I first notice medium-high malt that blends dark chocolate, coffee, a hint of caramel, and moderate but firm roast. It has a slightly smoky tone and high bitterness but no hop flavor. Medium-low astringency from the roasted malts marries with the bitterness. I note an earthy quality that I assume is from the oyster shells. Alcohol and roast dry out the finish considerably. The finish is slightly mineral yet pleasant. (16/20)

**Mouthfeel:** Medium-full body is coupled with medium-high carbonation that gives a light carbonic bite. The beer is moderately creamy despite the light roast-derived astringency in the finish. There is low alcohol warming. (4/5)

**Overall Impression:** I found this to be a delicious and complex stout. The earthy quality with notes that are more umami than briny make it an interesting sipper. It's quite enjoyable on its own, or it would be great with well-paired food. The chocolate on the nose grows as the beer warms and invites me back for another sip. (7/10)

**Total Score:** (38/50)

**Aroma:** Initial aroma has moderately high semisweet chocolate notes, followed by low levels of roasted coffee beans and a little smokiness. I also pick up low levels of alcohol but none of the brininess I expect in this style. Low toffee notes emerge as it warms, along with moderate fruity esters that recall pears. (10/12)

**Appearance:** The color is very dark brown with excellent clarity. Head is beige and creamy and has good retention, leaving nice lace on the glass. (3/3)

**Flavor:** Initial notes of toasted malts and low levels of chocolate and toffee sweetness fade into a dry, bitter finish that is more driven by roasted malt than by hops. I pick up some of the brininess I sought in the aroma, but it adds more background sweetness than saltiness. In the middle are moderate fruity esters and moderately low alcohol notes from the fermentation. (14/20)

**Mouthfeel:** The creaminess and carbonation are both moderate and are evidence of the quality of the conditioning. Moderate alcohol warmth is at an appropriate level. A lingering roast astringency leaves a charred sensation after the beer is swallowed. (3/5)

**Overall Impression:** This is a good example of the style, but I would like to taste the base beer separately for comparison. The roasted, smoky character in the base beer is fairly intense, and that may be doing a disservice by making it difficult for the taster to detect the sweet, salty character in the oyster stout. But it certainly is an interesting beer and gets bonus points for creativity. (7/10)

**Total Score:** (37/50)

**Aroma:** Moderate coffee and dark chocolate. Hints of chalkiness with a rougher roasted edge. A bit metallic. Light alcohol, not hot. Fairly clean otherwise. Very light hops and fruit. Aroma is mostly about dark grain. (9/12)

**Appearance:** Black. Opaque. Moderate-sized tan head with good retention. (3/3)

**Flavor:** Roasty and a little burnt. Fairly bitter (medium-high). Rough finish. Alcohol flavor is a bit sharp. Roast has a ground coffee and dark chocolate quality, almost like unsweetened chocolate. A little sweet in the finish but not enough to counter the bitterness. I'm not getting anything related to oysters, really. Moderate floral hop flavor. Medium-low fruit. Dark malt or grain is most prominent. Bitter aftertaste with a little sweetness. (14/20)

**Mouthfeel:** Creamy yet not thick. Medium-full body. Noticeably warming, a little hot. Medium-high carbonation. Roasted astringency noted. (3/5)

**Overall Impression:** A bit rough around the edges. Kind of big; it needs more age and conditioning to smooth out or reduced ABV to make it more drinkable. Nice chocolate and coffee flavors, but the alcohol, harshness, and bitterness detract. Not getting anything really suggesting oysters, brine, or the sea. Clean, but seems young. Mentioning oysters seems a bit gimmicky since it failed to deliver that impression. (7/10)

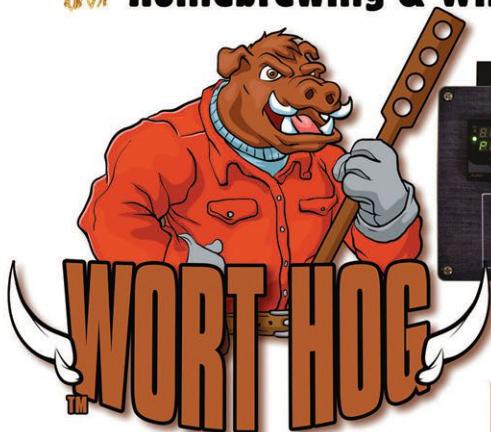
**Total Score:** (36/50)



# High Gravity

Homebrewing & Winemaking Supplies

No Payments + No Interest  
if paid in full in 6 months  
on purchases of \$99 or more  
Check out with PayPal  
and choose PayPal Credit  
Subject to credit approval. See website for details. 18+ individuals only.



[info@worthog.net](mailto:info@worthog.net)

**WORT HOG.NET**

wholesale inquiries welcome

Electric Brewing Controllers for Homebrewers  
It's a whole new animal...

**918-461-2605**

[www.highgravitybrew.com](http://www.highgravitybrew.com)

DISCOVER LALLEMAND BREWING'S FULL RANGE OF PREMIUM BREWING YEAST

**BRY-97**  
AMERICAN WEST COAST ALE YEAST

PURE AND CLEAN - WEST IS BEST

[www.lallemandbrewing.com](http://www.lallemandbrewing.com)

**FERMENTATION RANGE**  
15°C to 22°C (59°F to 72°F)

**FLOCCULATION**  
High

**ATTENUATION**  
Medium to high

**ALCOHOL TOLERANCE**  
13% ABV

Lallemand's **BRY-97 premium yeast** was specifically selected from the Siebel Institute Culture Collection for its ability to deliver high quality ales. Its neutrality allows for the flavor and aromas of hops and malts to shine through, making BRY-97 a top choice for American West Coast Style Ales.

**LALLEMAND**

By Emily Hutto

***Pro Brewers Reflect on Their Homebrewing Roots***

# Jeff Tyler, Spice Trade Brewing Co.

**Editor's Note:** Many pro brewers continue to homebrew even after years or decades of brewing commercially. Homebrew Homecoming is a series in which we invite the professionals to reflect upon their early days as homebrewers, offering wisdom and recipes to Zymurgy readers along the way. We hope their stories inspire you to brew eagerly and brew often.

"For a lot of homebrewers one of the biggest bottlenecks is not being able to brew as often as we would like because we can't drink all that beer," says Jeff Tyler, the head brewer at Spice Trade Brewing, which recently rebranded as a standalone brewery located at The Yak & Yeti restaurant in Arvada, Colo. "So my advice to homebrewers is get some roommates. And if you live with your girlfriend and she doesn't like beer, break up with her and then get some roommates," he jokes.

Luckily for Tyler, his girlfriend supports his hobby, now profession, and back in his homebrew days he had four roommates who all enjoyed the eight-tap kegerator that he custom built for their apartment in Boston. "They were stoked, and they gave me the ability to keep trying new recipes," Tyler says.

He tried so many recipes, in fact, that he had to move his homebrew system to an industrial space that he rented with some engineer friends. "I rented the space so I could brew in wintertime. Its 600 square feet had me [brewing], one designing an art installation for Burning Man, and another friend who was a woodworker designing guitar capos. He'd be sanding those down, I'd be brewing up some beer under a hood I built . . . it was like a little co-op."

Tyler was working as a mechanical engineer during his homebrew days, and he says that job greatly impacted his craft. He was constantly building new equip-



ment—"too much equipment"—such as the control box and automated gas valves on his 10-gallon Ruby Street system. "It's a stock system that I geeked out on a bit because I wanted mash and hot liquor tank temperature control," he says proudly. "Even my burners were controlled by digital controllers."

The excess of equipment that Tyler was building translated to an excess of beer that he was brewing. "I would be in my little brew lab for eight hours a night after working all day," he recalls. "It got to the point where I needed to make the jump into professional brewing. I was so much happier when I was brewing beer."



Photos © Alamy (yeast starter); courtesy Jeff Tyler (brewery);  
Spice Trade Brewing Co. (Jeff)



Learn more about yeast with the  
Brewers Publications Brewing  
Elements Series of books.  
[BrewersPublications.com](http://BrewersPublications.com)



## HOW TO MAKE A YEAST STARTER

By Jeff Tyler,  
Spice Trade Brewing Co., Arvada, Colo.

The goal with making a yeast starter is to ensure that you have a healthy, active, and adequately sized culture of yeast to pitch into wort. A yeast starter is essentially a very small batch of beer, 2 liters (0.5 gallon) as opposed to 20 liters (5.3 gallons). This small batch of beer serves as a food source for a commercial package of yeast to reproduce, which increases the cell count to the proper level for the beer being brewed. It also ensures that your entire culture of yeast is actively metabolizing sugars when you pitch it into your wort. There will be less lag time and less shock, and the yeast can start turning your boring wort into magical beer more quickly!

### How Much Yeast?

The number of yeast cells you need depends on the starting gravity of your beer (how much sugar needs to be consumed) and the total volume of the batch. This value is typically given in number of cells per milliliter of wort per degree Plato ( $1^{\circ}$  Plato is approximately 4 specific gravity points). The recommended pitching rate for an ale is 0.75 to 1 million cells/mL/ $^{\circ}$ P, but I tend to shoot for the higher end of this range.

An average ale has a starting gravity of  $14.7^{\circ}$  P (1.060) and 20,820 mL (5.5 gallons). This yields 306 billion cells at a pitch rate of 1 million cells/mL/ $^{\circ}$ P. Since most homebrew yeast pitches only have 100 billion cells in them, a starter helps you hit the correct pitch rate.

### What You'll Need

At minimum, the only extra equipment you need is a large glass or plastic jar that can hold about 0.75 gallons (2.8 liters). You could even use a spare pot in short order. For the most efficient growth, I recommend getting a 2,000 mL Erlenmeyer flask, a stir bar, and a stir plate. This super-scientific looking setup will allow you to continuously mix your yeast starter over a 24-hour time period and will maximize your cell growth.

### Yeast Starter Recipe

This recipe yields enough yeast for a 5.5-gallon batch of  $14.7^{\circ}$  P (1.060) wort. You can use the resources listed below to adjust for larger and smaller batches of different starting gravities. Be sure to make your starter 24 hours before you plan to brew!



**8 oz.**

**1/4 tsp.**

**2,200 mL**

**1 package**

(227 g) light dry malt extract

(1 mL) yeast nutrient

water (target 2,000 mL final volume and  
adjust based on your evaporation rate)

brewer's yeast (typically 100 billion cells)

Bring water to a boil. Meanwhile, sanitize your vessel (Mason jar, Erlenmeyer flask, etc.), stir bar, and funnel (if using). Once water is boiling, remove from heat. Add dry malt extract and yeast nutrient, and stir to dissolve. Return to heat and boil for 15 minutes. Cool in an ice bath until the temperature reaches  $70^{\circ}$  F ( $21^{\circ}$  C). Pitch yeast and cover flask with aluminum foil. Place on a stir plate or shake periodically to keep yeast suspended and promote oxygenation. After 18 to 24 hours, you will have maximized your culture and will be ready to pitch into wort for the full batch.

### Further Information

A great resource for learning more about yeast starters, and yeast in general, is *Yeast: The Practical Guide to Beer Fermentation* by Chris White and Jamil Zainasheff. There are also many helpful online calculators to help you adjust your yeast starter for different batch sizes and starting gravities. Brewers Friend ([brewersfriend.com](http://brewersfriend.com)) has a great one.

Once you start thinking about your yeast as a living organism, and not just an ingredient, you'll have happy yeast and be making much better beer. Happy brewing!

So in January 2016, Tyler quit his job and sold everything he owned—except for his Ruby Street system. He built a trailer for it and drove it across the country in his Subaru Impreza to Colorado. He landed the head brewer gig at The Yak & Yeti six months later, and that Ruby Street rig took on new life as Spice Trade Brewing's pilot system. The brewery's primary brew-house is a 7-barrel system on which Tyler brews about 350 barrels per year.

The Yak & Yeti is arguably one of the most exotic restaurants in Colorado, if not the country. Pairing Nepalese, Indian, and Tibetan food with Spice Trade Brewing's globally and culinary-inspired beers makes it a destination for beer and food lovers. Many of the beers, like the Chai Milk Stout (Silver, 2013 Great American Beer Festival®) and the Himalayan IPA (Gold, 2010 GABF), haven't changed since the rebrand from Yak & Yeti to Spice Trade.

Some are new to the lineup, including Sun Temple New England-style IPA.

This beer, an adaptation of one of Tyler's old homebrew recipes, is cloned after the infamous Heady Topper IPA by The Alchemist. "I've been drinking Northeast IPAs like Heady Topper and Tree House Brewing's Julius IPA for the last ten years," Tyler says. "To come to a state where it's just starting to catch on is exciting."



## SUN TEMPLE IPA

Recipe courtesy Jeff Tyler, Spice Trade Brewing Co., Arvada, Colo.

*Don't use any cold-side clarifying agents!*

*Haze means there are hop polyphenols in solution, which promote magical, juicy, fruit-forward flavor!*

**Batch Volume:** 5.5 US gallons (20.8 L)

**Original Gravity:** 1.057 (14.1° P)

**Final Gravity:** 1.009 (2.2° P)

**Color:** 6.1 SRM

**Bitterness:** 60 IBU

**Alcohol:** 6.5% by volume

### MALTS

**9.5 lb.** (4.3 kg) pale malt

**6 oz.** (170 g) Weyermann CaraAmber

**2 oz.** (57 g) Special B

### HOPS

**0.6 oz.** (17 g) Magnum, 12.3% a.a. @ 60 min

**1.9 oz.** (54 g) El Dorado, 9% a.a. @ 20 min

**0.8 oz.** (23 g) Citra, 14.1% a.a. @ 10 min

**1.4 oz.** (40 g) El Dorado @ 9% a.a. @ flameout

**0.3 oz.** (9 g) Simcoe, 12.3% a.a. @ flameout

**0.75 oz.** (21 g) El Dorado, whirlpool 30 min

**1.25 oz.** (35 g) Simcoe, whirlpool 30 min

**1.2 oz.** (34 g) El Dorado, dry hop on day 3

**0.7 oz.** (20 g) Simcoe, dry hop on day 3

**0.7 oz.** (20 g) Citra, dry hop on day 3

**1.2 oz.** (34 g) El Dorado, dry hop on day 7

**0.7 oz.** (20 g) Simcoe, dry hop on day 7

**0.7 oz.** (20 g) Citra, dry hop on day 7

**1.2 oz.** (34 g) El Dorado, dry hop on day 10

**0.7 oz.** (20 g) Simcoe, dry hop on day 10

**0.7 oz.** (20 g) Citra, dry hop on day 10

### ADDITIONAL ITEMS

**1/4 tsp.** (1.5 g) yeast nutrient @ 15 min

**1** Whirlfloc tablet @ 10 min

**1 lb.** (454 g) dextrose @ 10 min

### YEAST

GigaYeast Vermont IPA Yeast, Inland Island Colorado IPA, or The Yeast Bay Vermont Ale

### WATER

Minerals are important for this style. If you dabble in chemistry, shoot for 100 ppm chloride and 200 ppm sulfate. Specific salt additions depend on the base water profile you start with.

### BREWING NOTES

Mash grains at 149° F (65° C) for one hour, lauter, and sparge. Boil 60 minutes, adding hops, yeast nutrient, Whirlfloc tablet, and dextrose as indicated above. After flameout, add whirlpool hops and stir wort for 30 minutes to create a whirlpool and precipitate out the trub. Chill wort as quickly as possible, run off into a fermenter, pitch yeast, and oxygenate.

Ferment at 68–72°F (20–22°C), depending on your chosen yeast strain. Add dry hops 3, 7, and 10 days after brew day as indicated above. Bottle or keg with 2.5 volumes (5 g/L) of CO<sub>2</sub>.

### EXTRACT VERSION

Substitute pale malt with 8.1 lb. (3.67 kg) pale liquid malt extract. Steep CaraAmber and Special B malts in 155° F (68° C) reverse osmosis (RO) water for 30 minutes. Dissolve extract and top up to desired boil volume with reverse osmosis (RO) water. Add hops and boil 60 minutes. Proceed as above.

Sun Temple has huge tropical and citrus hop flavor (think mangoes and orange zest), with very subtle bitterness. "This makes it extremely flavorful and drinkable even to those who typically don't like the somewhat harsh and lingering bitterness of an IPA," Tyler says. "I think of it as a gateway IPA. People tend to be wide-eyed before they even drink it because the aroma is so strong. They're usually like, 'Oooohh, mangoes.'"

Tyler points out that unlike West Coast or East Coast-style IPAs, New England-style IPAs don't focus on bitterness, but instead on delicate aromatic compounds of the hop flower that are often lost in other IPA styles. "In our Sun Temple, we use 60 percent more hops than in our Himalayan IPA (a West Coast-style IPA) but it's still 15 percent less bitter!"

Sun Temple utilizes four boil additions and a low temperature whirlpool addition on the hot side. It's then massively dry hopped in three additions over the course of fermentation and conditioning. "The goal with this style is to extract all of the delicate

**"THERE ARE LIMITATIONS  
ON A LARGER SCALE  
THAT SOMETIMES YOU  
DON'T HAVE ON A  
SMALLER SCALE."**

flavor and aroma oils without extracting bitterness," Tyler says. "It's been cool to put my own spin on this style, not to mention I've been working on this recipe for four years now and it's amazing to see it come to fruition on a commercial scale."

That commercial scale certainly comes with its challenges, which is why Tyler says understanding your equipment is so important. "There are limitations on a larger scale that sometimes you don't have on a smaller scale," he says, "like space, capacity of your glycol system, the ther-

mal mass of your system, and the ambient change in the air. Dealing with all these issues is crisis management."

That crisis management is constant in homebrewing, Tyler says. "The biggest mantra I have for brewing beer is 'Shit happens,' but it's how you can recover from that shit happening that makes a difference in the quality of your beer. It's not as if things are constantly going wrong, but things come up, especially with our fairly old brewing equipment. Like in homebrewing, there are quirks."

Tyler, like all homebrewers, has had his fair share of "epic boil-overs" and one memorably undershot mash temperature that led to mini-decoctions and a much longer brew day than expected. Troubleshooting these issues is where he feels he cut his teeth as a brewer and where he got the most experience for professional brewing. That "crisis management" continues on a daily basis on the pro side, and he's surprisingly glad, if not giddy, to take on those challenges.

Beyond understanding your equipment and being prepared to troubleshoot, Tyler says his best advice for homebrewers is to respect and nurture the yeast. "Yeast is a living organism and not an ingredient in beer," he proclaims. "Think of yeast not just as x pounds of this for the recipe; it's a living organism that needs a set of environmental conditions to do well, and it needs to be healthy."

Homebrewers should promote healthy yeast with yeast starters, recommends Tyler. "They make for clean, more complete fermentation," he says. "You don't have to understand everything about yeast metabolism before you make a yeast starter. That flask and stir plate can be intimidating to someone who has never brewed before or didn't like chemistry class, but don't let it deter you. Yeast starters make all the difference."

**Emily Hutto is the author of Colorado's Top Brewers and a contributing editor at Craft Beer & Brewing Magazine, among many other craft beer storytelling projects. She's determined to spontaneously ferment a batch of saké in her garage in Denver, Colo.** 



A TAPROOM ON THE GO!  
Perfect for Tailgating  
**DRAFT BREWER®**  
**Cannonball® Mini-Keg System**

Pour Perfect Pints  
For Your Friends  
And Get The  
Party Started.

NORTHERNBREWER.COM

By Charlie Papazian



# To Gotland for Gotlandsdricke

In 1995 I was exploring beer parts of Europe. I visited Sweden for several days. It was my first time there. I recently came across and reread my trip report and reflected. This typifies many of my experiences and captures a lot of what my life has been. I share here excerpts from my first-person account of adventures as a world beer explorer. This is the final installation in this four-part story.

Gotland is a small island off the coast of Sweden, about 50 km (31 mi.) wide and 100 km (62 mi.) long, surrounded by the Baltic Sea. It's a summer haven for Swedes for their six weeks of summer, which begins about June 15 and ends about August 1 or 10. This island of about 50,000 year-round inhabitants sees 500,000 tourists in six weeks. Many have summer homes there. It is little wonder why. It is quite pastoral, at least at this time of year.

**H**is name is Vello Noodapera, a very special 64-year old homebrewer and gentleman. It was about a 45-minute drive to his farm. But first we cruised by the sea and stopped in a parking lot. What was going to happen next? Anything, I figured, could and probably would.

*Pop!* went open the trunk of his Saab. And there, surprise, surprise, surprise: a keg of beer and a set of glasses to toast our arrival. Damn good beer at that. Delicious beer using the local baker's yeast. Amazing. After a brief photo session we cruised on to the village of Ardre. On the way, he showed me the press release he sent out to the local radio and newspaper media.

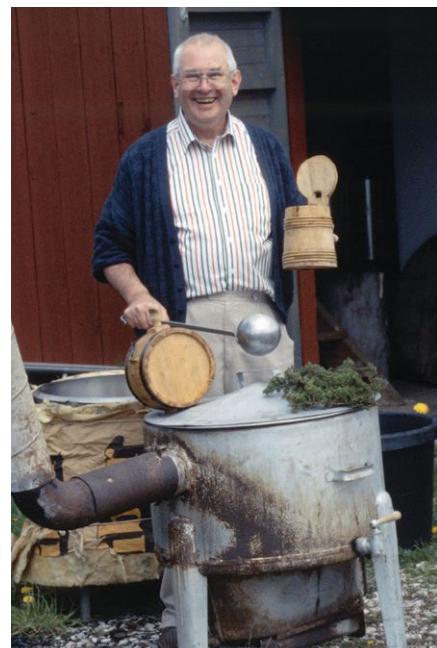
As we cruised through wonderful countryside, farmland, and pastures, we talked about Gotland. We passed a tall, lonely pine tree on the side of the road. It is called "The Drinking Tree." In the old days it was a stage stop or something like that, and people would stop there and have a drink



by the tree. In the distance, on a windy road, I noticed a curious sight. There was an American flag flying high on a flagpole. We approached closer and closer and Vello began to laugh. "It's in your honor!" The guy had class—and exquisite beer.

The sign on his barn read *Ardre Brygg* (*Ardre Brewery*). He told me he had just made the sign especially for my visit. Inside he had a 1-hectoliter (100-liter/36.4-gallon) brewery he'd shuffle out into the yard when brewing. His friend and homebrewer Dan Andersson (two s's) arrived with his Gotlandsdricke.

This is why we were here: Gotlandsdricke (read more about it in the 1994 Special issue of *Zymurgy*). It is a fascinating beer with a wonderful flavor and interesting technique. It's estimated that the island's 50,000 residents homebrew 5,000 hectoliters (132,086 gallons) of this beer each year. That works out to be about 10 liters (2.6 gallons) per every man, woman, and



child. And I don't doubt it. The island is self-sufficient with its own hops, barley, malt houses (pretty much just for the homebrewers) and baker's yeast.

# Vello's Gotlandsdricke (All-Grain)

**Batch Size:** 5 US gallons (18.9 L)

**Original Gravity:** 1.046 (11.5 B)

**Final Gravity:** 1.012 (3 B)

**Bitterness:** 30 IBU

**Color:** 7 SRM (14 EBC)

**Alcohol:** 6.5% by volume

## MALTS

**5 lb.** (2.3 kg) Birch smoked pale malt

**1.5 lb.** (680 g) Munich malt

**1.5 lb.** (680 g) pale malt

## HOPS

**3/4 oz.** (21 g) Northern Brewer, 8% a.a.

@ 60 min (6 HBU/168 MBU)

**1 oz.** (28 g) German Hallertauer Mittelfrüh, 4% a.a.

@ 15 min (4 HBU/112 MBU)

## ADDITIONAL ITEMS

**4** 10–12 in. (25–30 cm) boughs/branches of juniper for brewing water (the ones I used were laden with green berries). Juniper is not cedar. The needles on these branches were very thorn-like and difficult to handle without gloves.

**2** 10–12 in. (25–30 cm) boughs/branches of juniper for base water and lautering

**1/4 tsp.** (1 g) powdered Irish moss

**3/4 cup** (175 mL) corn sugar (priming bottles) or 0.33 cups (80 mL) corn sugar for kegging

## YEAST

**1 cm<sup>2</sup>** (0.16 in.<sup>2</sup>) fresh compressed “cake” yeast. Of course you may use lager or ale yeast, but keep in mind this recipe attempts to be true to style.

## BREWING NOTES

Boil four boughs of juniper branches in 6.5 gal. (25 L) of water for one hour. After removing the spent branches, use the water for mashing and sparging.

A step infusion mash is employed to mash the grains. Add 8 qt. (7.6 L) of 140° F (60° C) “juniper water” to the crushed grain, stir, stabilize, and hold the temperature at 132° F (53° C) for 30 minutes. Add 4 qt. (3.8 L) of boiling juniper water, heat to bring temperature up to 155° F (68° C), hold for about 30 minutes, and raise temperature to 167° F (75° C). Place 2 branches of juniper on the bottom of the lauter vessel and lauter and sparge with 3.5 gal. (13.5 L) of 170° F (77° C) juniper water. Collect about 5.5 gal. (21 L) of runoff. Add 60-minute hops and bring to a full and vigorous boil.

The total boil time will be 60 minutes. When 15 minutes remain, add the 15-minute hops. When 10 minutes remain, add the Irish moss. After a total wort boil of 60 minutes, turn off the heat and place the pot (with cover on) in a running cold-water bath for 30 minutes. Continue to chill in the immersion or use other methods to chill your wort. Then strain and sparge the wort into a sanitized fermenter. Bring the total volume to 5 gal. (18.9 L) with additional cold juniper water if necessary. Aerate the wort very well.

Dissolve the compressed yeast in a small amount of boiled and cooled water. Use a jar and a teaspoon previously sterilized in boiling water to contain and mix the yeast and water. Pitch the yeast when temperature of wort is about 65° F (18° C). Ferment at about 65° F (18° C) for about one week or until fermentation shows signs of calm and stopping. Rack from primary to a secondary, and if you have the capability, “cellar” the beer at about 55° F (12.5° C) for about one week. Prime with sugar and bottle or keg when complete.

Relax. Don’t worry. Have a homebrew and hope that you never find yourself smelling the dandelions on Folknykterhetens Dag.

The beers were absolutely some of the most memorably good beers I have ever had in my life. Drinking the stuff out of a large juniper wooden mug helped. I couldn’t stop drinking it and was feeling pretty darned good by noon. What day it was didn’t matter. How strong was it? “Three fights in 10 liters,” was Dan Andersson’s reply. It’s a cultural thing, I guess. I laughed politely.

How is it made? About 100 liters of brewing water is boiled with ten 10-inch (25-centimeter) branches of low bush juniper (not juniper trees like we have on the flat land, but juniper similar to what grows near mountain tree lines; the greenery is really prickly to the touch). After an hour or so of boiling, the water turns a deep amber color and is used for both mashing and sparging. Another ten 10-inch branches are placed below the stainless steel false bottom of the lauter tun.

The smoked malt is malted locally, and I asked whether the wood they used to smoke it was birch. I guessed that it was, and I was right. You could certainly taste

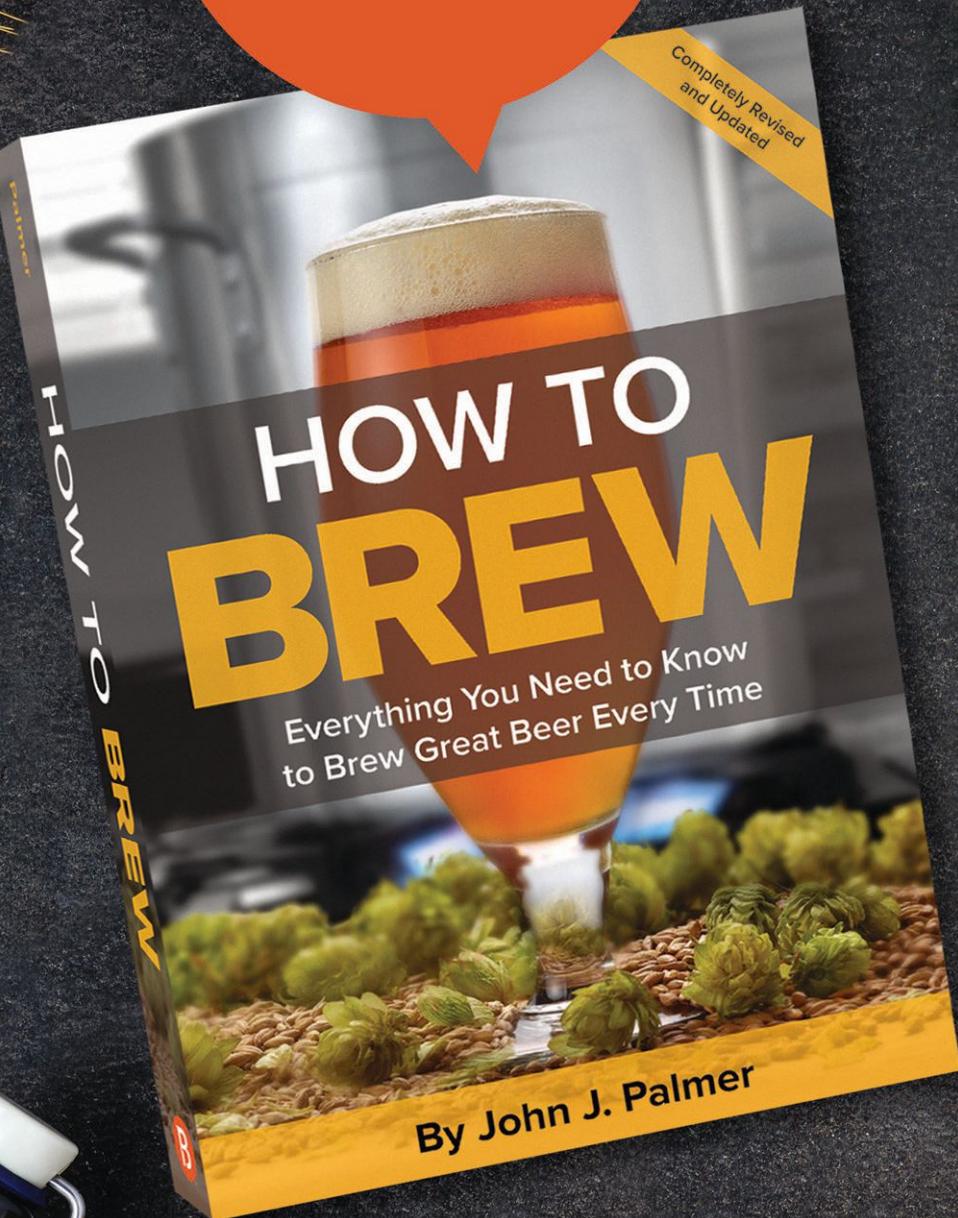
the peculiarities of birch smoke. And I had guessed correctly that they use wood with the bark still on, which gives it even more character. For a 100-liter batch of intensely smoky and juniper-flavored Gotlandsdricke, 30 kilograms of malt is used, of which 30 percent is smoked malt and the rest is pale lager malt. Some smoked malts I discovered are not as intensely smoked.

An important aspect of Gotlandsdricke is that bread yeast is used. And it’s only used in tiny amounts because it is so active. A 1-square-centimeter yeast cake is used for

**NEW  
RELEASE**

**ORDER  
NOW**

[BrewersPublications.com](http://BrewersPublications.com)



**BREWERS  
PUBLICATIONS™**



# Vello's Gotlandsdricke (Partial-Mash)

**Batch Size:** 5 US gallons (18.9 L)

**Original Gravity:** 1.046 (11.5 B)

**Final Gravity:** 1.012 (3 B)

**Bitterness:** 30 IBU

**Color:** 7 SRM (14 EBC)

**Alcohol:** 6.5% by volume

## MALTS

**4 lb.** (1.82 kg) Birch smoked pale malt

**3 lb.** (1.36 kg) amber malt extract syrup

OR 2.4 lb. (1.1 kg) amber dried malt extract

## HOPS

**1 oz.** (28 g) Northern Brewer, 8% a.a. @ 60 min (8 HBU/224 MBU)

**3/4 oz.** (21 g) German Hallertauer Mittelfrüh, 4% a.a. @ 15 min (3 HBU/84 MBU)

## ADDITIONAL ITEMS

**4** 10–12 in. (25–30 cm) boughs/branches of juniper for brewing water (the ones I used were laden with green berries). Juniper is not cedar. The needles on these branches were very thorn-like and difficult to handle without gloves.

**2** 10–12 in. (25–30 cm) boughs/branches of juniper for lautering

**1/4 tsp.** (1 g) powdered Irish moss

**3/4 cup** (175 mL) corn sugar (priming bottles) or 0.33 cups (80 mL) corn sugar for kegging

## YEAST

**1 cm<sup>2</sup>** (0.16 in.<sup>2</sup>) fresh compressed “cake” yeast. Of course you may use lager or ale yeast, but keep in mind this recipe attempts to be true to style.

## BREWING NOTES

Boil four boughs of juniper branches in 6.5 gal. (25 L) of water for one hour. After removing the spent branches, use the water for mashing and sparging.

Heat 1 gal. (3.8 L) “juniper water” to 172° F (78° C) and then add crushed grains to the juniper water. Stir well to distribute heat. Temperature should stabilize at about 155° F (68° C). Wrap a towel around the pot and set aside for about 45 minutes. Have a homebrew.

After 45 minutes, add heat to the mini-mash and raise the temperature to 167° F (75° C). Then pass the liquid and grains into a strainer lined with two juniper branches and rinse with 170° F (77° C) juniper water. Discard the grains. Add more juniper water to the sweet extract you have just produced, bringing the volume up to about 2.5 gal. (9.5 L). Add malt extract and 60-minute hops and bring to a boil.

The total boil time will be 60 minutes. When 15 minutes remain, add the 15-minute hops. When 10 minutes remain, add the Irish moss. After a 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 30 minutes or the time it takes to have a couple of homebrews. Then strain out and sparge hops, and direct the hot wort into a sanitized fermenter to which 2.5 gal. (9.5 L) of cold juniper water has been added. If necessary, add additional cold juniper water to achieve a 5 gal. (18.9 L) batch size. Aerate the wort very well.

Dissolve the compressed yeast in a small amount of boiled and cooled water. Use a jar and a teaspoon previously sterilized in boiling water to contain and mix the yeast and water. Pitch the yeast when temperature of wort is about 65° F (18° C). Ferment at about 65° F (18° C) for about one week or until fermentation shows signs of calm and stopping. Rack from primary to a secondary, and if you have the capability, “cellar” the beer at about 55° F (12.5° C) for about one week. Prime with sugar and bottle or keg when complete.

Relax. Don’t worry. Have a homebrew and hope that you never find yourself smelling the dandelions on Folknykterhetens Dag.

100 liters, and I’m told the beer is foaming within six hours. Incredible.

The beer tasted about 1.050 (original gravity), the color was about 14 SRM, and the Hallertauer hops that were used contributed about 30 BUs. It had a good hop flavor and a fruity and pleasant juniper taste with a distinct and unique smoky

flavor. Unlike any other smoked beer I’ve ever had. Very smooth.

In Gotland there are friendly rivalries between Gotlandsdricke brewers. Everyone has their own secret recipes and own styles. Sweet or bitter, strong or weak, dark or pale, sour with more or less juniper or smoke. The radio station

interviewed me, and the homebrewers and the newspaper ended up doing a very big feature story on my visit.

From Vello’s farm, we cruised to what was to be another highlight. It turned out that this brewpub was situated on an isolated farm. Virungs Brygg AB, owned by Lennart “Lilla” Svärd. He raises sheep

there and smokes meats and sausages in his own smokehouse. He is a maltster and produces malt and smoked malt for his brewery. It's a cross between a village inn and a brewpub.

Lilla's Gotlandsdricke is 5% alcohol and lightly flavored with 40 percent of his own smoked malt, along with some Munich malt and boiled juniper water. Yes, bread yeast is used. Again he emphasized, as Vello and Dan did, that only a small amount is needed. I figured that the small amount allows for a slower start and lower generation of heat from the yeast during initial fermentation, which is important for overall flavor. High temperature fermentation seems to be avoided, probably for good reasons. He uses 25 grams of yeast cake for 800 liters of wort. That's about one ounce of yeast cake (less than half an ounce dried) for 211 gallons! Amazing, yet fermentation is evident within six to eight hours.

Lilla has lived here since 1975 and has been a homebrewer for the past 10 years. First there was the smokehouse and meat house. Then he began producing malt for homebrewers. Interestingly, until he received permission to sell and make beer, he made lots of Gotlandsdricke wort and sold it in 5-liter containers for home fermentation. He still sells unfermented wort to the locals. In applying for the first brewpub license in Sweden, Lilla had lots and lots of problems with the Swedish bureaucracy. He is still haggling and is not fully certified, but he's doing it anyway. It cost him \$42,000 in fees to get what permission he has. At first he had permission to make it but not sell it. When they gave him permission to sell it, he said they wouldn't let him make it. Then he showed me the 3-inch (7.6-centimeter) thick ream of paper that was part of the application documents the government was requiring.

Lilla is an African-conga drummer (as I am), and Thursday was African drumming jam session at the brewery, just friends. Though Håcken was hundreds of miles away, I could hear a tiny voice saying, "Charlie we must go now . . ." I had a 5:30 p.m. plane to catch. I could have stayed a long time on Gotland Island. It's one of those special Scandinavian hideaways with a lot of mystique.

Arriving in Stockholm, I checked into the Långholmen Hotell, a hotel that was formerly a maximum-security prison. My room was once a cell used for solitary confinement, which creates quite an interesting ambience. This was no deadbeat hostel, but rather a rather nice conference center. It's just that the rooms were kind of small if you got a single.

The day still wasn't over. More homebrewers wanted to go out and have a beer or two with me. So it's still today, my second day, and only 9 p.m. A rendez-

vous was arranged, and off we went into Stockholm for a few beers (naturally) and dinner. I faded to black by 11:30 and took the subway back to my place and crashed. It was a long and eventful day.

But then there was the next day, and soon I was off to downtown Stockholm for an 11:30 a.m. live radio interview. From the radio station, it was a journey to the Wine and Spirits Historical Museum to rendezvous with Håcken and 10 other homebrewers to judge more beer. The museum itself was quite fascinating and well worth



**MEAD DAY**

**AUGUST 5, 2017**

Celebrate and learn to make the world's oldest fermented beverage.  
VISIT THE EVENTS SECTION OF [HOMEBREWERSASSOCIATION.ORG](http://HOMEBREWERSASSOCIATION.ORG)

**AMERICAN HOME BREWERS ASSOCIATION**

**BA**  
Brewers Association



a visit if you are in Stockholm. They are a source for some great photos of distilleries and cidermaking equipment.

From there it was a visit to a state monopoly store that sold 250 different beers from all over the world representing every beer that was available in Sweden—a beer geek's big drool. One of the most striking photographs in the tastefully done decor of the store was a large photo of a brewer brewing at the Anchor Brewing Co. in San Francisco.

We were just getting the third day started! It began to rain and drizzle and get cold just in time for an afternoon kegger in the park. About eight homebrewers showed up to drink beer and chomp on sausage and potato salad and rip bread. I was soggy and thirst-free.

A short time later it was time to get back to the Friends of the Wort Homebrew Club for a few more brews. I escaped by about 8 or 9 p.m., taking the train back into town on my own. It was Friday night.

I was alone and had the opportunity to go out and see the town, but I was so pooped I just went to bed—and slept.

The next day was my last in Sweden. That final evening led me on a 45-minute train ride to Håcken's home for another unremitting round of beer after beer followed by mead, of course to be judged and evaluated in great detail. I quit at midnight and noted to myself that "At this time tomorrow, I'll be home in Colorado." Meanwhile, I had a meager five hours' sleep ahead of me before I headed out to the airport.

Stockholm. Paris. Chicago. Denver. Home at last. Home at last. Thank God I'm home at last.

Well, there you have it: a thumbnail sketch of a day in the life in 1995. Beyond the shuck and jive, here's this issue's recipe. It was originally published in my book *Microbrewed Adventures*.

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

**NEW!**  
**A TRIBE CALLED SHMALTZ**  
VARIETY 12-PACKS

Includes FOUR GOLD MEDAL WINNING Favorites  
World Beer Championships & TAP New York

STYLES UPON STYLES UPON STYLES IS WHAT WE HAVE  
L'Chaim Tribe!

**Shmaltz**  
BREWING COMPANY

ShmaltzBrewing.com • ShmaltzBrewing

# TRUB (LE) NO MORE.

BIG MOUTH BUBLER®  
SIPHONLESS

THE BEST  
FERMENTER  
KNOWN TO MAN.  
PROUDLY MADE  
IN AMERICA!

MIDWESTSUPPLIES.COM

## ADVERTISER INDEX

Adventures In Homebrewing.....	11	San Francisco Herb Co.....	67	TrailKeg.....	24
www.austinhomebrew.com		www.sfherb.com		www.trailkeg.com	
American Homebrewers Association .....	29,30,33,80	Shmaltz Brewing Co.....	79,94	Uinta Brewing Co.....	46
www.HomebrewersAssociation.org		www.shmaltzbrewing.com		www.uintabrewing.com	
ANVIL Brewing Equipment.....	16	Sierra Nevada Brewing Co.....	43	Vessi.....	Cover 3
www.blichmannengineering.com		www.sierranevada.com		www.whirlpoolcorp.com	
Ballast Point Brewing & Spirits .....	Cover 4	Spike Brewing.....	71	WilliamsWarn Personal Brewery.....	54
www.ballastpoint.com		www.spikebrewing.com		www.williamswarn.com	
Bellingham Whatcom County Tourism.....	41	SS Brewing Technologies.....	2	Wyeast Laboratories, Inc.....	26
www.bellingham.org		www.ssbrewtech.com		www.wyeastlab.com	
Bell's Brewery .....	39	Taphandles, LLC.....	18	YCH HOPS.....	95
www.bellsbeer.com		www.taphandles.com		www.ychhops.com	
BH Enterprises.....	54	The Grainfather.....	63		
www.TempStatControls.com		www.grainfather.com			
Blichmann Engineering.....	75,77				
www.blichmannengineering.com					
Brewers Publications .....	91				
www.BrewersPublications.com					
Brewers Supply Group (BSG) .....	72				
www.brewerssupplygroup.com					
BrewJacket .....	46				
www.brewjacket.com					
Briess Malt & Ingredients Company.....	47				
www.brewingwithbriess.com					
Castle Malting .....	7				
www.castlemalting.com					
Cicerone Certification Program .....	30				
www.cicerone.org					
Dickies .....	12				
www.dickies.com					
FastBrewing & WineMaking .....	22				
www.thefastrack.ca					
FERMENTIS By Lesaffre Yeast Corporation .....	18				
www.Fermentis.com					
Five Star Chemicals & Supply, Inc. ....	15				
www.fivestarchemicals.com					
Gotta Brew, LLC .....	33				
www.gottabrew.com					
Grandstand Glassware & Apparel .....	45				
www.egrandstand.com					
Great Western Malting Co .....	74				
www.greatwesternmalting.com					
GrowlerWerks .....	17				
www.growlerwerks.com					
Harper Collins.....	93				
www.harpercollins.com					
High Gravity .....	84				
www.highgravitybrew.com					
Home Brewery (MO), The .....	75				
www.homebrewery.com					
HOPSTEINER .....	31				
www.hopsteiner.com					
Kegconnection.....	Cover 2				
www.qualitypour.com					
Krome Dispense Pvt. Ltd.....	25				
www.kromedispense.com					
Lallemand .....	84				
www.lallemandbrewing.com					
LaMotte .....	55				
www.lamotte.com					
Love2Brew .....	61				
www.love2brew.com					
Maryland Homebrew.....	21				
www.mdhb.com					
Micro Matic USA Inc.....	62				
www.micromatic.com					
Midwest Supplies .....	94				
www.MidwestSupplies.com					
MoreBeer! & MoreWine! .....	55				
www.morebeer.com					
Muntons Malt Ingredients, Inc. ....	44				
www.muntons.com					
Northern Brewer, LLC.....	88				
www.northernbrewer.com					
O'Connor's Home Brew Supply .....	70				
www.oconnorshomebrew.com					
PicoBrew .....	56				
www.picobrew.com					
Sam Adams .....	9				
www.samadams.com					

**YCH HOPS**

# GREAT BEER GROWS HERE.

VAN HORN FARMS, MOXEE, WA



**HOPUNION LLC  
IS NOW YCH HOPS.**

NEW NAME. NEW LOOK.  
SAME PREMIUM QUALITY HOPS.

Beginning in early 2016, look for the new YCH HOPS packaging and connect with growers like Rich Van Horn of Van Horn Farms, Inc. For more than 40 years, Rich has been committed to the craft brewing community. His dedication to providing a premium product has led Van Horn Farms to earn top industry honors, including the Hop Quality Group's first-ever Cascade Cup in 2013. To learn more about how our growers' dedication to world-class quality and service is benefiting you, visit [ychhops.com](http://ychhops.com).

Phone: 509.453.4792 | Fax: 509.453.1551 | Email: [hops@ychhops.com](mailto:hops@ychhops.com) | Web: [www.ychhops.com](http://www.ychhops.com)

# Never Mess with Someone Else's Brew System

**W**hile helping me brew a batch of India pale lager (IPL), my brother Dean asked several pertinent and technically savvy questions about my process. “Why don’t you heat your sparge water in a dedicated hot liquor tank? What are your temperature losses from the time you heat the mash water in your kettle to the time you use it for lautering? What’s your mash tun capacity?”

I was happy to answer his questions, and in true Learn to Homebrew Day fashion, I hoped he might become interested enough in brewing to start making his own beer. I didn’t mind that he seemed to be angling towards how I might streamline my process. But I should have guessed that he was also pondering possibilities for an upcoming Christmas gift.

My system is pretty low tech—I still use a picnic cooler for a mash tun. As I explained to him, I appreciate the value a RIMS or HERMS system can bring to the brewing process, but a pre-heated, insulated mash tun allows for consistent infusion mash temperatures with very little heat loss over the duration of the mash; it’s also just the way I’ve always brewed at home.

Maybe I’m just getting too old and stubborn to allow for new possibilities. If it ain’t broke, don’t fix it.

But coming from a manufacturing background, my brother processed my answers with his usual insight and came to the conclusion that I could do better on the equipment side. A heated, stainless steel mash tun would offer greater flexibility in my brewing and look far sexier than my beat-up, modified chest cooler. And



maybe a centrifugal pump would be more efficient for hot water transfer than the old enamelware tin pan I’ve been using for longer than I care to admit. Now, where to make said purchase?

While there are numerous online retailers for specialized homebrew equipment, my brother wanted to support our local brick-and-mortar shop, and he wanted sound advice to go along with it. So he approached owner and proprietor George Otteni of Lafayette Homebrew Supply here in Colorado and asked him about getting me a heated mash tun. George has always run a tight ship, and he has been a good friend for years. Lucky for me, he also knows a lot about homebrewers.

“First,” he told Dean, “a heated mash tun is a generous gift. Second, let me give you some advice. Never mess with another man’s homebrew system. A heated mash tun can be a wonderful thing. But your brother has his system the way it is for a reason. You give him a fancy new piece of equipment, he’s going to feel obliged to use it. But he might not appreciate having to alter his brewing process to accommodate it.

How about a gift card so he can decide for himself?”

Turns out George’s advice was spot on. It would have been a marvelous upgrade. I might have learned to love it. I might have wondered why I’d never used one before. But at least at first, I would have resented having to change my process. Brew days are when I’m at my most focused and my most relaxed. The myriad little details that have to happen in the correct order—details I’ve rehearsed hundreds of times over the past 30 years—almost put me in a trance-like state as the seven-hour brew day moves from mill-in to cleanup. It would be fair to say that many times, I enjoy the process even more than the beer.

With the gift card, I can go with an equipment upgrade or use the cash for base malts, hops, or extract. Right now, I’m thinking I’ll go for bulk sacks of two-row and keep my enamelware pan and picnic cooler. Thanks, bro! And George, lest I ever forget, the homebrew shop owner always knows best.

**Amahl Turczyn is associate editor of Zymurgy.**



# MASTER THE FERMENTATION PROCESS

HELP REDUCE KEY RISKS THAT MAKE  
GOOD BEER GO BAD, IN A MORE  
CONTROLLED ENVIRONMENT.

LEARN MORE AT  
[GETVESSI.COM](http://GETVESSI.COM)





# A SAN DIEGO CLASSIC

*When it's good, it's good — and timeless.*

Created from a blend of three homebrewers' recipes, Sculpin IPA was an instant hit for its fruity, tropical and dry profile from Simcoe and Amarillo hops. Today, this gold-medal winning IPA satisfies both experienced and new drinkers alike with its approachable style. With one taste, you'll see why Sculpin continues to be one of the most popular IPAs around.

[BALLASTPOINT.COM](http://BALLASTPOINT.COM)

Established in San Diego, CA, 1996. Please explore responsibly.™

