

FOR THE HOMEBREWER & BEER LOVER

zymurgy®

■ The Journal of the American Homebrewers Association ■



4TH ANNUAL GADGETS ISSUE

In this issue:

10

BEERS
YOU
CAN
BREW

Sierra
Nevada's
Beer
Camp

GABF
PRO-AM
WINNERS

Homebrewing
Gadgets You
Can Build

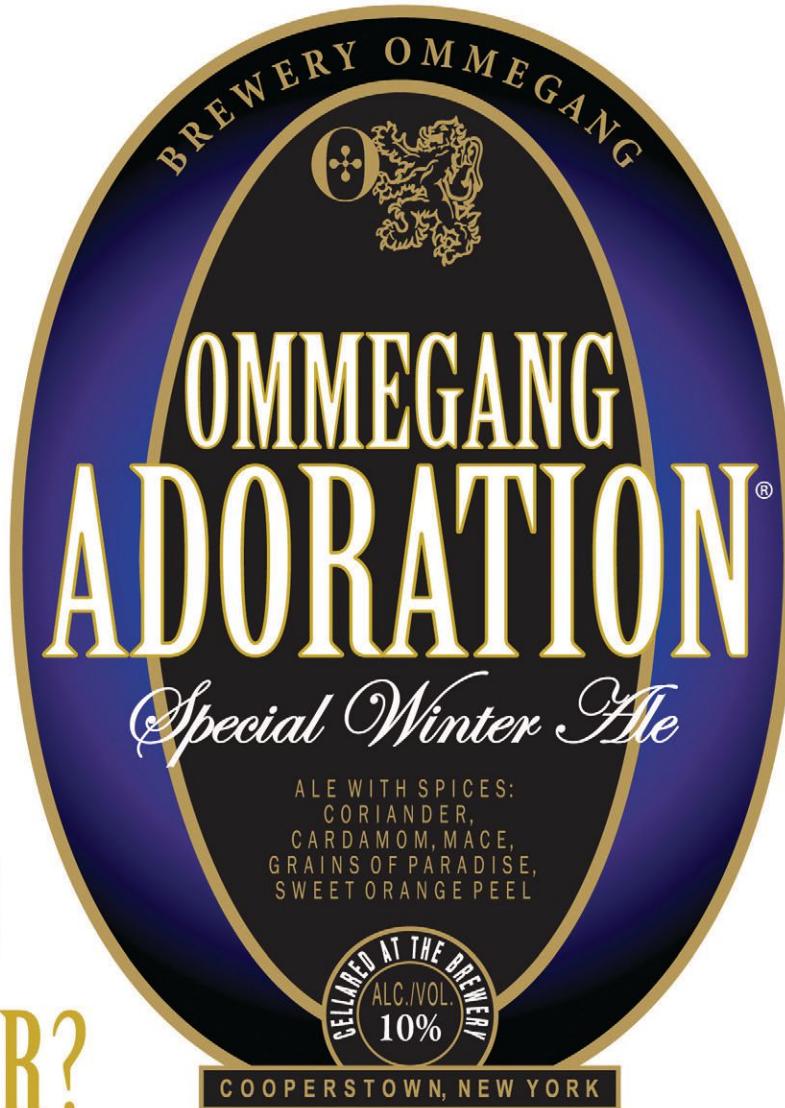


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PLUS: GREAT AMERICAN BEER FESTIVALSM WINNERS' LIST

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AND BABIES
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ADORED.
BUT IS IT
TOO MUCH TO
ASK OF A BEER?



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Published by the American Homebrewers Association, a division of the Brewers Association, a not-for-profit organization located at 736 Pearl Street, Boulder, CO 80302-5006 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 \$38 U.S., and \$44 International and include a \$35 subscription to **Zymurgy**.

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POSTMASTER: Send address changes to:

Zymurgy, 736 Pearl Street; Boulder, CO 80302-5006.
 Printed in the USA.

Another Great GABF

As I write this, another Great American Beer Festival is in the books. More than 49,000 beer lovers, including Homer and Marge Simpson and George Wendt from "Cheers," packed the Colorado Convention Center in Denver September 24-26 to sample a mind-boggling array of more than 2,100 beers, one ounce at a time.

Some highlights of the 2009 GABF:

The new Member Entrance allowed American Homebrewers Association and Brewers Association members their own separate entrance to the festival. If you've ever seen the lines wrapped around the building to get in, you know what a great benefit this is.

The Farm to Table Pavilion offered a quiet sanctuary from the hustle and bustle of the hall, with delicious food and beer pairings from craft brewers and local restaurants, ranchers and farmers.

The GABF Pro-Am competition, which pairs AHA members with professional brewers, continues to grow, with 72 entries in 2009, a 25-percent increase over 2008. For more on the Pro-Am (and for all three medal-winning recipes), see the Winners Circle on page 47.

Among the many diversions at the festival, the Brewers Studio Pavilion offered several educational seminars. One of the seminars I attended was on "what's new in craft brewing." Here's the scoop:

- **Black IPAs:** Stone head brewer Mitch Steele presented on this growing style, which he described as a "black beer that has more in common with a schwarzbier, and is hopped like an IPA."

- **Unusual Ingredients:** Patrick Rue of The Bruery served his seasonal creation, Autumn Maple, brewed with yams, molasses and maple syrup.

- **New Hop Varieties:** Citra is one of the hottest new hops being used by craft brewers and is known for its passion fruit aromas. "This hop has actually been around for 12-15 years but no one has really known about it," said Sierra Nevada's Steve Dresler. Citra hops should become more widely available for home-brewers in the future.

- **Barrel Aging:** Scott Vaccaro of Captain Lawrence Brewing Co. is aging beers in everything from wine barrels to bourbon barrels to tequila barrels to rum barrels. "When I was a homebrewer I always wanted to age stuff in barrels," said Vaccaro.

The GABF competition included a record-shattering 3,308 entries (up from 2,902 in 2008). As has been the trend in recent years, the American Style IPA category had the most number of entries (134), with Firestone Walker's Union Jack winning gold for the second year in a row. Another exploding category is Wood and Barrel-Aged Strong Beer, which had 110 entries. Arcadia Brewing Co. struck gold with its Cereal Killer Barleywine.

The biggest highlight was, of course, the beer. From the "ancient ales" served by Dogfish Head, to the special collaborations found all over the hall, to the beers that many of us can only try once a year, the GABF is not to be missed. This festival sold out three weeks in advance, so be sure to plan ahead for the 2010 event, which is scheduled for September 14-16.

Jill Redding is editor-in-chief of Zymurgy.



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COLUMNS

4 | EDITOR'S DESK

Another Great GABF
By Jill Redding

43 | WORLD OF WORTS

Specialty Lager Malts
By Charlie Papazian

64 | LAST DROP

The Beer Gut Myth
By Gavin Nachbar

DEPARTMENTS

6 | BEEROSCOPE

9 | DEAR ZYMBURGY

13 | DEAR PROFESSOR

15 | CLUB ONLY

31 | HOMEBREW MARKET

39 | COMMERCIAL CALIBRATION

47 | WINNERS CIRCLE

52 | COMPETITION CALENDAR

57 | AHA MEMBER SHOPS

62 | ADVERTISER INDEX

FEATURES

18 | 10 Homebrewing Gadgets

By Zymurgy readers

Zymurgy readers share their homebuilt homebrewing tools for solving problems and making the brew day go just a little bit more smoothly.

22 | Stand By Your Brew

By Mark Pasquinelli

Approval from the CFO for a pump was much more than that; it was also tacit consent to build a permanent two-tier brew stand. If I can build one of these, anyone can.

28 | Crown Me: Oxygen Absorbing Caps

By Ted Hausotter

Crown caps slow, prevent and even reduce oxidation that causes a beverage to prematurely stale. One option for homebrewers is oxygen-absorbing caps.

32 | Learning from the Pros: Sierra Nevada Beer Camp

By Gordon Strong

This past September, I was one of 22 lucky homebrewers who got their own "golden ticket to imagination and adventure" at the Sierra Nevada Brewing Co.



ONLINE EXTRA Lager Brewing

by Josh Pfriem

To read this special, online-only feature go to the *Zymurgy* magazine page on www.HomebrewersAssociation.org.

QUICK RECIPE GUIDE

Surly AHA Rally Imperial Brown Ale	6	Bohemian Thriller - All Grain Recipe	43
Dark Mild Ale	15	Bohemian Thriller - Mash/Extract Recipe	44
Inaugural Heifer-Weizen	25	Columbarillo IPA GABF Pro Am Gold Medal	47
Sierra Nevada Old Cantankerous American Stock Ale	35	Alright Already Amber GABF Pro Am Silver Medal	48
Sierra Nevada Golden Ticket Baltic Porter	36	Time of the Season Belgian Pale Ale GABF Pro Am Bronze Medal	48

>> GET THERE! SF BEER WEEK

San Francisco has unofficially been celebrating beer week for years with events surrounding the Toronado Barleywine Festival in February. But in 2009, the city made it official with SF Beer Week, which takes place February 5-14 in 2010.

In 2009, the 10-day celebration included more than 150 events over an 11-county area. The 2010 week will again be anchored by the Bistro Double IPA Festival, the Toronado Barleywine Festival, and Celebrator's Best of the West Beer Fest.

Beer dinners, pairings, meet-the-brewer events and homebrewing demonstrations are among the many festivities planned for SF Beer Week. For more information and a calendar of events, go to www.sfbeerweek.org.



January 7-9

Big Beers, Belgians and Barleywines Festival

Vail, CO.

Phone: 970-524-1092,
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January 15-16

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January 30

Atlanta Cask Ale Tasting

Atlanta, GA.

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February 13

Bockfest 2010

New Ulm, MN.

Phone: 507-354-5528,
www.schellsbrewery.com

February 20

Extreme Beer Fest

Boston, MA.

www.beeradvocate.com

February 27

West Palm Beach Beer Fest

West Palm Beach, FL.

Phone: 407-383-2331

E-mail: info@FloridaBeerFestivals.com www.floridabeerfestivals.com

BREW NEWS: SURLY SHATTERS AHA RALLY RECORD

On October 10, more than 300 homebrewers descended on Surly Brewing Co. outside of Minneapolis for the largest American Homebrewers Association (AHA) Rally ever. In addition to plenty of free samples of tasty Surly beer, more than 200 attendees also took home 5 gallons of wort from a 60-barrel batch of an imperial brown ale that Surly brewed up exclusively for the AHA Rally. Employees of the Northern Brewer homebrew shop were on hand giving out packets of free yeast to attendees. Surly encouraged rally participants to ferment the wort with different yeasts, dry hop, and experiment with other ingredients to create their own unique versions of the beer. Rally attendees were encouraged to save a few bottles to share with their fellow homebrewers at the AHA National Homebrewers Conference in Minneapolis June 17-19, 2010.

For a list of upcoming AHA rallies, go to www.aharally.org.

AHA director Gary Glass developed the following recipe using the wort provided by Surly.

SURLY AHA RALLY WORT-GIVEAWAY IMPERIAL BROWN ALE

Ingredients for 5.0 U.S. gallons (18.9 liters)

13.00 lb (5.89 kg) Pale Malt
1.67 lb (0.75 kg) Brown Malt
0.25 lb (113 g) Crystal 85L
0.25 lb (113 g) Crystal 120L
0.50 lb (227 g) Dark Candi Syrup

1.25 oz (35 g) Columbus Pellet Hops, 15% AA (60 min)

0.50 oz (14 g) Willamette Pellet Hops, 5% AA (0 min)

Yeast: Choose your own adventure!

Original Gravity: 1.084

SRM: 20.6

IBU: 64.0

Brewhouse Efficiency: 75%

Directions

Mash grains at 150° F (66° C) for 60 minutes. Mash out at 169° F (76° C) and sparge to kettle. Boil 60 minutes, adding hops as indicated in the recipe. Chill, aerate and pitch with a starter of whatever yeast you feel like using for this concoction.

Extract Substitution:

Replace Pale Malt with 10.50 lb (4.76 kg) light liquid malt extract. Steep grains in 2 gallons (7.6 L) of water at 165° F (74° C) for 30 minutes. Strain and rinse grains. Stir in half of the extract and bring to a boil. Add hops as indicated in recipe. After a 60 minute boil, remove from heat and stir in remaining extract and let steep for 10-15 minutes to sanitize extract. Strain into fermenter with enough cold water to make 5 gallons total. Pitch your choice of yeast when wort drops to the optimal fermentation temperature for your yeast.



>> GREAT GADGET

WHAT'S NEW FROM GREATBREWERS.COM

BeerCloud Mobile App for Android and iPhone

Powered by GreatBrewers.com, BeerCloud is a revolutionary mobile app that helps you pair beer with food, track down your favorite beers in your neighborhood, and pull up a full description of any beer with a scan of its barcode. Whether you're a beer consumer who could use some guidance in making a well-educated purchase, a food lover who wants to discover new ways to enhance a meal with a suitable beer pairing, or a traveling beer enthusiast who wants to instantly map the closest stores, bars, and restaurants carrying one of your favorite beers, BeerCloud is the quintessential mobile beer app.

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- Search Beer Sommelier for a recommendation of complementary beer style accompaniments for more than 250 foods

From your Android phone, search "BeerCloud" in the Android Market. From your iPhone or a computer with iTunes installed, click the App Store. To learn more, go to www.greatbrewers.com/beercloud.



BREW NEWS:

VERMONSTER ROCKS ON

Tiny Rock Art Brewery in Morrisville, Vt. won a highly publicized battle in mid-October to keep producing its Vermonster barleywine. The brewery had received a "cease and desist" letter from Hansen Beverage Co. on September 14 on behalf of Hansen's Monster Energy Drink, as Hansen, based in Corona, Calif., was concerned that Vermonster might somehow be confused with the popular energy drink.

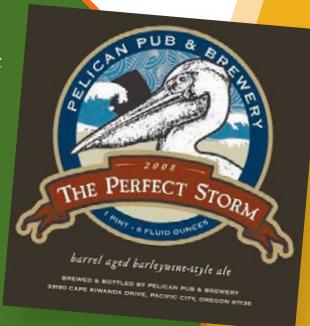


Rock Art owner Matt Nadeau drummed up support for Rock Art and Vermonster with a YouTube video and Facebook page along with interviews with media outlets. The "Vermonters and Craft Beer Drinkers Against Monster" page had more than 16,000 members on Facebook in mid-October, and the "Matt and the Monster" YouTube video had more than 69,000 views. Two large beverage retailers in Vermont reportedly pulled Monster from their shelves in protest of Hansen's actions.

Vermonster, a 10-percent abv barleywine, was first brewed to celebrate Rock Art's 10th anniversary.

In October, Rock Art and Hansen reached a deal: Vermonster could keep its name as long as the brewery promised never to go into the energy drink business.

"This victory is because we all worked together on a common goal," said Nadeau in a statement. "Our voice spoke as one to the Corporate Giant, and they listened, and then they spoke as I had asked from day one."



My favorite beer of all time is The Perfect Storm from Pelican Pub and Brewery in Pacific City, Ore. Pelican took their already incredible Stormwatcher's Winterfest and aged it in bourbon barrels. The result is nothing short of spectacular.

The smell is very sweet with noticeable hints of bourbon as well as vanilla from the oak. The taste is simply an amazing experience, and a lesson in balance. From the very sweet smell, I was expecting a much sweeter beer, but this beer is very well attenuated, with a fantastic mouthfeel and overall impression. The flavors of malty goodness from the barley, vanilla from the oak, as well as the flavor of bourbon all combine to a point where each one is identifiable, but no flavor over-asserts itself.

As a homebrewer, this beer is my inspiration to start brewing English barleywines and experimenting with bourbon and oak accents.

Reviewed by Paul Cervenka
Seattle, Wash.

If you've had a beer you just have to tell the world about, send your description, in 150 words or fewer, to jill@brewersassociation.org.



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Michelob

CRAFTING A BETTER BEER.

by Our Readers

Be Safe with Glass Carboys

[Editor's Note: This letter contains graphic material regarding an injury].

Dear Zymurgy,

I was recently on a beer and cheese cruise on the Hudson sponsored by Chelsea

Brewing Co. in New York City. It was awesome, but that is not the reason I am writing. Rather, this is a cautionary tale that one of my fellow passengers told that I thought the homebrewing world needed to hear.

"I used to homebrew," he said, "but I haven't done it in a few years since it almost cost me my hand."

"Your hand?" I asked, thinking he was being metaphorical.

"Yes, almost cut it off clean at the wrist," he said. I now knew this was no metaphor.

Expecting to hear a crazy story about how he had been using an acetylene torch to carve up steel for a brewing project, I was shocked to hear how mundane—and common—an activity he was engaged in when the awful accident occurred. "I was moving one of my glass carboys when I accidentally bumped it on something. The shock of that caused the glass to break near the top of the bottle where I was holding it by the neck. The weight of the bottom half (filled with beer) brought the sharp broken edge of the carboy slicing down through my wrist, and before I knew it, my hand was literally dangling there, flipped over backwards, connected only by some ligaments and skin. Blood was gushing everywhere."

Fortunately, his Boy Scout training kicked

in and he immediately used his other hand to flip his nearly severed appendage back into place, and held it above his head to slow down the bleeding. He was also lucky that he did not live alone, and his roommate was able to rush him to the emergency room. Miraculously, they were able to reattach his hand, and he still has some use of it, though several fingers no longer

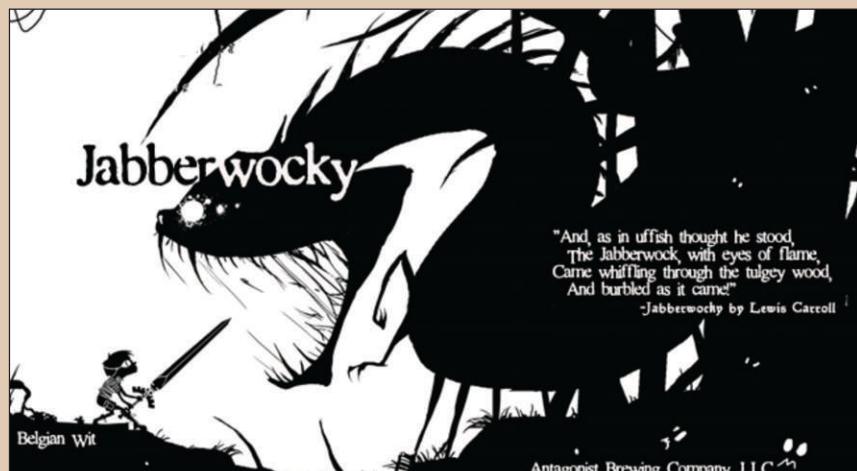
have any feeling or motion in them.

At this point my jaw had dropped to the floor. I couldn't believe what a serious injury could occur from something as common as moving around a carboy full of liquid. I thought of the many times I had done the same thing, or worse, had picked up my glass carboy full of water



FROM OUR READERS

AHA member Rick Blankemeier sent us these homebrew labels for his Antagonist Brewing Company.



after cleaning it, and gave it the old “swirl” to have it drain more quickly. I have accidentally “bumped” the carboy on my stainless steel sink countless times when doing this—fortunately for me, one has never broken in my hands as a result. Yet.

I thought this would be an important warning to share with all of the other homebrewers out there who routinely use glass carboys. I don’t know about you, but I think I will be switching to plastic carboys in the future. With the new “better bottles” out there these days, they do just as good a job on the beer as the old glass beauties, but without the risk to life and limb.

With two hands typing,
Kurt Elia
Maplewood, N.J.

More Cheers for Session Beers

Dear *Zymurgy*,

Thanks for the *Zymurgy* issue on session beers (September/October 2009). I particularly liked Steve Hamburg’s article and the quote for Lew Bryson’s definition of session beer:

“4.5 percent abv or less; flavorful enough to be interesting; balanced enough for multiple pints; conducive to conversation; reasonably priced.”

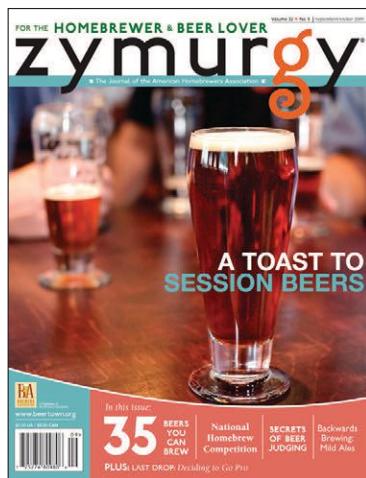
I am still looking at how to make a good session beer to enjoy multiple pints and still be responsible, and to be able to enjoy the flavor without being plastered.

Thanks,
Steve Lacina
Victoria, Texas

Isn’t This Cheating?

Dear *Zymurgy*,

Gordon Strong’s article “Think Like a Judge” (September/October 2009) was generally helpful and insightful, until we got to the section at the end that might as well have been captioned, “And now, how to cheat.” Some of our club’s members were taken aback by the suggestion that a brewer could “fix” a problematic beer (in his example, a beer with lower hop character than called for in the style)



and then actually enter it in a competition, by dosing it with a higher hopped beer such as an IPA to bring it into style. Frankly, our first reaction was, “That’s cheating.”

After brooding about it over the weekend (during which we ran a homebrew competition), my second reaction was, “Nah... that’s cheating.”

I’ve been brewing for over 15 years. I have entered and won a few local competitions, and have won a few first-round NHC ribbons along the way. When I enter a competition, the beers I submit are the beers I brewed, the way I brewed them, for better or worse. Before I send any beer, I agonize over what category is the best fit for that beer. Maybe I am just naïve, but I thought that’s how everyone did it...the honest way. It would no sooner occur to me to “doctor” a beer that I brewed one way in order for it to look, taste or smell like something else by adding a totally different beer to it, than it would to take a beer that I didn’t even brew myself, slap an entry label on it, and call it mine.

Is it that important to some brewers that they have to resort to cheating just to win a medal?

Brewing a beer to achieve a particular result requires skill—ingredient selection, mash parameters, water treatment, hop schedule, post-boil handling and fermentation, etc. But taking a beer that didn’t turn out, and adding an entirely different beer to it, not for the sake of making a more interesting or pleasant-tasting beer

to keep and drink but to actually enter it into a competition, takes no skill. It is cheating, pure and simple. It’s not a beer that was brewed the way it turned out (and please, let’s not hear about how Anheuser-Busch blends half a dozen different batches of Bud so that they all turn out the same), and you can’t possibly reduce it to a legitimate, repeatable recipe. I don’t recall seeing a Winners Circle

FROM OUR READERS

Homebrew labels Pole Vault Ale and 7 Year Itch Ale from Eddie Edwards



Hoosier Summer Wheat homebrew label from Dave Bilger.



recipe in *Zymurgy* that says, "and then if it isn't to your liking, add half a gallon of the IPA you brewed last month...ummm, what was in that recipe...?"

And encouraging people to doctor their beers, not to learn how to brew better beer but solely for the sake of winning a lousy competition ribbon, is not what I think our hobby (or *Zymurgy* magazine) is supposed to be about.

I have a lot of respect for someone with Mr. Strong's credentials and obvious brewing skill and knowledge. But if I actually knew that doctoring beers is how ribbons are won in the NHC (by Strong or anyone else), I'd be very disappointed.

Steve Kranz

Send your letters to Dear Zymurgy, PO Box 1679, Boulder, CO 80306 or e-mail jill@brewersassociation.org. Hey homebrewers! If you have a home-brew label that you would like to see in our magazine, send it to Allison Seymour, Magazine Art Director, at the above address or e-mail it to Allison@brewersassociation.org.

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Seeking Sake



Dear Professor,
I have a friend who cannot enjoy beer due to allergies (a nightmare, I know), but she loves sake. I have been nosing around the Internet for procedure and recipes, and while sake seems to take more time and patience, it seems like it might be pretty easy—except that I don't understand how the conversion of rice starches takes place. Are there enzymes in rice or does it have to do with the ingredient koji (what is it, moldy rice?).

I read someplace that conversion happens at the same time as fermentation but it wasn't fully explained to my expectations (aka Professor Surfeit style). I have read that traditionalists and other sake snobs consider any sake made with adjuncts

other than rice and koji to not be sake, yet an Internet search finds that many (most) recipes use adjuncts such as honey, grape juice concentrate, raisins or corn sugar. Do these or other ingredients add any value (such as a preservative) to the product other than flavor/alcohol content?

Lastly, what is the best yeast to use (perhaps wine or champagne yeast that is tolerant of higher gravity/alcohol content) for sake?

Thanks in advance,
Gary Sandel

Dear Gary,

Well-made homebrewed sake is great. Poorly made homebrewed sake is "interesting" at best. The best book available that outlines the history, culture and how-to-brew-at-home techniques is Fred Eckhardt's 1992 book, *Sake (U.S.A.)*. With this book, you'll learn all the basics and more. Fred's knowledge is unbeatable for a thorough introduction from the homebrewer's perspective.

Koji is indeed "mold" as you refer to it. The mold for Japanese sake is *Aspergillus oryzae Globosus* and is cultivated and grown on specially processed rice. Other countries may use this or a combination of this and other molds. Essentially this mold creates enzymes to help break down rice starches to fermentable carbohydrates. The koji kind of takes the place of malting and mashing.

You're correct in that starch conversion kind of takes place during the fermentation process. Sake making is fascinating but from what I understand from home sake makers the process takes a lot more babying. The steps are, as you say, rather simple, but timing and attending to each phase is essential.

Just like homebrewed beer, there are all

kinds of formulations and suggested processes for making sake. It's a beloved beverage not only in Japan but other parts of Asia. Indigenous methods and ingredients often enter into the mix.

Even though I've never made sake myself, I'd suggest starting out with the basics and never mind the honey, raisins and such, until you become familiar with what the basic process of sake making offers in taste and enjoyment.

Sake yeast is readily available through homebrew yeast suppliers and through your local homebrew shop. If they don't have it, they can order it.

Ahhh so,
The Professor, Hb.D

True Low Energy Brewing

Dear Professor,
I very much enjoyed the article in the March/April *Zymurgy* about low energy brewing—in fact I brewed a low energy beer the next day after reading it. I realized as I was brewing, though, that it is not completely low energy brewing. The instance given was only for an extract brew, which uses the potentially energy-intensive product of an earlier all-grain extraction at some other location. This means for our low energy extract brew, we had a full energy all-grain mash, with perhaps even more energy needed to make the extract than to make a normal all-grain beer, and more trucking of malt extract to wherever it's purchased.

I've been thinking about low-energy all-grain ideas such as using ingredients grown in your home country, working to get higher efficiency so we can use less malt, thicker mashes to heat and boil less water, plate chillers, or using water from

immersion chilling for any of the purposes Railsback and Chamberlin mention. Do you have any thoughts or suggestions on low energy all-grain brewing?

Brewing sustainably,
Nathan Rutz
Crawfordsville, Ind.

Dear Nathan,
Throughout history, brewers have had to make do with the resources available to them. Mind you, it has always behooved the brewer

to be energy efficient because it saves money, work and valued resources.

My guess is that even growing and malting your own grain is not as energy efficient as using malt that's been grown and malted a thousand miles away. When you're talking about the volume of harvest and malting, I would hazard to say that the efficiencies at that scale are great—even if you account for shipping the stuff in bulk 1,000 miles.

This all being said, the satisfaction of making

a statement is in by being aware of what all smart brewers know: if you heat anything (mash, water, boil, etc.) try to preserve that heat by reusing it in other processes. That's easy for a professional brewer because they brew often and can exchange heat pretty effectively with all the equipment and space they have set up.

For homebrewers it's another mindset. You have heated the mash and sparge water and it's a step toward heating to boiling. Then it's necessary to continue to apply energy/heat to boil for one hour in order to enable the reactions that need to take place during a one-hour boil. That's a lot of energy.

Professional brewers have looked at this and several companies have developed boiling systems that reduce a commercial boiling time of 90 or more minutes to a 35-minute "boiling" cycle. Most notably, in the late 1990s Steinecker (a German brewhouse manufacturer) developed its Merlin brewhouse system in which the wort is pumped over a very hot cone. As the thin wort flows down across the cone, the brewhouse reactions are accelerated. Charlie Papazian wrote about this system in the November/December 1999 *Zymurgy*. Both he and I are wondering why enterprising homebrewers haven't developed a mini-version of this sweet unit for home use. Doing away with two-thirds of wort boiling energy is rather significant. The beer I tasted from German brewers using this system was world class.

Now then, once you've boiled the wort, the next step is to transfer the heat out of the boil in order to cool the wort. What do you do with the heat? Does it go down the drain? Are there other ways you can use it? Heat a greenhouse? Make a big pot of soup? Add heat to a home?

Develop a simple perspective. For a homebrewer, it's all about heat conservation.

Keeping the lid on,
The Professor, Hb.D.

Hey homebrewers! If you have a brewing-related question for Professor Surfeit, send it to "Dear Professor," PO Box 1679, Boulder CO 80306-1679; fax 303-447-2825; or e-mail professor@brewersassociation.org.

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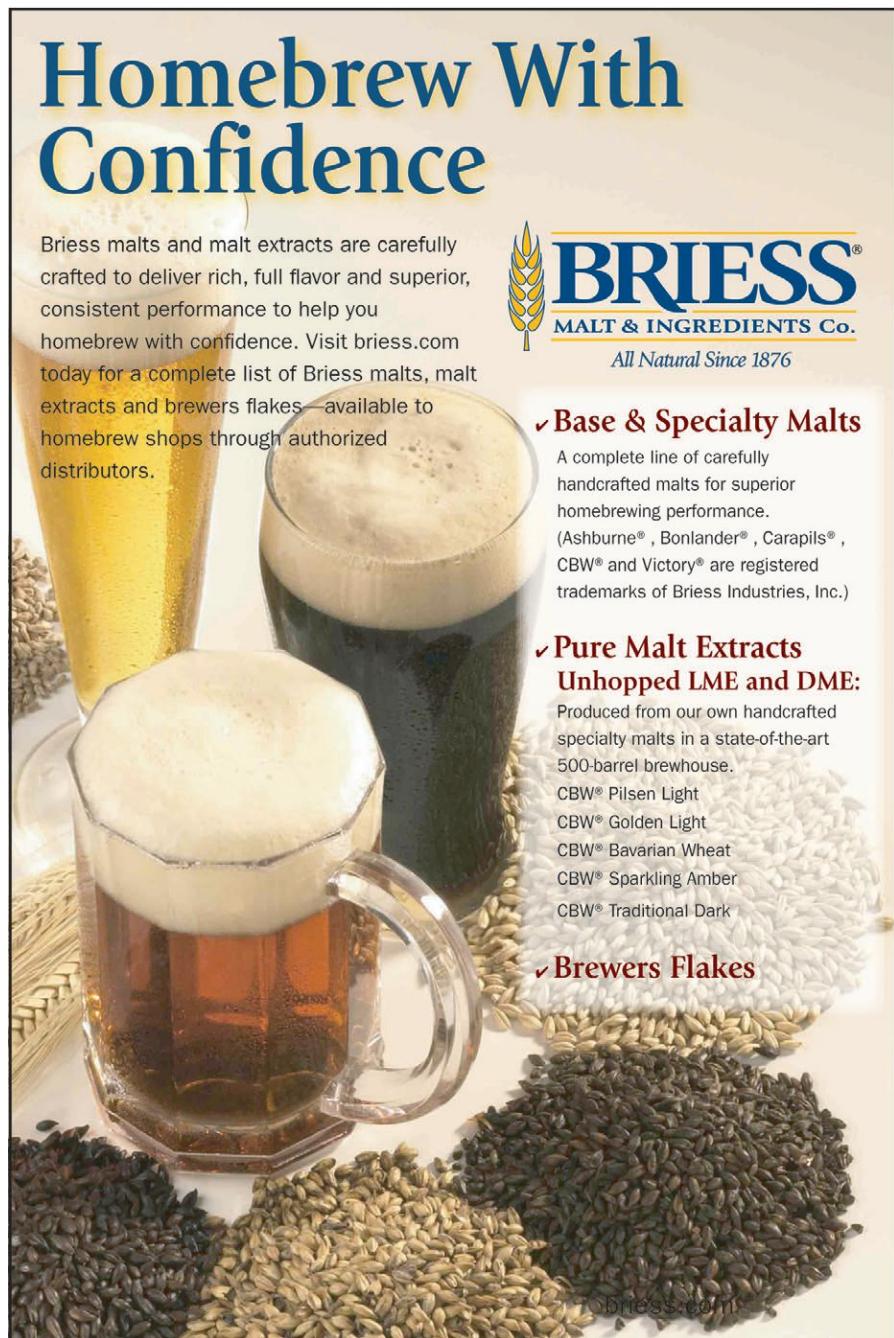
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By Amahl Turczyn Scheppach

English Brown Ales



English Brown Ales are broadly differentiated by geography, as their names would suggest, although historically, “Southern” meant London, and “Northern” meant the rest of England north of London. Northern Browns are typically quite a bit stronger than their London counterparts, with minimum alcohol by volume beginning where London brown ale’s maximum leaves off. Mild ale is a broader subcategory of session ale that may date back to the earliest days of English Porter, and even today, some Milds may overlap with lower-gravity Brown Porters.

The term Mild is old enough to have more than one possible origin. Some think it refers to the low bitterness, and some believe it refers to low alcoholic strength—both may be true. Shorter aging time may also have made these beers milder than ales that spent a longer time in the cask, thus likely developing a stronger, sour taste. Modern Mild is still a very low gravity beer, and is therefore more often found in the cask than in the bottle due to limited shelf life. Generally they are malty, full-flavored beers despite their low original gravity, which ranges from 1.030 to 1.038, yielding a percentage alcohol by volume of 2.8 to 4.5 percent.

Malt complexity can come through as caramel, toffee, toast, bread, dried fruit and nuts for the lighter colored examples, and chocolate, coffee, roast grain, licorice and molasses for the darker end of the scale. Color translates accordingly from copper to dark brown, with 12-25 SRM. Hops don’t factor too strongly with most versions of mild, but an IBU range of 10-25 is possible, and English hop varieties are obviously preferable. Yeast also

lends quite a bit of character, so flavorful English strains are best. Brewing sugars may be used along with crystal and dark malts over an English pale ale base malt.

Southern English Brown ales are far less popular today than their Northern cousins, and are darker, sweeter and lower in alcohol at 2.8 to 4.1 percent by volume. A caramel or toffee-like sweetness is the trademark aroma and flavor of this

Dark Mild Ale

Recipe based on the S.S. Minnow Mild Ale recipe used for the AHA Big Brew celebration of National Homebrew Day in 2009.

Ingredients

for 5.5 U.S. gallons (21 L)

I can	(3.3 lb or 1.5 kg) Coopers Light Malt Extract
1.0 lb	(0.45 kg) Coopers Light Dry Malt Extract
11.0 oz	(0.31 kg) Crystal Malt (55° L)
6.0 oz	(0.17 kg) Crystal Malt (120° L)
3.0 oz	(85 g) *Brown Malt (70° L)
3.0 oz	(85 g) Chocolate Malt (475° L)
1.0 oz	(28 g) **E.K. Golding hop pellets, 4.75% alpha acid (60 min)
	Wyeast 1968 London ESB Ale yeast or White Labs WLP002 English Ale yeast
	Coopers Brewery Carbonation Drops for bottling
	*Use Biscuit Malt or Amber Malt if Brown Malt is unavailable.
	**Use a similar aroma hop such as Fuggle or Willamette if Golding hops are unavailable.

Directions

Steep grains in 3.5 gallons (13.3 L) of cool water, heat to 170° F (77° C) strain and sparge with 0.25 gallon (0.95 L) hot water. Stir in malt extract and bring to a boil. Add bittering hops and boil for 45 minutes. Add Irish moss and continue boiling for 15 minutes. Cool the wort, then pour into fermenter with enough cold water to make 5.5 gallons (21 L). Aerate and pitch yeast when temperature drops to 67° F (19° C). Ferment at 67° F (19° C) for one week or until fermentation is complete. Age in secondary for one week at 67° F (19° C). Prime with Coopers Brewery carbonation drops at bottling for a carbonation of approximately 1.0-1.5 volumes of CO₂. After the beer is carbonated, store for a couple of weeks at serving temperature of 50°-54° F (10°-12° C) before serving.

Original Specific Gravity: 1.035

Final Specific Gravity: 1.010

IBU: 15.7

ABV: 3.3%



increasingly rare style, which may have become popular in London as an alternative to sour vatted porters.

While not much stronger than mild ale at an original gravity of 1.033-1.042, Southern English Brown ales finished appreciably higher with terminal gravities in the 1.011-1.014 range, so residual malt was more evident. Dried fruit like raisins and prunes is often part of the aroma/flavor equation. Hops, roast or dark grain bitterness should not be evident in this

beer, and a smooth sweetness in the finish is desired. Roast or black malt can be used in the grain bill in small amounts, as long as it does not contribute perceivable character. Color is a medium brown to mahogany 19-35 SRM. Moderate to high carbonate London-type water balances any dark malt acidity.

Northern English Brown ales are led by commercial examples like Newcastle and Samuel Smith's Nut Brown, which exemplify smooth-drinking, gently malty but

drinkably balanced ales. Higher in hops than the London version, some floral hop aroma may be present, but a toffee-like, nutty malt character should dominate. Slightly fruity ale characteristics may also contribute complexity. An original gravity of 1.040-1.052, resulting in a strength of 4.2 to 5.4 percent by volume, places these ales in the upper range of what's considered session beer, but they are still very easy to drink thanks to a careful balance. Mild ale or pale ale English malt should serve as the base, with smaller amounts of caramel malts and a touch of dark malt like chocolate to add color and nutty character. Color is generally lighter than in Southern English Brown, with an SRM range of 12-22, somewhere between dark amber and light orange-brown. Again, water with moderate carbonate content brings out the appropriate malty character, though hops have a clearer presence in the flavor. Elaborate blending techniques can be used for Northern English Brown, as is traditional for Newcastle, but they are not necessary to produce an authentic version of the style.

Amahl Turczyn Scheppach is a former craft brewer and associate editor for *Zymurgy*, and now brews at home in Lafayette, Colo.

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Homebrew Gadgets

By
Zymurgy
Readers



1. Pump with Built-In Switch and Carrying Handle

I use the pump to transfer, whirlpool 10 minutes after boiling, and to push through my heat exchanger. I used a Little Giant pump TE-3-MD-HC 1/25 hp. The structure is made from aluminum, steel shelf standards, PETG clear plastic (forms easily) and Azek PVC board. The pump is controlled by a wet-area on-off switch.

Bob Schneider

Yeast Coasters
Brewers on the Lake
West Michigan



To construct the filter, I cut the stainless mesh into two equally sized 10" squares with a small rectangular protrusion in the middle of one of the sides to accommodate the copper pickup tube and a hose clamp to seal off the filter. I laid the mesh sheets on top of one another and sewed them together using the stainless lock wire. The copper tubing was inserted through the opening and secured in place using the hose clamp. This option also allows easy removal of the pickup tube and easy cleaning of the inside of the filter. Total price for the filter was less than \$30 in materials.

Wade Hicks

Boston Wort Processors
Framingham, Mass.



3. Corny Keg Cleaner

The homebrew supply houses often sell a spiffy little pump device designed to flush cleaner through your beer lines. Most of these appear to connect to the tap shank in place of the faucet, and flush the lines back toward the keg. But it's the tap itself I want to clean, as well as the lines. (I also used this opportunity to get one of the Ventmatic type faucets, which seal at the front instead of the back.) What I want is a pump device I can connect the keg disconnect to and flush cleaner through the lines and through the tap as well.

Take a garden sprayer and some parts, and here's a handy and inexpensive beer line cleaner you can build in about 15 minutes.

The Delta Sprayer was about \$7 at the local garden center. Remove the tip of the sprayer nozzle and set that aside. You'll need a Corny Keg Plug adapter, like Northern Brewer's K168, which has 1/4 inch female flare threads on one end, and the 19/32" male threads and O-ring on the other so a Quick Disconnect plug can fit it. I used a K108 Liquid Type B (Cornelius Ball Lock) plug assembly for the beer line adapter.

I was intending to experiment with hoses or tubing or some sort of ugly, floppy lashup to get the plug adapter connected to the business end of the sprayer. If you

choose one of the larger sprayers with the hose and wand, you're halfway there. But fortunately in my case, the plastic tip of the sprayer, minus the actual spray head itself, was a tight fit for the flare end of the adapter. So I carefully screwed the adapter onto the end of the nozzle itself, cutting threads in the plastic as I went.

This wasn't quite enough to stop leaks, so I removed the adapter and schlocked a little silicone glue (use aquarium or food grade type, which doesn't have mildewcide in it) onto the plastic and replaced the adapter, being careful not to strip the newly-made threads, and then let it dry.

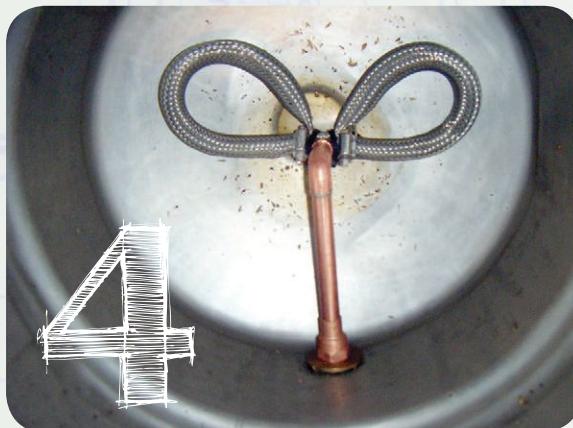
When done, put the liquid plug on and away you go! Charge the sprayer with your favorite cleaner (I use OxyClean), pump up the pressure, hook up the liquid disconnect from your kegerator, press the sprayer button and tap enough cleaner to get the grunge out of those lines!

Cal Frye

Oberlin Area Fermentation Specialists

4. Mash Tun Filter

I built a homemade mash tun filter for converted kegs with threaded female NPT on the inside keg wall. I've gone through about six designs to get to this one (my



best performer). It is built on a 3/8" copper feeder with 90-degree pickup to center of keg bottom. A 3/8" T with 1/2" sides. The SS braid is from a 1/2" x 24" hot water heater feed line found at Home Depot (\$10). Cut the ends off the SS feeder hose and pull off the SS braid from the rubber interior hose. Attach both ends of this braid to the 1/2" T with SS clamps. Then to keep the braid on the bottom of

the keg, use zip ties to make "ears." I simply fit the 3/8" copper into a 3/8" receiving end inside the keg without solder so I can remove the assembly to clean. Very little vorlauf and you're good to go!

Kjell Wygant
Castle Rock, Colo.

5. Sanitizer

I have a really simple gadget—a device used to sanitize long items such as racking canes, thief, auto-siphons, etc. The bucket I mix sanitizer in isn't big enough to fit these items, so I found a more economical solution than just getting a larger container and mixing up more sanitizer. Yep, it's just a 1.5" PVC pipe with an endcap, stuck into a chunk of wood with a hole in it to form a base, but it does the job and is one of the cheapest gadgets in my toolbox. Only takes about a quart of sanitizer to fill the pipe, then drop in the racking cane and it's covered inside and out. I usually dunk the top into my sanitizer bucket first to clean the curved part, then dump it into the tube to get the rest.



Matt Morris
Horsemen of the Hopocalypse

6. Boil Kettle

I have kind of a unique boil kettle, an industrial-sized pressure cooker that makes the transfer into the carboy pretty slick. I use a stainless pool filter cover as the lighter weight lid, but when that boils over I snap on the sealed lid and through



a dip tube on the inside of one of the ports I pressurize the kettle with CO₂ and transfer the wort through my stainless wort chiller submerged in ice water (strangely it looks like part of a still) into the carboy. I'm usually right at pitching temp.

Craig Wickham
Maltose Falcons

7. BrewLadder

I have designed and built the original BrewLadder, a portable three-tier all-grain brewing rack that uses a modified 6-foot step ladder. You need a wooden ladder because the steps are removable and my design requires the removal of two of the



ladder's steps. I found what I needed at an Ace Hardware store, a six-foot Type III (weight limit 200 lbs.) Werner ladder.

The idea is to attach a fold-down shelf to the front uprights of the ladder, similar to the little fold-down shelf on the rear of the ladder that holds a can of paint, tools, etc. When the shelf folds down, the rear arms of the shelf are stopped by one of the ladder's cross-members in the rear, which allows the shelf to support the significant weight of a full mash tun.

Parts:

- 1 — 6-ft. wood stepladder (Werner brand probably the most available)
- 2 — 1 x 3 x 8 ft. framing lumber
- 1 — 1"x13"x12" board for the top shelf
- 2 — $\frac{3}{8}$ " x 2.5" hex bolts
- 4 — $\frac{3}{8}$ " regular washers
- 2 — $\frac{3}{8}$ " fender washers
- 2 — $\frac{3}{8}$ " lock nuts with nylon inserts (at Lowe's they're called "stop nuts")
- 2 — $\frac{3}{8}$ " nylon spacers, about $\frac{1}{4}$ " thick, or about a dozen more of the fender washers
- 1 $\frac{1}{2}$ " flathead wood screws or decking screws

Parts and hardware for the basic BrewLadder should come in under \$45. You'll only need some basic tools, including a circular saw or hand saw, a hacksaw, level, a clamp (two is better), drill,

screwdrivers, measuring tape, pliers and an adjustable wrench or socket set.

Steve Kranz

Midnight Homebrewers' League
Westminster, Md.



8. Hop Dryer

I have found this gadget indispensable at hop harvest, and it vastly improves the quality and storage life of the hops. I live in a hop growing area and have seven strings 20-feet high, so I handle a lot of the flowers. When the hops are ready, it is important to get them picked, dried, packed and stored as quickly as possible.

My hop dryer consists of a stack of plywood trays atop a standard floor fan, which rests on a pair of sawhorses. The trays have bottoms of 6mm rat mesh to let the air flow upward through the hops. I sized them so that they hold a 20-liter pail of hop flowers without crushing them to allow air flow. I have six trays, because that's all I care to pick in a day, and the hops dry evenly and thoroughly in 24 hours.

John Bell
Pasco, Wash.

9. Fermentation Chiller

I like to brew a lot of Kölsch and a bit of alt. The only problem is the basement temps climb closer to 70° F in the summer. I started looking at all kinds of temperature control (Son of Fermentation Chiller, extra fridge, cooling cabinet, etc.).

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but I don't have space for another unmovable object between the beer cellar, kegerator, brewing equipment and tools.

I remembered hearing about someone who had used the Igloo Ice Cube Max with the domed lid (\$80) and drilled a hole for the carboy neck to go through. That seemed a waste if you ever wanted to use the cooler for its original purpose. Therefore I devised this plan. Take a \$20 50 qt. Ice Cube cooler and build an inexpensive insulated lid, removing the old lid (easily done). Total cost is about \$25 and takes about 30-45 minutes to make. It holds a 6.5-gallon carboy.



I built a lid out of styrofoam sheet insulation (you can also use hard foam insulation). A 1" thick 4x8 sheet runs \$20 at Home Depot, and will make four lids. If you know someone else who's going to build one, you can buy it together. I put the carboy in the cooler, add some water (3 gallons or so) and rotate in frozen 16-ounce soda bottles filled with water and pop the lid on. How many bottles and how often I swap out depends on how it's maintaining temp and what I'm trying to accomplish. I monitor the temp using a floating thermometer (leftover from the extract days) and a fermometer on the carboy, attached above the water line. This system is pretty simple, and you can maintain fermentation temperatures within a few degrees of your target.

Dave Blank
Oakland, Calif.

10. Mash/Lauter Tun

False Bottom

When I started all-grain brewing, my first mash/lauter tun was the Zapap bucket-in-bucket system from Charlie Papazian's *The New Complete Joy of Home Brewing*. This system uses two buckets; one bucket has lots of holes drilled into the bottom, the second bucket has an outflow tube. When the bucket with the holes is fitted into the other bucket, the bucket with the holes acts as a false bottom.

I found that because the buckets did not fit snug into each other, there was a lot of "dead space" between the two buckets, possibly affecting efficiency. Also, since the buckets did not fit tight, wort would leak from between the two buckets (overflowing from the bottom bucket.) The challenge was to find a way to get the buckets to fit closer into each other.

After seeing several commercially available false bottoms, the idea came to me to cut the bottom off of the bucket with the holes to make a homemade plastic false bottom. After drilling the holes with a 1/8" bit, I cut 1 inch off the bottom of that bucket using a jigsaw. Be sure to cut a notch to allow clearance for the outflow tube. Flip the bottom "upside down" and place inside the other bucket with the outflow tube. The rest of the cut-off bucket makes a great carboy stand to hold a carboy upside down when drying.



When brewing, I wrap a blanket around the bucket and hold it in place with bungee cords. You can get used frosting buckets from the bakery section of your local big-box store or warehouse club. Most of these come in 4.5- or 5-gallon sizes. Just be sure to clean them or the remaining frosting will mold!

As always, wear safety glasses when using power tools.

Kirk Bigger
Colorado Springs, Colo.

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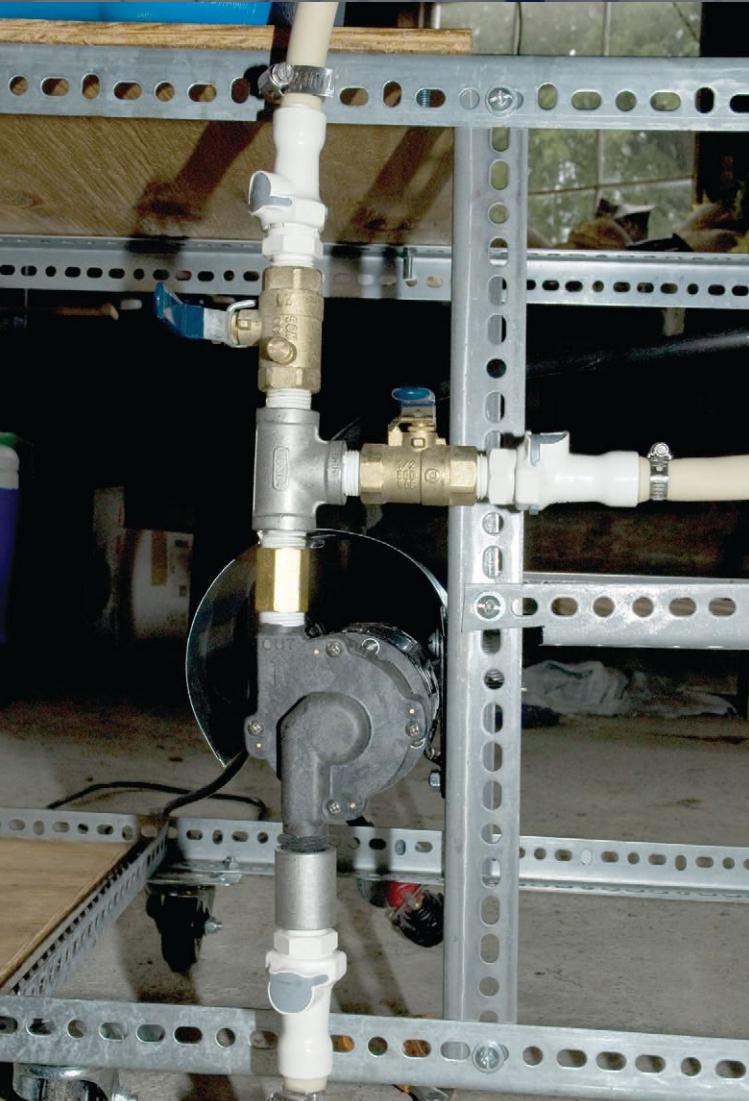
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Close up of March Pump and T junction: Wort enters from the bottom of the pump and exits through the top. Wort exiting through the upper ball valve with bleed returns to the lauter tun for recirculation. Wort exiting through the ball valve on the right flows to the boiling kettle.



Stand by Your Brew:

Building a Two-Tier Stand

PHOTOS AND TEXT
BY MARK PASQUINELLI

I'M a practical guy, someone who likes to keep things simple. It's the same with my homebrewing. A few summers ago, I wrote a Last Drop for Zymurgy extolling all-grain brewing, and how I found refuge from the madness of the world by brewing with a longer process and keeping things simple.

But no one said simple can't be improved upon.

My wife, while watching me hoist hot water overhead for my jerry-rigged three-tier system, said, "That's dangerous. You need a pump."

I thought it was touching, her concern for my safety—and that it had nothing to do with the fact that I had yet to purchase life insurance.

THE MASTER PLAN

Approval from the CFO for a pump was much more than that; it was also tacit consent to build a permanent brew stand. I Googled stand designs to see whether a one- or two-tier system would work best for me. I also asked lots of questions on an online forum. A major consideration was that I'm not handy by any means—and in the words of that great philosopher Harry Callahan, "A man has to know his limitations." Politely put, the

Copper recirculating arm leading back to the Igloo Cooler lauter tun



A bare bones view of my two tier brew stand.



design couldn't be too complicated. A further constraint was that the stand had to incorporate my equipment—two kettles with propane burners and a cooler—to minimize costs.

The single-tier stand was appealing. It would be smaller, easier, and cheaper to build. But unless I switched to batch sparging, it would also require a second pump, and my budget was limited. That left the two-tier stand that operated by a combination of gravity and a pump—the best of both worlds—as my choice.

The next decision was the stand material: wood or metal. Wood stands look nice and can be constructed cheaply, but they're heavy. I also didn't like the idea of wood around propane burners. Metal stands are sturdy, easy to construct and, let's face it, look more brewer-ish. I didn't know how to weld, but I could assemble one from steel angle with bolts, nuts and washers.

Unfortunately, steel is very pricey. Overall, metal prices have fallen since the recession, but steel has stubbornly resisted. When I constructed my stand last winter, 8-foot sections of 1-1/2" x 1-1/2" 14-gauge galvanized steel angle from a home-improvement chain store were about \$19 each. At the writing of this article, steel angle now stands at \$25 per section, and my design requires nearly nine sections. To keep this project affordable, I highly recommend finding a specialty distributor or canvassing junk yards to get a better price. Don't be afraid to mention that it's for homebrewing. You'd be surprised by the interest it piques and the doors it opens. They may even offer to cut it for free for a few bottles of homebrew.

HOW I DID IT

I worked out a sketch for my stand using my kettles, burners and cooler to dictate the design and dimensions. A burner and kettle on the upper level would serve as a gravity-fed hot liquor tank (HLT). I would

still have to lift water, but not nearly as high—plus the water would be at room temperature, not 180° F! Plywood shelves would support both burners and propane tanks. My 48-quart Igloo cooler in the middle would work as a lauter tun and rest on another plywood shelf, just above the pump. At the other end would be the second burner and a kettle that would do double duty for mashing and boiling. The stand would also be on casters, giving me the flexibility of brewing outside or retreating to the garage for inclement weather. I made sure to over-design the entire structure to withstand the weight of 10-gallon batches, even though I brew only 5 gallons at a time. One never knows when you may have to crank out a few extra gallons for a special occasion.

Another consideration was building with flexibility for the future in mind. If I ever get a third kettle for my mash/lauter tun, it would be no problem to install a platform to accommodate a third burner.

With all that said, please use my design and measurements as a guideline, not gospel. Also, remember to take your height into consideration. (I'm 5'7" on a good day.) I designed my stand to fit my propane burners, but if you have the expertise to install burners with gas lines and regulators, I urge you to do so.

Initially, I tried using a reciprocating saw to cut the metal, but I was unable to properly anchor the steel angle, and the pieces twisted and bent as I sawed. I soon switched to a hacksaw that worked amazingly well for someone who will never be confused with Arnold Schwarzenegger.

I pieced the frame together, taking care not to fasten everything tightly just yet. The next step was to re-measure and check with a level to make sure nothing was cattywampus. Only then did I cinch bolts for keeps. The brew stand did have a little instability, so I installed a pair of metal struts from slotted steel flats on both ends and in the back to brace it.

IT'S ALIVE

Mounting and connecting the March 809 magnetic impeller pump was next. The pump is food grade, handles temperatures to 250° F, has a ½" MPT inlet and outlet, and lists for about \$140. The March pump, however, is not self-priming and needs to be mounted below the mash tun. The pump head also needs to be rotated so that the wort from the lauter tun flows in from the bottom and out from the top. At the pump's out-flow, I installed a stainless steel T coupled to two ball valves. The first ball valve leads upward, back to the later tun for recirculation. This valve has a bleed to purge air from the line to facilitate better wort flow. The second ball valve at the T branches off to the right at a 90° angle and leads to the boiling kettle, which also has its own ball valve.

These entities are connected with thermoplastic rubber tubing, available from several homebrew retailers. This tubing has thick walls, which will not collapse under

the pump's suction, and is safe to 275° F. Unfortunately, it's not transparent, making it difficult to observe wort flow. But the tubing's thickness allows it to be held, so that heat can be detected—and wort flow may be monitored thusly.

At this point, a word of warning is in order: I cannot over emphasize the purchase of a ground fault circuit interrupter (GFCI). The pump housing is not drip proof. For added protection, I also fastened a sec-

MATERIALS LIST

Dimensions: Length: 72", Width: 18", Height (w/o Casters): top level 48", bottom level 20"

- March 809 Magnetic Pump
- Ground Fault Circuit Interrupter (GCFI)
- 14-Gauge Galvanized Steel Angle- 1-1/2" x 1-1/2" cut accordingly: 4 – 48", 4 – 72", 16 – 18", 2 – 26"
- 14-Gauge Slotted Steel Flats- 1-3/8" cut accordingly: 4 – 25", 2 – 36"
- 2 pk (50 ea) Machine Bolts: 1/4-20 x 1/2"
- 5 pk (16 ea) Flat Washers: 1/4"
- 8 ft Thermoplastic Tubing: 1/2"
- 6 ea Hose Barbs: 1/2"
- 6 ea Stainless Steel Hose Clamps: 1/2"
- Ball Valve: 1/2"
- Ball Valve w/Bleed: 1/2"
- Stainless Steel T: 1/2"
- 3 ea Nipples: 1-1/2" x 1/2"
- 2 ea Couplings: 1-1/2" x 1/2"
- Teflon Tape: 1/2"
- 6 ea Heavy Duty Casters: 2-1/2"
- 3 ea Plywood: 18" x 18" x 1/2"
- 2 ea Plywood 18" x 24" x 1/2"
- 8" galvanized pipe: 3" diameter (pump shield)

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My wife Karol and I enjoying a homebrewed Hefeweizen beside our brew stand.



INAUGURAL HEIFER-WEIZEN

All-Grain Recipe

INGREDIENTS

for 6.0 gallons (22.7 liters)

7.5 lb	(3.4 kg) Wheat Malt
4.0 lb	(1.8 kg) Pilsner Malt
0.5 lb	(227 g) Munich malt
1.25 oz	(35 g) Hallertau Mittelfruh or Liberty hops (4.0% a.a.) 60 min
0.5 gallon	White Labs WLP300 yeast starter
4.95 oz	(140 g) corn sugar

Original Gravity: 1.060

Final Gravity: 1.011

SRM: 3.9

IBU: 20.0

Efficiency: 75%

DIRECTIONS

Step mash grain at 104° F (40°C) for 15 minutes, 125° F (52°C) for 15 minutes, 150° F (66°C) for 60 minutes, and mash out at 170° F (77°C) for 5 minutes. If unable to perform a mash out, add a few handfuls of rice hulls to the mash. Ferment at 60° F (16°C) to 62° F (17°C) for two to three weeks. Carbonate with priming sugar or keg at 2.8 volumes of CO₂. Condition for two weeks and enjoy.

Extract version:

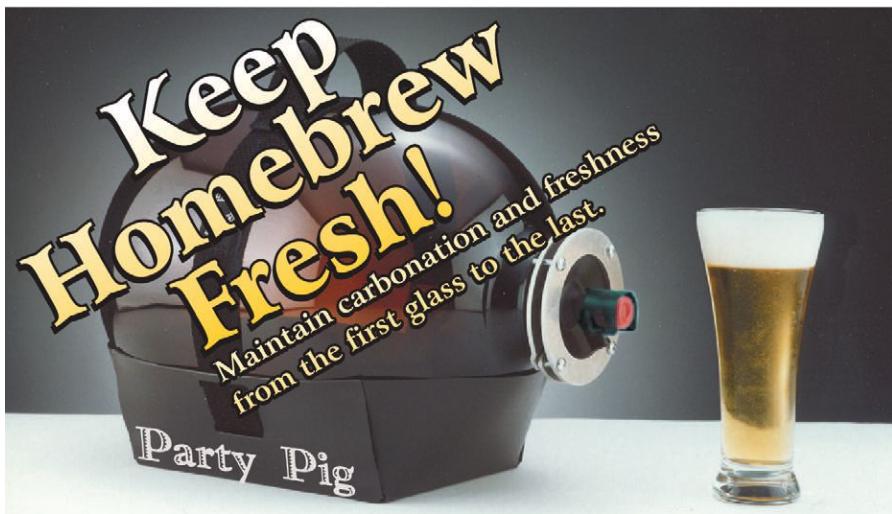
Substitute 4.75 lbs wheat DME or 5.9 lbs wheat LME for the wheat malt, 2.5 lbs pilsner DME or 3.2 lbs pilsner LME for the pils malt, and 0.3 lbs Munich DME or 0.375 lbs Munich LME for the Munich malt. Check the type of wheat extract; some manufacturers make a Bavarian Wheat blend of extract that includes both pale and wheat malt. If that is what you can get, use 7.6 lbs DME or 9.5 lbs LME in place of all malts.

tion of galvanized pipe above my pump. Electricity and wort are a bad mix, and the two will eventually seek out and find each other. The GFCI will instantly recognize this ill-fated rendezvous and interrupt the circuit. Your life is worth \$13.

THE MAIDEN VOYAGE

After everything is assembled, I suggest filling your lauter tun with hot water for a test run. This will check for leaks and give you a feel for the pump, let you know what ball valves to open in what sequence and how much to open them. A cheat sheet of your procedure would be a good idea for the first few batches on your new stand.

You may either perform an infusion mash directly in the cooler, or do as I do: mash in the boiling kettle for better temperature control (I stir every 15 minutes and add heat as needed) and then gently transfer to the cooler when the mash out is complete. All the ball valves are closed at this time. Open the ball valve from the mash/lauter tun Igloo cooler all the way (the inflow to the pump is always



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unrestricted), and turn the pump on. Next, open the ball valve leading upward to recirculate the mash. It may be necessary to tweak the bleed valve to purge the air from the tubing. Once wort begins recirculating to the lauter tun, throttle the valve back so that a slow, steady stream is established for five to 10 minutes. This will allow the wort to clear and give the grain time to establish a filter bed. Next, close the recirculation valve and open the two valves leading to the boil kettle. You will have to jockey these valves to establish a steady wort flow that will not spray and cause hot side aeration. You're in the home stretch now. Open the valve on the HLT and begin the gravity-fed sparge, trying to keep the inflow and outflow to and from the lauter tun as equal as possible. Once the sparge is complete, close both valves to the boil kettle, turn off the pump, and begin the boil.

Originally, this system was connected with ½" hose barbs and stainless steel clamps. The hose barbs have given way to polysulfone quick disconnects (QDs). This makes for a much faster procedure, but the QDs are more expensive and the cross-bar inside them needs to be reamed out with a Dremel to prevent clogging. I still use the stainless steel hose clamps, but they have sharp edges and will soon be replaced by Oetiker stepless clamps.

Clean-up is easy. Save the hot water from your chiller, and pump it throughout the system. Then pump with PBW and flush with water.

If I can build this, anyone can. I have no empirical evidence, but the homebrews seem better now. Perhaps the pump is gentler with the wort. Perhaps a little automation leads to a more relaxed brewer and better beer. Perhaps it's a combination of all these things. For good luck, I've included the recipe for the first homebrew I made on my stand. I think you'll like it.

Mark Pasquinelli resides in Elysburg, Pa. with his wife and four cats. He's a member of the PA-Alers Home Brew Club and has been homebrewing since 1995. He likes to brew pale ale, pumpkin ale, and an Imperial Stout with hallucinogenic qualities.

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CROWN ME: OXYGEN-ABSORBING BOTTLE CAPS

BY TED HAUSOTTER

A CROWN: so simple an object, but the last line of defense (other than proper storage) that a brewer gives his or her beer, keeping the carbonation level proper and beer spoiling organisms out. Crowns also slow, prevent and even reduce oxidation that causes a beverage to prematurely stale. While they cannot solve or reverse oxidation from improper brewing techniques, they can stop oxygen ingress and absorb some packaging-induced oxidation.

Prior to crowning, more commonly known as capping, beers were packaged with corks. In 1891, William Painter took a piece of tin and punched it into a die, and the first crown cap was born. He patented the crown cap in 1892 and thus created a unique solution to packaging issues. The crown cap reduced costs, speeded up production in bottling and reduced uncarbonated bottles of beer. His first cap was lined with a cork disk. Plastic liners were introduced in the 1950s.

Today, crowns are made differently for pry-off and twist-off bottles, with different liners for twist-off caps. An important purpose of a crown cap for beer is to keep pressure in and oxygen out. All caps keep pressure in, but different caps vary in their ability to keep oxygen out, as all liners are not equal. The simplest and most commonly used caps work well for soda pop, as sodas are less oxygen-sensitive than other beverages such as beer, mead and ciders.

OXIDATION OF BEER

Oxidation of beer, ciders and meads starts with oxygen that is dissolved in our beverages prior to bottling. During the bottling process, some additional oxygen is entrapped in the bottle. Additional oxidation happens after bot-

ting, as oxygen ingresses under the cap and stales the beverage.

Oxygen tries to reach equilibrium with the atmosphere in the head space, a process called diffusion. With less oxygen in the head space, there is a slow migration or creep of oxygen from the oxygen-plentiful air or atmosphere to the inside of the bottle where there is less. Oxygen molecules are gaseous and do not follow the same principles of fluids. They are able to slip into a bottle that still has pressure, creating oxidation issues. It is one of the principles of science that defies logic!

One option for brewers is oxygen-absorbing caps, which have an additive in the lining that works to absorb oxygen. The easiest way to think about it is to relate it to hemoglobin in our blood that absorbs oxygen when we breathe. This process starts once the caps are wet and continues until all the absorbing capacity is filled. Normal humidity will not start the process. With their oxygen-absorbing capability, these caps continue to absorb dissolved oxygen as it comes out of solution.

Oxygen-absorbing caps are available from multiple manufacturers, including Famosa and Crown Holdings Inc. (originally started by Painter as Crown Cork & Seal Company in 1892), which offers OXYCAP® crowns for both pry-off and twist-off bottles. The oxygen-scavenging liner absorbs 0.35 cc of entrapped oxygen molecules and forms a barrier to prevent further oxygen ingress. The benefit to the brewer is that beer will taste better longer, with a fresher flavor and increased shelf life. Oxidation flavors such as cardboard, paper and harsh characters are reduced. Beers packaged with this style of cap retain the flavor the brewer intended for a longer period of time. This is why many breweries use these caps. What they will not do is correct any problems in the processing of beer. Good practices such as not splashing beer when bottling and purging bottles prior to filling will help keep your beer fresher longer.

USING OXYGEN-ABSORBING CAPS

The choice of how to cap your beer is less confusing as a homebrewer versus a com-

mercial brewer, as we have fewer options. Most stores will offer two choices, the oxygen-absorbing cap and non-oxygen-absorbing cap. Take the time to look at the liner and select your cap based on which one looks like it will have the most barrier material to keep oxygen out of the bottle.

Crowns are packaged by the manufacturer under sanitary conditions and are ready to be used upon removal from original packaging. Even with a modest packaging rate, a 70 gross box will be used in less than a few hours by commercial bottlers. For homebrewers, a 1 gross package may last a few years.

Oxygen-absorbing caps are sometimes resold to wholesale trade suppliers such as BrewCraft USA and are repackaged. I asked Jon Graber of BrewCraft about the conditions in which they repackage the caps. He assured me that they take care to keep them in the sanitary condition they were originally packaged in using food-grade handling gloves, masks and sanitized equipment.

Using the caps comes down to three approaches. The first is to use as packaged. If you adopt this method, keep your packages sealed at all times to keep out any dust that may contain bacteria. When you are ready to bottle, dump a few out on a sanitized surface, fill the bottles and cap.

The second approach is to sanitize them. You should avoid boiling as it activates the scavenging capacity of the cap, and dry heat may hurt the integrity of the liner. UV wands are a good option, but can cause skin cancer. The next option is to put them in sanitizer for a short period of time, using either Star San or Iodophor, keeping contact time short as you are activating the oxygen-absorbing capacity of the cap. It would be best to put in one at a time.

The third approach of using the caps would be to rinse with sanitized water, a common step in commercial bottling systems. This would remove any dust and particles that might harbor bacteria.

If you do decide to invest in oxygen-absorbing caps, keep them clean and select one of

the sanitizing methods above to maintain their oxygen-scavenging capability.

NEW TECHNOLOGY

Recently, Sierra Nevada Brewing Co. of Chico, Calif., changed its caps to barrier caps; you might have noticed they are now pry-off caps. The barrier crown technology blocks oxygen ingress without using oxygen-absorbing compounds, according to Sierra Nevada. The brewery felt that its beer tasted better with this style of liner in the cap. The decision to offer a less convenient packaging for their customers was not easily made. Sierra Nevada actually started researching caps and different liners 10 years ago, and started the changeover in 2007. Through their research with their beers, they felt that the barrier caps gave a better flavored beer for a longer period of time.

According to Sierra Nevada's Tom Nielsen, there are no perfect liners in caps, and they all change the beer flavor slightly. Remember we are talking about craft beer for a select market that expects more out



of its beer. The barrier caps are a simpler technology with a thicker, more rigid liner, which works better than the standard cap in keeping out oxygen. Sierra Nevada found that the barrier caps tend to scalp some hop character from the beer, while the PVC liners in standard caps and some oxygen-absorbing caps scalp fermentation esters. Their search for the highest quality flavor goes beyond nitpicking and even surpasses deep soul searching; they are on the quest for the Holy Grail so they can fill it with a pint of their beer!

Full Sail Brewery of Hood River, Ore., has used oxygen-absorbing caps in the past, but did not find enough benefit to continue using them. Naturally, they tested their beers with forced aging against the same batch of beer treated properly and cold stored. They found that cold storage made a much bigger difference than the type of cap they used. According to head brewer Jamie Emmerson, the oxygen level in their bottles is as low as 25 parts per billion. Naturally, you can see why

they did not find a big benefit with the oxygen-absorbing caps.

Your job as a homebrewer is to determine what is best for your beverages. If you drink your homemade beverages fast, it might not be worth it to spend the extra money on a better cap. (For example, on one online store, 144 plain bottle caps were \$3.69 compared to \$4.49 for the same number of oxygen-absorbing caps). The same can be said if you wax your bottles or naturally carbonate in the bottle. Some beer styles will benefit from some oxidation character such as an old ale or barley wine. If this is not what you brew, taking steps to reduce oxygen in your bottles makes sense. Along with good brewing techniques and purging your bottles prior to filling, the oxygen-absorbing cap may be the best choice for you.

Ted Hausotter is an award-winning homebrewer from Baker City, Ore. and the Mountain/Northwest regional representative for the Beer Judge Certification Program.

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Camp 13 attendees pose with
Sierra Nevada brewers and
hosts in the pilot brewhouse

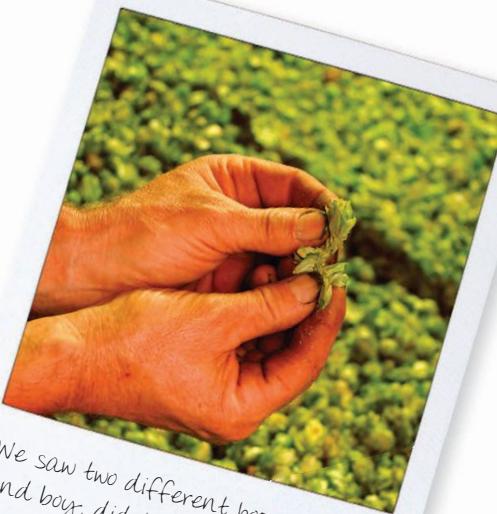
Sierra Nevada Beer Camp: Learning from the Pros

BY GORDON STRONG



Sierra Nevada's state-of-the-art brewery is worth a visit by itself





We saw two different hop cold rooms, and boy, did they smell fantastic.

In the movie "Willy Wonka and the Chocolate Factory," children all over the world search for the "golden ticket" that will let them into the famous confectionery. This past September, I was one of 22 lucky homebrewers who got their own "golden ticket to imagination and adventure" at the Sierra Nevada Brewing Company in Chico, Calif.

Ken Grossman, founder and owner of Sierra Nevada, was the keynote speaker at the 2009 AHA National Homebrewers Conference. He surprised us all with the announcement that anyone winning a gold medal at the National Homebrew Competition (NHC) would be invited to take part in Sierra Nevada's Beer Camp —something that had only been previously offered to industry insiders. What a prize!

We attended in two different groups due to our numbers. Our hosts were Steve Grossman (Ken's brother, and the "Brewery Ambassador") and Terence Sullivan, who runs many of their events.

If you haven't been to Sierra Nevada, it's worth the trip for the taproom alone. It's a beautiful bar with a great selection, many only available at the brewery, as well as

superb food. My favorite beer was (surprisingly) the Kölsch; it tasted as good as the best ones I've had in Cologne. I guess some other people thought so too because it won a gold medal at the Great American Beer Festival later that month.

Our groups had a full tour of the brewery facility, including plenty of time to ask detailed questions of the staff. We saw their hop and barley fields, as well as their own rail spur where they receive their base malt from Canada. Their three separate labs—which focus on quality control, research and development, and sensory evaluation—were particularly impressive. That last one was especially fun, since our visit included a vertical tasting of four Bigfoot Barleywine vintages. We also received sensory training and could have our own beers analyzed in their labs.

After formulating group recipes, we got to brew them on their 10-barrel pilot system. Sierra Nevada worked to get those beers served in our favorite bars, which was a special treat.

During our two-and-a-half days in Chico, we were treated like rock stars. It felt like having a backstage pass to a concert, combined with the best of an NHC—including sampling the full range of beer, plus the efforts of other camps. We even got to attend a local homebrew club meeting held at the brewery. Sierra Nevada really rolled out the red carpet for us; everyone in our groups was blown away by their generous hospitality. I certainly have a newfound respect for their brewery and their beers.

While I could spend pages talking about all the fun things we did, I think it is more interesting to describe what we learned while there. Thanks to all my beer camp friends for sharing their favorite anecdotes.

Professional Practices

In general, they use fresh, high-quality ingredients, follow good sanitation practices (everything we saw was absolutely spotless), carefully measure and monitor key process control points, keep good records, and have a strong commitment from everyone working there to make

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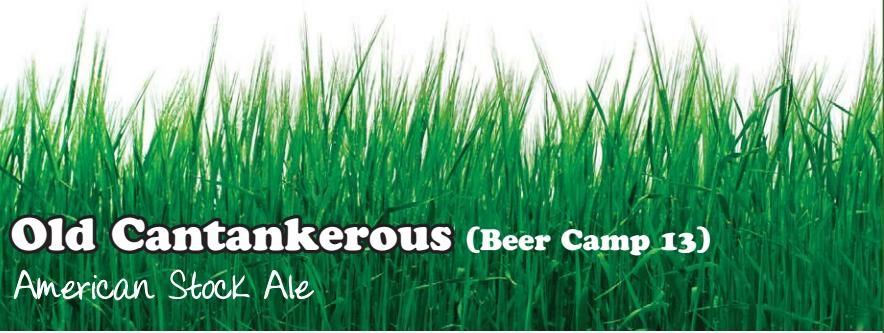
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Old Cantankerous (Beer Camp 13)

American Stock Ale

Ingredients

for 5 U.S. gallons (19 liters)

6.0 lb	(2.7 kg) Pilsner malt
5.0 lb	(2.3 kg) Maris Otter
1.25 lb	(567 g) Caramunich
1.5 lb	(680 g) Munich
1.0 lb	(454 g) Vienna
2.25 oz	(64 g) Special B
2.25 oz	(64 g) Chocolate malt
0.6 oz	(17 g) German Magnum 13% @ 60
1.0 oz	(28 g) Perle 6.6% @ 20
1.0 oz	(28 g) Sterling 5.5% @ 10
0.5 oz	(14 g) Pacific Hallertauer 6.4% (see Directions)
1.25 oz	(35 g) Southern Cross 11% (see Directions)
	Wyeast 1056 American Ale Yeast or White Labs WLP001
	California Ale Yeast

Original Gravity: 1.075

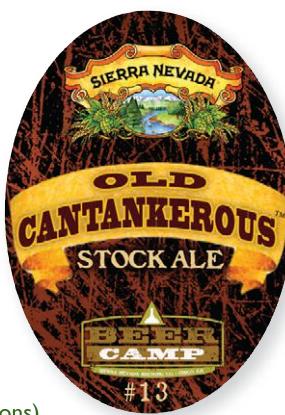
Final Gravity: 1.020

Directions

If you can't get the New Zealand hops, substitute any noble hop. Sierra Nevada uses whole cone hops. Use half the finish hops at knockout, and half in a hopback. Or add all at knockout.

Use water treated to pH 5.5 at 154°F (68°C). Using RO water, add 1 tsp CaSO₄ and 0.25 tsp CaCl₂. Mash in at 140°F (60°C), slowly raise to 154°F (68°C). Mash out at 170°F (76°C). Sparge, collect 7 gallons. Boil 90 minutes. Chill and pitch at 62°F (17°C), ferment at 68°F (20°C).

Extract version: Substitute 3.6 lbs (1.6 kg) Pilsner DME or 4.5 lbs (2 kg) Pilsner LME for the Pilsner malt, 3 lbs (1.4 kg) pale DME or 3.75 lbs (1.7 kg) pale LME (British) for the Maris Otter, and 0.9 lbs (409 g) Munich DME or 1.1 lbs (500 g) Munich LME for the Munich and Vienna malts. Steep the Caramunich, Special B, and chocolate malt in 158°F (70°C) water for 30 minutes, then add extracts, bring to a boil, and follow the all-grain recipe.



great beer. They grow their yeast very fast, by stepping it up, oxygenating it, stirring it and keeping it warm. Lots of fresh, healthy yeast make for a fast turnaround time in brewing.

Sierra Nevada has an active research and development program. They aren't afraid to experiment and make changes, but they

like to have solid data behind their choices. They are constantly evaluating new ingredients and testing new processes. The best ideas make it into their products.

Our conclusion is that Sierra Nevada can point to specific reasons for every choice they make during brewing; they aren't making changes for experimental

purposes, they have data to back it up. Their proven insight is certainly valuable for homebrewers. However, we just saw a snapshot in time. Sierra Nevada is constantly looking at new ways of doing things—as homebrewers, this means that we shouldn't be afraid to experiment but that we should monitor the results and pick the methods and ingredients that produce better beer.

Avoiding Oxidation

Sierra Nevada seems to take great pains to avoid introducing oxygen at every step in their processes. More than simply avoiding oxidation, they seem most concerned with negative effects of free radicals on flavor stability. Some specific examples:

- Grain is milled under a nitrogen blanket. The N₂ then carries over to the mash tun and provides protection during mashing.
- They are concerned about hot side aeration (well, aeration anywhere). True, oxygen boils out of wort, but free radicals are created when oxygen is still in the wort—these are what they care about. Hot spots in the boil kettle are bad for stability, as they tend to create free radicals. Obviously, don't splash hot wort either.
- They aerate their wort with sterilized air, not pure O₂. It's easier to produce in-house and is much cheaper. You don't need pure oxygen to prepare yeast for growth. If you want to do this at home, use an aquarium pump with an inline 0.22 micron filter.
- Their torpedo dry hopping system is purged with CO₂ to avoid oxidizing the finished beer.
- They recently changed bottle caps from twist-off to oxygen barrier, reducing oxygen inflow by a factor of 20. Packaging certainly matters.

Water Treatment

It was very interesting that Sierra Nevada treats all their brewing water (liquor) with phosphoric acid to a pH of 5.5. Not just their sparge water, but their strike water and any other liquor used in the brewery—hot or cold. Pre-treating brewing liquor to adjust the pH did not have a negative effect on the mash. All our batches had a mash pH between 5.1 and



Golden Ticket (Beer Camp 14)

Baltic Porter

Ingredients

for 5 U.S. gallons (19 liters)

7.0 lb	(3.2 kg) Vienna
6.5 lb	(2.9 kg) Munich
0.87 lb	(395 g) Chocolate
0.5 lb	(227 g) Carafa III Special
0.5 lb	(227 g) Pilsner
0.5 lb	(227 g) Caramunich
0.75 oz	(21 g) German Magnum 13% @ 90
0.75 oz	(21 g) Northern Brewer 8.5% @ 10
0.75 oz	(21 g) Willamette 5% @ 10
1.0 oz	(28 g) Saaz 4% @ 0
0.5 lb	(227 g) molasses @ 0
	1 whole star anise @ 0
	Wyeast 2206 Bavarian Lager yeast

Original Gravity: 1.079

Final Gravity: 1.023

Directions

Using RO water, treated to pH 5.5 at 154 °F (68 °C). Add 1 tsp CaCl₂ and 0.25 tsp CaSO₄ to mash. Mash in at 140° F (60° C), slowly raise to 154° F (68° C). Mash out at 170° F (76° C). Sparge and collect 7 gallons. 90 minute boil. Add molasses and star anise at knockout, let rest for 10 minutes before running off. Ferment at 50° F (10° C).

Extract version: Substitute 5.5 lbs (2.5 kg) Munich DME or 7 lbs (3.2 kg) Munich LME and 2.25 lbs (1 kg) Pilsner DME or 2.75 (1.25 kg) lbs Pilsner DME for the Vienna, Munich and Pilsner malts. Steep the Carafa III, Caramunich and chocolate malts in 158° F (70° C) water for 30 minutes, then add extracts, bring to a boil, and follow the all-grain recipe.



5.3, which is what Sierra Nevada targets.

They measure pH at usage temperature, which is important since (like specific gravity) pH changes with temperature. The pH of a sample at room temperature is as much as 0.3 to 0.4 pH higher than the same sample at mash temperature. Home instruments might not work in higher mash temperature ranges, so knowing the adjustment is handy. [Thanks to A.J. DeLange for help explaining the water chemistry.]

Sierra Nevada uses gypsum (calcium sulfate, CaSO₄) and calcium chloride (CaCl₂) to achieve the necessary mineral profile for their beers. Hop-focused beers get more calcium sulfate. Salts are added in both the mash and the kettle. Calcium in the mash helps with the conversion, but the kettle salts are to achieve a specific flavor profile, to compensate for the dilution of sparging, and to make sure sufficient calcium is available for the yeast—most of it is lost during lautering. Homebrewers should be aware that you don't have to put all the salts in the mash.

Handling Grain

Wet-milling was one of the more innovative processes we saw. Just before the grain is milled, it is sprayed with brewing liquor at 140° F—this is the steep water for dough-in. The water makes the grain husks more pliable, so they don't get shredded as much. They can set their two-roller mill fairly tight to get a great crush, yet the husks stay mostly intact. This results in better runoffs and higher beer quality.

The total water for the mash (at mash conversion temperature) is sprayed in while grain is being milled, so the mill is actually starting the mash. This whole process takes place under nitrogen. Scott Jennings, pilot system brewmaster, recommended that homebrewers could simulate this using an air brush attachment on an air compressor to spray the grains lightly in a shallow pan, turning once, and repeating, then immediately milling.

Probably one of the most practical tips we learned was the right way to open a sack of grain. You don't just gut it like a fish;



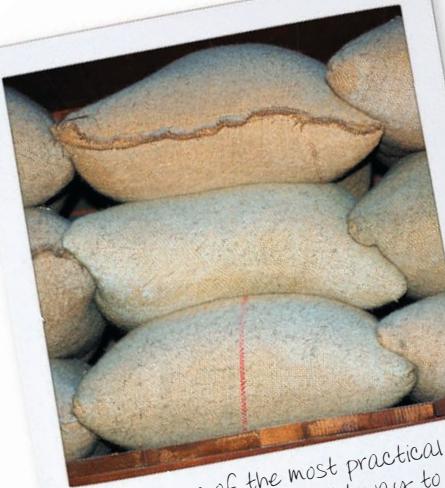
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Probably one of the most practical tips we learned was the right way to open a sack of grain.

that can cause the fibers of the bag to mix in with the grains. The bags are sewn shut, so you can open it up like you'd rip out a seam (I think of pockets in new suits). Find the long dangling knotted thread on one side of the bag. Cut the strings apart, then pull gently and evenly on one of the strings. The bag should basically "unzip" if you did it right. The sack then opens cleanly, sort of like unfolding a lunch bag. Maltsters stitch their bags differently, but the Weyermann sacks were very easy to open.

Changing maltsters and types of base malts can affect the conversion and the runoff. Our recipe used a fairly high mash temperature because of Sierra Nevada's experience with their base malts; we were trying to get a specific attenuation. However, since we didn't use their normal base malt, we actually got a higher final gravity than planned (as well as a slower runoff). If you switch maltsters or base malts, be aware that your attenuation and final gravities may change.

To improve lautering, rice hulls are a worthwhile addition. There really isn't any downside, and they can improve water flow through the grain bed. To get a better lauter, cut the lauter bed with a long, thin spatula. Cut it slowly and deeply, with the spatula pointing straight down. Keep it at least an inch above the false bottom. Cut lots of thin rows. This exposes more grain to the sparge

water, and simulates what their rakes do. Homebrewer Mark Cherney went home and tried this method and reported a 10-percent increase in efficiency.

Using Hops

Sierra Nevada uses whole cone hops exclusively. We saw two different hop cold rooms, and boy, did they smell fantastic. For those who grow their own hops, here's a tip that Tom Ocque got while talking to their hop grower: use 3-1-1 fertilizer to provide the best conditions for growing hops.

Sierra Nevada has a very interesting dry hop device called the hop torpedo. It's like a recirculating hopback. I think it could be done at the homebrew level using something like a hopback or water filter housing to hold the hops (like a Randall), but it would have to be done as a closed system under CO₂. The flow rate should be low, it should be done at lager temperatures, and it should be run for up to a week. We tried their Torpedo IPA while brewery-fresh, and it tasted fantastic (probably my second-favorite beer on the trip).

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They use a hop press to get more wort out of their whole hops. This might be another fun project to make at home, although it would have to avoid introducing oxygen.

Sierra Nevada offered us the opportunity to have our homebrew evaluated by their quality control lab. Jeff and Susan Rankert provided the following data showing how the IBU content of their beer measured against what was predicted by different

formulas in Promash:

Beer	Measured	Rager	Garetz	Tinseth
Best Bitter	21.1	26.2	16.5	22.3
Barleywine	65.6	98.7	61.5	64.9
Double IPA	61.9	122.5	85.5	88.1

The conclusion is that the Tinseth formula appears to be most accurate for estimating IBUs. BeerTools and BeerSmith both use this formula as a default, but the Promash setting is Rager. Data from other campers backs up this conclusion.

Recipe Formulation

We tasted 22 Bines, a beer from another camp. It was a very good pale IPA. They used a simple grain bill: 90 percent of the grist was split between pale and pilsner, with 10 percent Munich. Then they blasted it with hops. That grist might be worth trying as the starting point for a home recipe; it was very tasty, and provided a good background for the hops.

In one of the stranger moments of the trip, we got to try an experiment: a single-hopped version of Sierra Nevada Pale Ale made with cluster hops. I can't say that I liked it very much, but you've got to admire their audacity.

I've scaled down the 10-barrel recipes to homebrew batch size, and created extract versions. I based the recipes on what we actually brewed, and the measured lab results of the beer.

Our camp's recipe was for an American Stock Ale, sort of an Americanized Old Ale—something fairly big and malty but with a firm bitterness. Part of the grain bill is like a scaled-up altbier. We picked finishing hops from New Zealand, which none of us had used before, after smelling them in the hop room. We expected this beer to be out in the late fall, so we wanted it to be appropriate for the time of year. We called it Old Cantankerous as an homage to Ken Grossman after we saw pictures of him hammering away on the early tanks at the brewery. Our alternate name was Continental Drift, since it mixed styles and ingredients from several continents.

The beer from the other camp was a Baltic Porter. They decided on a recipe early enough so they could special order malts and yeast. They are also the reason we couldn't use more Vienna malt in our beer; it was reserved for them. Note the unusual additions of molasses and star anise, which complement the dark malt flavors. Their beer is called Golden Ticket as a tribute to the entire beer camp experience.

Gordon Strong is the technical editor of Zymurgy and a two-time Ninkasi Award winner at the National Homebrew Competition. He lives in Beavercreek, Ohio.

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Our lucky judges received some of the coveted bottles and gave it high marks. Judge Scott Bickham called it "an excellent example of a traditional gueuze."

Next up was La Folie, a sour brown ale from New Belgium Brewing Co.'s Lips of Faith series. La Folie is the brewery's original wood-conditioned beer, resting in French oak barrels between one and three years.

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 widely available commercial beers (or meads or ciders) using the BJCP scoresheet. We invite you to download your own scoresheets at www.bjcp.org, pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration.

Two sour beers were on the menu for our judges this issue.

First up was Duck-Duck-Gooze from The Lost Abbey in San Marcos, Calif., fresh off a gold medal at the 2009 Great American Beer Festival.

"Duck Duck Gooze is an homage to the great gueuze beers of Belgium," said Lost Abbey brewmaster Tomme Arthur. "Although it is not spontaneously fermented, it is a blend of one-, two- and three-year-old barrel-aged sour beers. There are two different beers in the blend and the mixture of the beers is mostly Phunk Duck, which was about 18 months old at packaging."

Brewed in limited quantities, Duck-Duck-Gooze has become a highly sought-after specialty release for The Lost Abbey. "Anticipation really built over the years," said Arthur. "We don't currently have any plans to release DDG in 2010 as we're waiting for the next round of Phunk Duck to come true. Most likely this beer will be released about every 18 months or so."

New Belgium calls its Lips of Faith series its "playground" beers that defy boundaries. Many of them are brewed for internal celebrations or milestones, and the series has stretched to include nine different varieties.

La Folie started in 1998 as a fun experiment with seven French oak barrels that had been used to make Cabernet Sauvignon and other varietals.

"We have never re-inoculated the barrels with bacteria or yeast; we just keep at least 10 percent of the soured foedre to keep the magic soup flowing," says New Belgium's Lauren Salazar.

Salazar said this latest version of La Folie is "the first beer from the Bonny Doon barrels. I noted actual wine notes—it is like a zinfandel, which has notes of chocolate. This will surely wane as we fill it again and again. The barrels were bright purple when we filled them."

OUR EXPERT PANEL includes David Houseman, a Grand Master III judge and competition director for the BJCP from Chester Springs, Pa.; Beth Zangari, a Grand Master level judge from Placerville, Calif. and founding member of Hangtown Association of Zymurgy Enthusiasts (H.A.Z.E.); Scott Bickham, a Grand Master II 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 V judge, principal author of the 2004 BJCP Style Guidelines and president of the BJCP board who lives in Beavercreek, Ohio.

THE SCORES



Duck-Duck-Gooze—The Lost Abbey, San Marcos, Calif.
BJCP Category: 17E Gueuze

THE JUDGES' SCORES FOR DUCK-DUCK-GOOZE



DAVE HOUSEMAN



BETH ZANGARI



SCOTT BICKHAM



GORDON STRONG

Aroma: Acetic acid notes up front with barnyard-like character from Brettanomyces following close behind. Bready underlying malt backbone aroma. Woody, oaky aroma as the beer warms. No diacetyl. No DMS. No hop aroma. Light alcohol notes. Light fruity fermentation esters. (10/12)

Appearance: Golden color. Rich, thick rocky head that dissipated fairly quickly. Considerable chill haze. (2/3)

Flavor: Considerable sourness with both lactic and acetic acids present. Pils malt and wheat backbone presents as a light, fruity breadiness. No diacetyl. No hop flavor. Low hop bitterness. No DMS. Little alcohol noticed. Fruity fermentation esters remind me of green apples and pineapple. Moderate barnyard character from the Brett. A bit of oaky tannins in aftertaste. Well attenuated with a dry finish. Balance is aggressively toward acidity similar to a straight lambic. (18/20)

Mouthfeel: Soft mouthfeel and mousy carbonation. No astringency. Sourness is mouth puckering. Alcohol is not particularly warming but may sneak up on the drinker. Medium body but carbonation gives a sense of lighter mouthfeel. (5/5)

Overall Impression: This gueuze is very much in the Belgian tradition and true to style. The acidity is somewhat on the high end, closer to a straight lambic, and not as balanced as I'd expect. The Brett character has yet to fully develop in the bottle. This will only improve with age that mellows the acidity and accentuates the horsey/barnyard Brett character. Still very drinkable. (9/10)

Total Score: (44/50)

Aroma: Intense honey with a spicy horsiness, like a hay field after the first rain at the end of a long, hot, dry summer just as the sun reemerges. A pronounced acidity accompanies a light rustic oakiness of freshly split wood. No hop aroma. (11/12)

Appearance: Bright yellow; clear, but not brilliant, with an opalescent cast. Fluffy, mousy white head persists to the end of the glass. (3/3)

Flavor: Spicy, dry tart sourness balanced with an up-front wildflower honey flavor and sweetness. Earthy barnyard flavor mid-palate gives way to a low hop bitterness. No hop flavor. Grainy, spicy wheat malt flavors continually trade places with rough fresh-split oak wood, earthiness, and wet clean hay, constantly changing, finally relinquishing to a champagne-like honey-flavored finish. The barnyard character becomes more pronounced as the beer warms a bit, as does the earthiness. (17/20)

Mouthfeel: Medium body with a fluffy carbonation texture. Sharp, puckering quality at the finish, with a slight alcohol warming that lingers. (3/5)

Overall Impression: This beer is wildness, from the rustic freshly split oak character, to the wildflower honey, to the invigorating newly watered hay field. An amazingly complex, perfectly balanced blend of flavors with a refreshing yet fluffy champagne finish. This is a sipper, one to enjoy with friends, either around the fire or on the patio with a serving of Bosc pears and Camembert cheese. (8/10)

Total Score: (42/50)

Aroma: Sourness comes through immediately but is backed by some malt sweetness. Acetic acid is the prevalent sourness, but there are enough lemony notes from lactic acid to prevent it from straying into vinegar territory. I get some earthiness and wood underneath, but not as much complexity as traditional examples from the Senne Valley. Mild hay and barnyard notes emerge as it warms. (10/12)

Appearance: A white enduring head poises above a slightly cloudy golden pedestal. The carbonation is sufficiently high for a gueuze. (3/3)

Flavor: The first sip gives a roller-coaster of flavors, starting with a light honeylike sweetness that transitions to a moderately intense acidity that lingers into the finish. The lactic sourness is in better balance with the acetic notes than in the aroma. The flavor is enhanced by woody and oaky notes that seem perhaps a bit isolated from the other flavors, but they should blend and mellow with age. (18/20)

Mouthfeel: Nice balance between tannins that coat the roof of the mouth and acidity on the sides and back of the tongue. The moderate body is enhanced by the appropriately high carbonation. (5/5)

Overall Impression: Excellent example of a traditional gueuze. Some additional aging in the bottle may help soften the acetic acid and bring it into balance with the other flavors, and the oak also needs a little more time to mellow and blend. This is a very well-crafted beer that can stand alongside the best examples from the Senne Valley. (9/10)

Total Score: (45/50)

Aroma: Immediate Brett—horse blanket, sour, acidic, lightly lactic, oaky/woody—very complex. Hints of parsnip, hay, apple and honey. Very inviting. Nothing off, enteric or otherwise. Hints of grapefruit and oak emerge—excellent. (12/12)

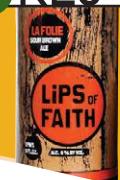
Appearance: Deep golden color. Moderate haze. Tall white head, settled rather quickly. (2/3)

Flavor: Acidic but with a softness in the finish. Strong Brett character, lactic, lightly acetic, but with moderate malt to soften the finish. Not as bone dry as many Belgian examples. Malt is neutral tasting but balances the sourness. Acidity is fairly strong but the finish has a fullness to it. Citrus, grapefruit, and oak flavors linger. Low bitterness. Everything is spot on, except for the slightly full finish. (19/20)

Mouthfeel: Medium body. Creamy, rich fullness, a little unusual. Some oaky tannin. High carbonation gives it a fluffy mouthfeel, as often found in hefeweizens. Alcohol is not apparent, dangerous in a 7-percent beer. (4/5)

Overall Impression: Great now; I wonder how it will age? Grapefruit, oak and funk are a classic combination—reminds me of Girardin Black Label. A little thick in body and finish but that actually improves drinkability. Otherwise, the sourness might be unbalanced. A world-class achievement; this belongs in the style guidelines. As good as I had in Belgium at the breweries. (9/10)

Total Score: (46/50)



THE JUDGES' SCORES FOR LA FOLIE



Aroma: Fruity aroma of cherries and plums with noticeable acidic (acetic) character. Rich maltiness with hints of chocolate. No DMS. No diacetyl. No apparent alcohol aroma. No off aromas. Very inviting. (10/12)

Appearance: Clear with bit of chill haze. Deep mahogany color. Adequate but dense head dissipates all too soon but appropriate to style. (3/3)

Flavor: Moderate to intense sourness with acetic and lactic components. Black cherry and chocolate are both present but acidity dominates. No hop flavor. Low hop bitterness. Dry finish. Very low malt backbone—wine-like more than beer-like. Additional sweetness would add to complexity and balance. Alcohol not particularly evident. (16/20)

Mouthfeel: Medium-low body. Above average carbonation leaves a prickly sensation and lighter mouthfeel. No astringency. A dry, puckering mouthfeel that is light and crisp. (4/5)

Overall Impression: A bit one-dimensional focus on acidity that would be aided by some residual sweetness that would make this a more complex beer. Sweetness would also help to showcase the fruity characteristics. Balance would be improved were the sweet and sour in harmony. Still the brewer has created a very good example of the Flanders Red Ale style. Combining this sour beer with a complementary sweet dessert that melds with the chocolate and cherries would be great. The remainder of my sample made a great float with vanilla ice cream. (7/10)

Total Score: (40/50)

Aroma: Currant fruity esters, intensely sour, acidic aroma leaning toward red wine vinegar, ripe to almost the point of over-ripe blood orange flesh and orange peel citrus. Rich Munich-like maltiness comes forward as the beer breathes; no hop aroma to speak of. (10/12)

Appearance: Deep reddish brown, with brilliant clarity. Tannish, finely bubbled, creamy head forms, but falls quickly. (3/3)

Flavor: Up front intense lactic sourness couples with citrus fruit, more similar to pomelo or yellow grapefruit than the orange in the aroma. Hints of currant follow. Vanilla and clove phenol emerge midway. A faint sweetness, barely detectable as a background characteristic comes in at the finish. Balance is definitely toward sourness, with very low hop bitterness and no hop flavor. Lingering moderately dry finish carries the lactic sourness and is accentuated by a Brett spiciness and low clove-spicy phenol that hangs at the back of the throat for a very long time post-finish. (14/20)

Mouthfeel: Medium bodied, with moderately low carbonation. Moderate tannic acidity with a clean, lingering dry finish. (3/5)

Overall Impression: Definitely wine-like with balance toward acidity rather than fruit, intense sourness at first overpowered the rich currant fruit, rich malt and engaging spiciness. More like a very young rustic spontaneously fermented red. A quite lovely beer now, it would be interesting to cellar one—or two, or more—and see how it develops in the bottle. (6/10)

Total Score: (36/50)

Aroma: Sour aroma with lemony lactic notes and a trace of acetic acid in the background. Black cherry notes combine with almond and toasted oak to provide a nice complexity. Citrus notes emerge later to add some red currant character. (11/12)

Appearance: Reddish brown notes with a beige head are dark for the Flanders Red style. Head retention is below average, even for this style, but clarity is excellent. (2/3)

Flavor: Complex blend of malt, esters and acids. The malt provides some sweetness and caramel notes that balance the acidity and give the sweet-n-sour character that exemplifies this style. The fruity esters are complex, with black cherry, currant and a touch of raisin. Lactic acid is the main source of sourness, but acetic acid adds some bite to the finish. Some pleasant woody, vanilla and toasted oak flavors linger after swallowing. (17/20)

Mouthfeel: The body is low to medium and would be improved with a little more carbonation. Slight astringency that coats the roof of the mouth but well within bounds for style. The assertive prickle from the acids is comparable to the classic Belgian examples. (4/5)

Overall Impression: Excellent example of the Flanders Red style. The color is more like an Oud Bruin, but there are not enough toffee and dark fruit notes for that style. The sweet-tart candy character is right on the money for the style, with contributions from both lactic and acetic acid giving a nice complexity. The ester character balances the fruitiness of black cherries with the sourness and citrus notes of currants. (9/10)

Total Score: (43/50)

Aroma: Malty-rich, light chocolate and black cherry, dried fruit, hints of dusty malt. Moderate sourness intertwines with malt and esters. Complex and interesting. Hints of orange emerge. Lightly acetic but that adds a complexity factor. No hops. (11/12)

Appearance: Reddish-copper hue—very attractive. Clear. Moderate beige head, persisted. (3/3)

Flavor: Balanced malty richness with an acidic finish. Strong sourness but the malt rises in the finish to soften the impact. Light milk chocolate and dark cherry flavor. Lactic sourness is sharp mid-palate but softens in the finish. Medium-low bitterness. Light oaky flavor. Seems aged and smooth. Flavors are very well-integrated. Not as vinous as some examples. (18/20)

Mouthfeel: High carbonation. Medium to medium-full body, a bit too full. Quite tart but creamy character of the malt balances it. No alcohol burn. The acidity dominates. Tannins noted but in background, perhaps adding to the body. (4/5)

Overall Impression: Walking the line between Flanders Brown and Red, closer to red based on the sourness but the malt hints toward the brown. Not as one-dimensionally dry/sour as past examples I've tried (when bottled in 750s). Malt is pumped up a bit but the other flavors are strongly like Rodenbach. Great balance, very drinkable. A little more approachable than in the past, which is a plus. I used to have to age it before enjoying it, but this is drinkable now. (8/10)

Total Score: (44/50)



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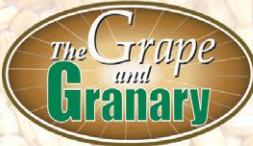
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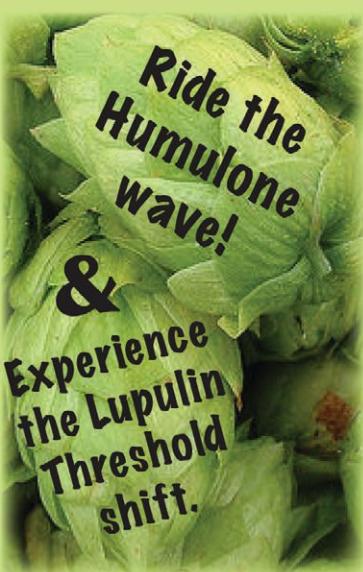
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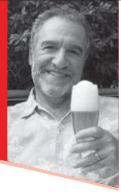


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by Charlie Papazian



Specialty Lager Malts

English, Canadian, U.S., Belgian, Czech and French pale malt—are they the same? German pilsener malt versus other lager malt—is there a difference? Whether you're an extract brewer or all grain brewer, it's easy to debate the difference and feel certain about your opinion, especially if you've had a few beers. Right? After all, homebrewing and beer appreciation is a passion and a hobby and we all love to debate the finer points of what makes great beer.

I've been brewing for 39 years now. I brew with malt extracts on occasion and they make great beers. Most of my brews are all grain because I love the process and learning about different ingredients and how they affect the qualities of the final brew. But even after all these years and all these beers, I'm still not scien-



A hand-guided machine turns the malt over as it dries.

Photos by Charlie Papazian

Bohemian Thriller

All Grain Recipe

Ingredients

for 5.5 U.S. gallons (21 liters)

8.5 lb	(3.9 kg) Weyermann Bohemian Floor Malt
8.0 oz	(225 g) Belgian aromatic malt
8.0 oz	(225 g) Gambrinus honey malt
4.0 oz	(113 g) Weyermann Sauer malt
0.66 oz	(18 g) Mt Hood hops 4.2% alpha (2.8 HBU/81 MBU) 60 min
0.75 oz	(21 g) German Hallertauer hops 4.3% alpha (3.2 HBU/90 MBU) 60 min
0.66 oz	(18 g) Crystal hop pellets (1 min)
0.5 oz	(14 g) Crystal hop pellets (dry hop)
0.25 tsp	(1 g) powdered Irish moss Cry Havoc White Labs yeast (second choice: Bavarian type lager yeast)
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.052 (13 B)

Target Extraction Efficiency: 77%

Approximate Final Gravity: 1.012 (3 B)

IBUs: about 25

Approximate color: 6 SRM (12 EBC)

Alcohol: 5.4% by volume

Directions

A step infusion mash is employed to mash the grains. Add 9.5 quarts (9 l) of 140° F (60° C) water to the crushed grain, stir, stabilize and hold the temperature at 132° F (53° C) for 30 minutes. Add 4.75 quarts (4.5 l) of boiling water and add heat to bring temperature up to 155° F (68° C). Hold for about 30 minutes. Raise temperature to 167° F (75° C), lauter and sparge with 3.5 gallons (13.5 l) of 170° F (77° C) water. Collect about 5.5 gallons (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 10 minutes remain add the Irish moss. When 1 minute remains add the 1-minute hops. 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 gallons (19 l) with additional cold water if necessary. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at temperatures of about 55° F (12.5° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. Lager the beer at temperatures between 35- 45° F (1.5-7° C) for 4 to 8 weeks.

Prime with sugar and bottle or keg when complete.

Bohemian Thriller

Mash/Extract Recipe

Ingredients

for 5.5 U.S. gallons (21 liters)

4.0 lb	(1.82 kg) very light malt extract syrup or 3.2 lb (1.46 kg) very light DRIED malt extract
4.0 lb	(1.82 kg) Weyermann Bohemian Floor Malt
8.0 oz	(225 g) Belgian aromatic malt
8.0 oz	(225 g) Gambrinus honey malt
4.0 oz	(113 g) Weyermann Sauer malt

1.1 oz	(30 g) Mt Hood hops 4.2% alpha (4.5 HBU/126 MBU) 60 min
0.75 oz	(21 g) German Hallertauer hops 4.3% alpha (3.2 HBU/90 MBU) 60 min
0.66 oz	(18 g) Crystal hop pellets (1 min)
0.5 oz	(14 g) Crystal hop pellets (dry hop)
0.25 tsp	(1 g) powdered Irish moss Cry Havoc White Labs yeast (second choice: Bavarian type lager yeast)

0.75 cup (175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.052 (13 B)

Target Extraction Efficiency: 77%

Approximate Final Gravity: 1.012 (3 B)

IBUs: about 25

Approximate color: 6 SRM (12 EBC)

Alcohol: 5.4% by volume

Directions

Heat 1.25 gallons (4.75 l) water to 172° F (77.5° C) and add crushed grains to the 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). Pass the liquid and grains into a strainer and rinse with 170° F (77° C) water. Discard the grains.

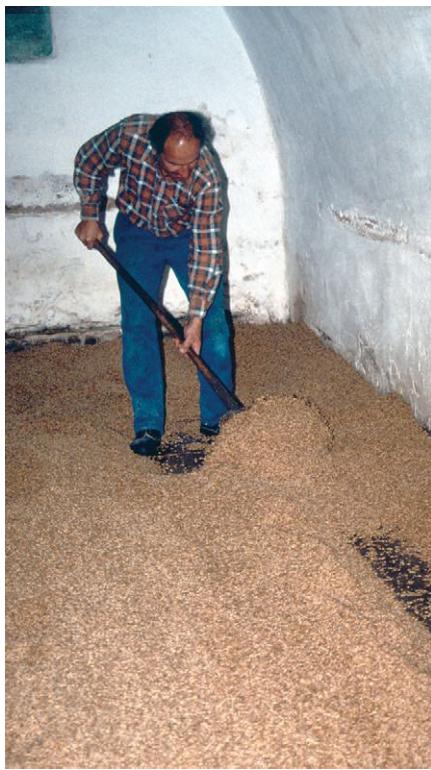
Add to the sweet extract you have just produced more water, bringing the volume up to about 2.5 gallons (9.5 l). Add malt extract and 60 minute hops and bring to a boil.

The total boil time will be 60 minutes. When 10 minutes remain add Irish moss. When 1 minute remains add the 1-minute hops. After total wort boil of 60 minutes turn off the heat. Immerse the covered pot of wort in a cold water bath and let sit for 15-30 minutes or the time it takes to have a couple of homebrews. Strain out and sparge hops and direct the hot wort into a sanitized fermenter to which 2.5 gallons (9.5 l) of cold water has been added. If necessary add cold water to achieve a 5.5 gallon (21 l) batch size. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident ferment at temperatures of about 55° F (12.5° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. Lager the beer at temperatures between 35-45° F (1.5-7° C) for 4 to 8 weeks. Prime with sugar and bottle or keg when complete.

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Floor malting is an old method of drying the sprouting barley on a large floor.

tically certain about the difference in the qualities that malts of various origins contribute to beer.

One thing I feel passionate about is that malt origin does indeed make a profound difference in the final beer. After much experimentation and many brew formulations, perhaps I'm fooling myself, but it does feel reassuring to say so. Maybe the colleges of beer science and study put various malts under the microscope and through extensive analysis come to the conclusion that carbohydrate profiles after mashing and processing shouldn't yield tremendous variation in character. That may be true on paper.

My taste buds and the beer song in my heart tell me differently. One of the most commonly discussed differences is between English grown two-row Maris Otter malt versus American pale malt. There is a difference in my beers. Perhaps this is obvious to the all grain brewer. But there's more out there to explore.

At a European conference this year I learned of a specialty lager malt produced in the Czech Republic and offered by the

German specialty malt house, Weyermann. What could possibly be so special about one lager malt from another? Traditionally large malt companies make the lightest of lager malts for the world's pilsener beers. As much as possible they seek to make beer clean, crisp and void of interfering complex flavor. Pilseners have evolved to this—the world's brewers demand it.

In my view there is no significant demand for specialty light lager malt because most

brewers are trying to brew to style or world market demand for light tasting beer. So when an opportunity arose to try a specialty lager malt that has the promise to lend complexity and "the way beer used to taste" flavor to my European-style lager beers, I jumped at it.

Weyermann offers small batch malt made by a Czech floor malting company. Called Bohemian Floor Malt, it is made in an original floor malting facility from

The poster features a vibrant illustration of a blue unicorn with a single horn, wearing a green Viking-style horned helmet, and holding a sword. The unicorn is standing on a green boat labeled "BABE". The background shows stylized blue waves and a white sky. The text is overlaid on the image in a variety of fonts and colors. At the top, it reads "32nd Annual American Homebrewers Association® National Homebrewers Conference". Below that, in large white letters, is "Chillin' in Minnesota". Underneath that, in a larger font, is "Land of 10,000 Homebrews". In the bottom right corner, there is a red banner with white text that reads "JUNE 17-19, 2010 MINNEAPOLIS, MN SHERATON BLOOMINGTON HOTEL WWW.AHAconference.org". The bottom left corner contains the text "American Homebrewers Association A Division of the Brewers Association www.BrewersAssociation.org" and the Brewers Association logo (BA).

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I loved this malt
and the beer brewed
from it even more.
Maybe I'm a bit
sentimental about
old world ways and
beer flavors lost.

Bohemian spring barley. Floor malting is best described as an old method of drying the sprouting barley on a large floor. The maltster uses a shovel or hand guided machine to turn the malt as it dries over a period of many days.

Does this process make a significant difference in the beer I make? There's a difference, but I'm not sure where it comes from! I loved this malt and the beer brewed from it even more. Maybe I'm a bit sentimental about old world ways and beer flavors lost. Whatever it is that makes me think this is certainly reflected in the immense enjoyment I am now experiencing. I consider my recently homebrewed Bohemian Thriller one of the most perfectly brewed golden Germanic-Czech lagers I have ever made. It has a round, full and complex malt character, with mouthfeel, chewiness and exotic aroma reminiscent of the German lagers I tasted at small breweries in the 1980s.

Here's my recipe for Bohemian Thriller. You'll note the token addition of aromatic and "honey" malt to this recipe. These are additions I typically make to most of my light colored lagers to accent old world character. With Bohemian Floor Malt, the honey and aromatic characters emerge with a vengeance, putting a huge smile on my face every time I pour myself a half liter and pause to contemplate the joy of having homebrewed such a great beer.

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

Charlie Papazian is founder of the American Homebrewers Association.

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By Amahl Turczyn Scheppach

2009 GABF Pro-Am Competition

September 26 was a banner day for New Mexico homebrewer Ben Miller. Not only did he find out that he was one of three winners in the Samuel Adams LongShot competition, he later emerged from the Great American Beer Festival with a gold medal around his neck.

The fourth annual Great American Beer Festival (GABF) Pro-Am competition, which pairs American Homebrewers Association members with professional craft brewers, who scale up the award-winning recipes that are then judged at the GABF, had 72 entries in the 2009 version, up nearly 25 percent from 2008. Breweries from 21 states took part in the competition.

Miller teamed with Jeff Erway of Chama River Brewing Co. in Albuquerque to win gold for Herbal Joe's Columbarillo IPA. (His winning LongShot entry was a barleywine).

The silver medal went to Alright Already Amber, brewed at the O'Fallon Brewery in O'Fallon, Mo. by homebrewer Jim Yeager and brewmaster Brian Owens; and the bronze went to Time of the Season Belgian Pale brewed at Upslope Brewing Company in Boulder, Colo. by homebrewer Brian Patterson and brewmaster Dany Pages.

A Little Bit Crazy

Miller is a brewing fanatic. He's only been brewing for two-and-a-half years, but in that time, he's made a lot of beer—he brews once or twice a week. "The most I've done at once is three batches in one day," he admitted. "Boy was that crazy!" His garage is a dedicated home brewery, and it is well-stocked to say the least. He brews on a home-made 10-gallon system using a Sanke keg as a mash tun (he batch

sparges and uses a Barley Crusher as his grain mill) and boils in a 15-gallon stainless steel kettle. A 10-gallon aluminum kettle serves as a hot liquor tank, and all three vessels are propane fired.

One of the secrets of his success is a quick chill after boiling, and to that end, he uses not one but two counterflow chillers

inline, and coolant water is pre-chilled with an immersion chiller in a bucket of ice. "I like to pitch yeast as quickly after chilling as possible so it was important to me to have a powerful chilling system," he said. With his triple chill method, he's able to chill down to lager temps if necessary. Fermentation is conducted with a similar level of dedication. Six 6.5-gallon carboys

Columbarillo IPA

Ben Miller, Pro-Am 2009, Gold Medal

Ingredients for 6 U.S. gallons (22.7 liters)

17.0 lb	(7.71 kg) American two-row pale malt
1.0 lb	(0.45 kg) 15° L crystal malt
1.25 oz	(35 g) Columbus hops, 90 minutes
0.5 oz	(14 g) Columbus hops, 30 minutes
0.5 oz	(14 g) Simcoe hops, 30 minutes
2.5 oz	(71 g) Amarillo hops, at flameout
1.5 oz	(42 g) Columbus hops, at flameout
1.0 oz	(28 g) Centennial hops, at flameout
2.0 oz	(57 g) Centennial hops, dry hop
2.0 oz	(57 g) Columbus hops, dry hop
1.0 oz	(28 g) Simcoe hops, dry hop
1.0 oz	(28 g) Amarillo hops, dry hop

Wyeast No. 1272 American Ale II yeast, in a yeast starter

Original Gravity: 1.065

Final Gravity: 1.012

ABV: 6.9%

IBU: 115

Directions

Use bottled spring water and add about 3/4 tsp of gypsum to the mash. Mash temp is 148° F (64° C). Use 1 Whirlfloc tablet at the end of the boil as well as 0.5 tsp Wyeast yeast nutrient. Ferment at 64° F (18° C) to start, raise slowly to 72° F (22° C) by the end of fermentation. Use Fermcap to reduce fermentation blow-off (optional). Dry hop when fermentation is about 90% finished. Dry hop for 7 days at 70° F (21° C). Rack to keg or bottle. "I don't recommend chilling the beer before bottling or kegging because this will bring out grassy notes from the dry hops. In the commercial brewing of this we used Biofine Clear as a fining agent post-fermentation. I tend not to use that in the homebrew though."



Extract version: Substitute 8 lbs light DME or 10 lbs light LME for the pale malt; use American malt extract. Steep the crystal malt in 158° F (70° C) for 30 minutes, then add the malt extract, bring to a boil, and continue with the recipe as stated.

Alright Already Amber

Jim Yeager,
Pro-Am 2009, Silver Medal



Ingredients for 5.5 U.S. gallons (20.8 liters)

8.0 lb	(3.63 kg) British pale two-row malt
0.5 lb	(227 g) Belgian aromatic malt
0.5 lb	(227 g) dextrin malt
0.5 lb	(227 g) flaked barley
0.13 lb	(59 g) roasted barley
0.25 lb	(113 g) Special B malt
0.5 lb	(227 g) 60° L crystal malt
1.0 oz	(28 g) Centennial pellet hops, 10.50% a.a. (60 minutes)
1.0 oz	(28 g) Amarillo Gold pellet hops, 9% a.a. (30 minutes)
1.0 oz	(28 g) Cascade pellet hops, 5.75% a.a. (2 minutes)
1.0 oz	(28 g) Amarillo Gold whole hops, 8.6% a.a. (dry hop)
	White Labs WLP001 California Ale or S-05

Original Gravity: 1.060

SRM: 14.7

IBU: 64.1

Brewhouse Efficiency: 86%

Boil Time: 75 minutes

Directions

Mash grains at 152° F (67° C) for 1 hour.

Extract version: Substitute 6.5 lbs light DME or 8 lbs light LME for the pale and aromatic malts; use British or Belgian malt extract. Increase the dextrin malt (or Carapils) to 1 lb and omit the flaked barley. Steep the dextrin malt, roasted barley, Special B, and crystal malt in 158° F (70° C) for 30 minutes, then add the malt extract, bring to a boil, and continue with the recipe as stated.

are individually temperature controlled using FermWrap heaters. They are then placed in three fridges rigged with digital temperature controllers. "I'm able to have very precise control over my fermentation temps this way, which I feel is extremely important."

A big fan of hoppy beers, Miller dry hops many of his recipes, adding the hops directly to the primary. He feels it's critical to keep the beer as clean as possible post-fermentation with minimal contact. "I rarely use secondary fermenters," he explained. "When fermentation is over, I use a carboy cap with a stainless steel racking cane to push the beer into a keg with CO₂. This is a completely closed system and I purge all the oxygen out of my kegs first. This keeps oxygen exposure and the chance of contamination to an absolute minimum." [Editor's Note: Glass carboys aren't designed to hold pressure, so be very careful with this technique. Keep pressure very low—like 2 psi—and transfer slowly.]

Besides a lightning-quick chill and maintaining careful fermentation temperatures, Miller suggests a few other tips for making great beer: keep the recipe simple, don't use chlorinated water, boil at least 90 minutes, don't let oxygen touch the beer after fermentation, dry hop warm (70° F) and store cold (40° F). Miller has two thermostat-controlled chest freezers in his garage for serving his beers at this very temperature, and he has space for up to 22 corny kegs at a time. No doubt Ben's Tap House is popular with his (very lucky) friends. "I also have about 15 sacks of grain stacked against one of the walls," he confessed. "Yes, I'm a little bit crazy."

Miller's Columbarillo IPA recipe reflects both his dedication to perfection and his passion for hoppy beers. "My recipe has definitely evolved over time," he explained. "I have been trying to perfect the American IPA for about a year-and-a-half now and have brewed many examples of this style. I became somewhat obsessed with hop blending and making the per-

Time of the Season Belgian Pale Ale

Brian Patterson, Pro-Am 2009, Bronze Medal

Ingredients for 5 U.S. gallons (19 liters)

6.0 lb	(2.72 kg) Maris Otter pale two-row malt
2.0 lb	(0.9 kg) Belgian Pils malt
1.0 lb	(0.45 kg) white wheat malt
1.0 lb	(0.45 kg) turbinado sugar (in kettle at 90 minutes)
1.5 oz	(42 g) Fuggle hops (60 minutes)
1.5 oz	(42 g) East Kent Goldings
1.0 oz	(28 g) fresh ground coriander at flameout
	White Labs WLP500 Trappist ale yeast, preferably in a 1 liter starter

Directions

Mash at 150° F (66° C) for 1 hour. Sparge. Boil 90 minutes. Chill and transfer. "I use olive oil to aerate in my conical and it works great, but it is not necessary."



Extract version: Substitute 3.5 lbs light DME or 4.5 lbs light LME for the Maris Otter (use British extract). Substitute 1.25 lb pilsner or light DME or 1.5 lbs pilsner or light LME (use Belgian or German extract). Substitute 0.5 lbs wheat DME or 0.75 lbs wheat LME for the wheat malt. If you have trouble finding the alternate malts, use 5.3 lbs light DME or 6.6 lbs light LME for all the malts. Continue with the recipe as stated.

fect IPA for my tastes. I came up with the initial version of the winning recipe when I felt like I was using too many hop varieties and I wanted to simplify things again. So I made a beer with just Columbus and Amarillo hops. It turned out great."

Columbarillo IPA also won a gold medal in the 2009 Enchanted Brewing Challenge in Albuquerque, a gold in the 2009 Albuquerque State Fair, and silver in the first round of the National Homebrew Competition. As a repeat entrant in the Pro-Am competition, Miller worked with Chama River's Erway for the second year in a row, but this year both brewers took the highest honor. "Both times the experience of working with Jeff was extremely rewarding," he said. "Jeff is a very good teacher and was more than happy to show me everything he could about Chama River's 5-barrel brew system. He allowed me to have total creative control over the beer while also giving advice whenever I asked. It helped that Jeff is also a huge IPA fan."

The commercial version of Columbarillo IPA was similar to the homebrewed version, but not exactly the same. According to Miller, this was intentional. "I wanted the commercial version to be a drier beer

and have a more complex hop character. I feel that is exactly how it turned out!"

Having a Blast

Silver medalist Jim Yeager has been brewing for about seven years, about once per month on average. With a wife and five kids, it's not as easy to find the time as it used to be. "I used to brew every week, but it's been a few years since I've been able to do that," he said. "Between football and baseball season, it can be tough to get a brew day in!"

He uses Gott coolers in his home brewery for mash tuns, and converted kegs for the hot liquor tank and kettles, all of which are gravity fed. "This year I purchased my first major brewery upgrade since I went all grain, a couple of 14.5-gallon conical fermenters." In general, Jim is circumspect about the necessity for new equipment. "Occasionally I look at either building or buying a more automated setup, but in the end, I can never justify the expense as I don't believe it'll help me make better beer or cut down my

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Year. At this point, I really got the bug...I started brewing almost every style and learned a ton about recipe formulation, BJCP styles and the brewing process in general. This particular recipe is one of a handful I have that I pretty much pegged on the first try and never really adjusted. It won a number of competitions in 2003-2004 and I like it enough that I have continued to make and drink this one for myself."

The owners of the O'Fallon Brewery, Tony and Fran Caradonna, invited Yeager out to beer dinners and other events where his amber ale was being served. This was especially gratifying for him. "Serving your beer on a commercial level and seeing people enjoy it is really the pinnacle of homebrewing for me," he said.

The actual brewing of the beer at O'Fallon also made a big impression on him. Head brewer Brian Owens and assistant brewer Dave Johnson were already familiar with Yeager's brewing talents, since the O'Fallon Brewery is the home of Jim's local homebrew club, the Garage Brewers' Society. "I know these guys pretty well, but still, it was an amazing experience. We met a number of times to talk about the scaling before brew day and then I came up and helped brew the beer (and make some last minute decisions)." The brewers also made sure Yeager really felt at home in the O'Fallon brew house. "I still need to thank Dave for making me clean out the mash tun."

Yeager did notice a few minor differences in the commercially brewed version of Alright Already Amber, but it was still an outstanding beer. "It wasn't exact, but the key things about the beer like balance, aroma and complexity all held up. The commercial beer was a little lighter in color and a little less malty and the Amarillo hops weren't as citrusy as the ones I had used, but the balance was really nice."

Brewing with Passion

Bronze medalist Patterson has been brewing for a little over five years on his 5-gallon system, but finds the time to brew nearly every weekend. His gravity-fed system consists of two coolers outfitted with

KUDOS—BEST OF SHOW

AHA/BJCP Sanctioned Competition Program

June 2009

OC Fair Homemade Beer Competition, 316 entries—Derek Bougie, Costa Mesa, CA.

July 2009

Arizona Mead Cup, 36 entries—Jodi Carney, Tempe, AZ.

August 2009

Evergreen State Fair 2009, 220 entries—Dennis Nagy, Monroe, WA.

Beer and Sweat, 245 entries—Ron Mahan, Alexandria, KY.

Michigan State Fair Home Brewing Competition, 670 entries—Phil Sullivan, Royal Oak, MI.

Alaska State Fair, 60 entries—Tim Johnson, Seward, AK.

2 Encuentro Internacional de Cerveza Artesanal Somos Cerveceros, 73 entries—Emilio Ghirardi, Argentina.

Beer Quest Experimental Ale, 19 entries—Hawaiian Porter, Brian Hoesing, Lincoln, NE.

Minnesota State Fair Homebrewed Beer, Mead & Cider Competition - 2009, 487 entries—Curt and Kathy Stock, Saint Paul, MN.

The Limbo Challenge, 141 entries—Orlando Guerra & Damon Lewis, Plano, TX.

2009 ACO Brewfest, 34 entries—Mike Pierce, Longmont, CO.

Morebeer! Forum Competition - 5th Annual, 227 entries—Daniel Rosbrugh, San Jose, CA.

16th Annual Dominion Cup, 366 entries—Daniel Patterson, Harrisonburg, VA.

Alamo City Cerveza Fest, 378 entries—Jeff Oberlin, Friendswood, TX.

2009 Michigan Renaissance Festival Competition (Beer Baron Brewing Brawl), 280 entries—Michael Spears, Warren, MI.

Western Washington Fair Amateur Beer Competition, 58 entries—Dan O'Leary, Puyallup, WA.

September 2009

Berea Oktoberfest Microbrew Competition, 21 entries—Matt Cole, Fat Head's Brewery, North Olmsted, OH.

Coconino County Fair, 45 entries—Jeff Dicus, Flagstaff, AZ.

Eastern Idaho State Fair, 87 entries—Tim Murphy, Blackfoot, ID.

Byggvir's Big Beer Cup, 145 entries—Michael Agnew, Minneapolis, MN.

B-ROCK 99.3FM Bathurst Homebrew Competition, 339 entries—Duana Wright, Sydney, Australia.

Santa Cruz County Fair Homebrew Competition, 95 entries—Calen Lopata, Aptos, CA.

Dayton DRAFT Beerfest Competition, 131 entries—Douglas Griffin, Virginia Beach, VA.

River City Roundup Fair & Festival, 121 entries—Larkin Whisler, Omaha, NE.

3rd Annual KROC World Brewers Forum Homebrew Competition - Great American Beer Challenge, 55 entries—Kari Klein.

Topsfield Fair Homebrew Competition, 146 entries—Keith Antul, Worcester, MA.

Blue Ridge Brew Off, 495 entries—Edward Westbrook, Mt. Pleasant, SC.

The Great Frederick Fair, 121 entries—John Benner.

West Australian State Amateur Brewers Competition, 174 entries—Ron Sullivan, Perth, Western Australia.

2nd Annual Muse Cup, 49 entries—Wesley Underwood, Westminster, CO.

Tulare County Fair Homebrew Competition, 28 entries—Sean Railing, Clovis, CA.

Southeast Alaska Autumn Pour Homebrew Competition, 34 entries—Kathy Green, Juneau, AK.

FOAM Cup, 309 entries—Phil Moore, Columbia, SC.

Pacific Brewer's Cup, 250 entries—Ian Fraser, Venice, CA.

The Schooner Homebrew Championship, 517 entries—Brett Wilkes, Algonquin, IL.

Queensland Amateur Brewing Championship (QABC), 214 entries—Andrew Clark, Queensland, Australia.

State Amateur Brewers Show of South Australia, 210 entries—Adam Beauchamp, Adelaide Hills, South Australia.

Brain of Brewers, 69 entries—Bluegrass Brewing Company, Jerry Gnagy, Louisville, KY.

Celestial Meads Equinox Mead Competition, 27 entries—John Trapp, Anchorage, AK.

Jackson County Harvest Fair Amateur Beer Competition, 80 entries—Marcus Bezuhly, White City, OR.

Yakima Fresh Hop Homebrewers Competition, 18 entries—Derry Jefferis, Yakima, WA.

Maryland Microbrew Festival 2009 Homebrew Competition, 25 entries—Steve Kranz, Westminster, MD.

Crown Challenge, 124 entries—Dave Helt, Milwaukee, WI.

October 2009

Homebrewtalk.com Competition, 300 entries—Anthony DeStefano, Laurel, MD.

Maryland Governor's Cup, 103 entries—Clipper City, Baltimore, MD.

14th Annual Music City Brew-Off, 401 entries—Guy Beck, Lawrenceville, GA.

Suncoast Animal League OctoBrewFest Homebrew Competition, 31 entries—Michael Cohen, Tampa, FL.

OktobersBest, 154 entries—Brett Loenberger, Worthington, OH.

AHA Club-Only Competition, European Amber Lagers, 44 entries—Roger Hall & JL Thompson, Cordova, TN.

Valhalla – The Meading of Life V, 79 entries—James Powell, Parkesburg, PA.

Seattle Weekly Home Brew Competition, 68 entries—Sephren Barrow & Brian McDonald, Seattle, WA.

Schleswig Wine & Bier Contest, 79 entries—Randy Tallman, Mineola, IA.

2009 National Organic Craft Brew Challenge, 30 entries—Bison Brewing Co, Berkeley, CA.

BBG Skirmish in the Triad, 202 entries—David Keller, Batcave, NC.

Final Gravity 2nd Annual Strong Beer Competition, 63 entries—Kevin Habursky, Erie, PA.

Fall N' Down Fermentation Festival, 17 entries—Byron Burrier/Steve Olson/Steve Mattheeuw, Neenah, WI.

Southern New England Regional Homebrew Competition, 230 entries—Tom Miklinevich & Dave Corbett, West Redding & Branford, CT.

Spooky Brew Review 2009, 304 entries—Calvin Rowland, Bolingbrook, IL.

November 2009

Novembeerfest, 210 entries—Peter Twigg, Federal Way, WA.

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AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR

Want to discuss judging, beer styles, competitions and exams? Join the BJCP Members Forum at www.bjcp.org/phpBB2/index.php. To register a new competition, please go to www.bjcp.org/apps/comp_reg/comp_reg.html. Check the AHA or BJCP Web sites to see the latest calendar of events. Competition organizers: please remember to submit your results promptly using our electronic system. Competitions not filing organizer reports will not be allowed to register in the future. Interested in becoming a beer judge? See www.beertown.org/homebrewing/scp/judge.html for information.

brew day time." Some of the secrets of his success as

a **January 8** brewer will sound familiar: sanitation, **Big Beers, Belgians & Barleywines Homebrew Competition** temperature control, and consistent brewing process.

January 10 Entry Fee: \$5. Entry Deadline: 12/30/2009. Contact: Laura Lodge,

970-977-0100 BigBeersFestival@hotmail.com www.bigbeersfestival.com

Yeager's Froth Ale recipe was one he nailed early on in his homebrewing career. He began to enter homebrew competitions

January 16 **Wizard of SAAZ III** soon after he began brewing, in Akron, OH. Entry Fee: \$6. Entry Deadline:

01/09/2010. Contact: Michael Krajewski,

216-316-1392 awards@hbd.org www.hbd.org/saaz/wos.html

January 16 and a more comprehensive knowledge of how to brew different styles.

Doug King Memorial 10 After winning a couple ribbons in Woodland Hills, CA. Entry Fee: \$5. Entry Deadline: 01/08/2010. Contact: Martin Carman,

916-713-0667 mcow@chimerabrewery.com

www.maltosefalcons.com

January 16 **Elevator's Procrastinators Homebrew Competition II**

Columbus, OH. Entry Fee: \$5. Entry Deadline: 01/14/2010. Contact: Mark Beery, 614-228-1192, beerm123@yahoo.com www.elevatorbrewing.com

January 16 **SOB's Amsterdam Brewery Nut Brown Ale Lookalike Competition**

Toronto, ON, Canada. Entry Fee: \$5 members/\$9 non-members. Entry Deadline: 01/15/2010. Contact: Roger Beal, 416-454-5409, rogerbeal@vif.com

January 29 **Upper Mississippi Mash-Out**

St.Paul, MN. Entry Fee: \$7. Contact: Kris England, 800-555-1212, education_director@bjcp.org www.mashout.org

January 30 **Meadlennium**

Sorrento, FL. Entry Fee: \$6. Entry Deadline: 01/11/2010. Contact: Jim Gilson, 407-810-2700, mead@cfhb.org www.cfhb.org

January 31

Homebrew Alley 4

New York, NY. Entry Fee: \$7. Entry Deadline: 01/22/2010. Contact: Vladimir Kowalyk, 917-270-3938, vladthebeerman@gmail.com www.homebrewalley.org

February 12

Great Northern Brew-Ha-Ha

Duluth, MN. Entry Fee: \$5. Entry Deadline: 02/01/2010. Contact: Steve Daiken, 713-201-2386, hopduvel@gmail.com www.northernalestars.org

February 13

5th Annual Peterson AFB Homebrew Competition

Colorado Springs, CO. Entry Deadline: 02/09/2010. Contact: Michael Bordick, 719-554-3701, axebrew1@msn.com www.brewbroesco.spaces.live.com

February 19

Kansas City Bier Meisters 27th Annual Homebrew Competition

Basehor, KS. Entry Deadline: 02/06/2010. Contact: Christopher Stenger, 816-536-2321, csbosox@gmail.com www.kcbiermeisters.org

February 19

America's Finest City Homebrew Competition 2010

San Diego, CA. Entry Deadline: 02/12/2010 Contact: Cole Davison, 619-838-4007, cdavison@componentcontrol.com www.quaff.org

February 20

22nd Annual Bluff City Brewers & Connoisseurs Homebrew Extravaganza

Memphis, TN. Entry Deadline: 02/06/2010. Contact: Douglas Mengwasser, 901-414-2215, djmengwasser@gmail.com www.memphisbrews.com

February 20

AHA Club-Only Competition, The Session Challenge-English Brown Ales

Kent, WA. Entry Fee: One entry per club, \$7 (make check payable to AHA) Entry Deadline: 02/16/2010. Contact: Tim Hayner, 206-730-4532, tim@tristatecon.com www.homebrewersassociation.org/pages/competitions/club-only-competitions

February 20

War of the Worts

Montgomeryville, PA. Entry Fee: \$6 first entry/\$5 additional entries. Entry Deadline: 02/07/2010. Contact: Andy Hejl, 215-646-1764, waroftheworts@keystonehomebrew.com www.keystonehops.org/wotw

February 27

BABBLE Brew-Off 2010

Mundelein, IL. Entry Fee: \$7 first entry, \$5 each additional entry. Entry Deadline: 02/20/2010. Contact: Dan Morey, 847-837-1069, dan-at-morey.us@comcast.net www.babblehomebrewers.com

February 27

Boston Homebrew Competition

Boston, MA. Entry Deadline: 02/20/2010. Contact: David Lytton, 617-606-2393, dlsman@hotmail.com www.bhc.wort.org

valves and false bottom, and a 10-gallon stock pot with valve. Fermentation is done in a stainless conical, and a copper plate chiller is used for cooling.

Patterson's winning recipe, Time of the Season Belgian Pale, has certainly evolved over time. "I initially developed the recipe as a gateway drug of sorts for those beer drinkers who wanted to get into complex Belgian beers but needed a smaller leap to get there," he explained. "This recipe brings the intricacies of a quality Belgian tripel to an approachable level with lower alcohol, a drier finish, and pleasant English hopping. The essentials for a tasty Belgian beer are still in the recipe but in lower quantities."

The beer began as more of an English pale, but trying the same recipe with Belgian yeast yielded a light, refreshing, approachable Belgian ale with just the nuances Patterson was looking for. "I've only slightly changed the amount of turbinado sugar since that major change."

Brewing the beer at Upslope Brewing Company in Boulder was an enlightening experience. Patterson worked with brewers Alex Violette and Dany Pages at Upslope to determine scaling for the recipe and to finally brew 7 barrels of his creation. He also got a lot of input from other folks at the brewery. "Matt Cutter, Henry Wood, Chad Pieper, and others at Upslope offered feedback and praise throughout the process. Everybody there was incredible and really allowed me a lot of liberty to be creative and fully hands on with everything. This would not have been the same dream come true without them."

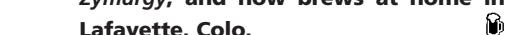
The end result was a beer that was "extremely similar" to Patterson's homebrewed version of Time of the Season. Violette also had high praise for working with Brian at Upslope. "Brian was awesome—he was right at home in the brew-house, and knew everything that was going on." Time of the Season Belgian Pale was at the time of this writing available on tap at Upslope Brewing, and it combines the crisp, refreshing qualities of a pale with a subtle spicing from the Trappist ale yeast. Reminiscent of a Trappist Single, it is no doubt very simi-

lar to the "everyday ale" Trappist monks brew for their own enjoyment.

Patterson also offers sound advice to homebrewers seeking inspiration. "Brew often and with passion. I would suggest competing in and judging for local competitions. If you compete, brew the recipe again with feedback in mind."

Travel is also vital for sampling and eventually brewing the world's best beer. "When I am not brewing, I am tasting beers from around the world or climbing mountains," he said. A beer-oriented research excursion to Southern Germany has most certainly added to his brewing repertoire, but Patterson makes it very clear what he thinks is the ultimate destination for homebrewers: "If you can afford it, go to Belgium!"

Amahl Turczyn Scheppach is a former craft brewer and associate editor of *Zymurgy*, and now brews at home in Lafayette, Colo.



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AHA



2009 Brewery & Brewer of the Year Awards:



Category: 1 / American-Style Cream Ale or Lager, 24 Entries

Gold: Milwaukee's Best, Miller Brewing Co., Golden, CO
 Silver: Hamm's, Miller Brewing Co., Golden, CO
 Bronze: Red Dog, Miller Brewing Co., Golden, CO

Category: 2 / American-Style Wheat Beer, 19 Entries

Gold: County Seat Wheat, Blind Tiger Brewery & Restaurant, Topeka, KS
 Silver: Shredders Wheat, Barley Brown's Brew Pub, Baker City, OR
 Bronze: Double Eagle Ale, Rockyard Brewing Co., Castle Rock, CO

Category: 3 / American-Style Wheat Beer With Yeast, 43 Entries

Gold: Haywire Hefeweizen, Pyramid Breweries, Seattle, WA
 Silver: Hefeweizen, Widmer Brothers Brewing, Portland, OR
 Bronze: UFO Hefeweizen, Harpoon Brewery, Boston, MA

Category: 4 / Fruit Beer or Field Beer, 104 Entries

Gold: Raspberry Creek, Breakwater Brewing Co., Oceanside, CA
 Silver: Magnolia's Peach, BJ's Restaurant & Brewery, Huntington Beach, CA
 Bronze: Raspberry Tart, New Glarus Brewing Co., New Glarus, WI

Category: 5 / Herb and Spice or Chocolate Beer, 85 Entries

Gold: Stillwater Rye, Montana Brewing Co., Billings, MT
 Silver: Imperial Chocolate Stout, Rogue Ales, Newport, OR
 Bronze: Rude Elf's Reserve, Fegley's Allentown & Bethlehem Brew Works, Allentown, PA



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Category: 6 / Coffee Flavored Beer, 45 Entries

Gold: Dude! Where's My Vespa?, Rock Bottom Brewery, Arlington, VA
 Silver: Overcast Espresso Stout, Oakshire Brewing, Eugene, OR
 Bronze: Coffee Bender, Surly Brewing Co., Brooklyn Center, MN

Category: 7 / Specialty Beer, 21 Entries

Gold: Chateau Jiahu, Dogfish Head Brewery, Milton, DE
 Silver: Palo Santo Marron, Dogfish Head Brewery, Milton, DE
 Bronze: Drunken Angel, Rock Bottom Brewery - Chicago, Chicago, IL

Category: 8 / Rye Beer, 21 Entries

Gold: Crazy Jackass Ale, Great American Restaurants, Centreville, VA
 Silver: Blue Point Brewing Co. RastaRye, Blue Point Brewing Co., Patchogue, NY
 Bronze: Hoss, Great Divide Brewing Co., Denver, CO

Category: 9 / Specialty Honey Beer, 36 Entries

Gold: Countdown Honey Brown, Thunder Canyon Brewery, Tucson, AZ
 Silver: George's Fault, Nodding Head Brewing Co., Philadelphia, PA
 Bronze: Midas Touch, Dogfish Head Brewery, Milton, DE

Category: 10 / Session Beer, 27 Entries

Gold: KinderPils, Triumph Brewing Co. of Philadelphia, Philadelphia, PA
 Silver: Firestone Xtra Pale, Firestone Walker Brewing Co., Paso Robles, CA
 Bronze: Bam Biere, Jolly Pumpkin Artisan Ales, Dexter, MI

Category: 11 / Other Strong Beer, 44 Entries

Gold: Cardiff, Glenwood Canyon Brewing Co., Glenwood Springs, CO
 Silver: Winter Wheatwine, Rubicon Brewing Co., Sacramento, CA
 Bronze: FiftyFifty Imperial Stout, FiftyFifty Brewing Co., Truckee, CA

Category: 12 / Experimental Beer, 32 Entries

Gold: TPS Report, Trinity Brewing Co., Colorado Springs, CO
 Silver: Bloody Beer, Shorts Brewing Co., Bellaire, MI
 Bronze: Brabant, Avery Brewing Co., Boulder, CO

Category: 13 / Out of Category – Traditionally Brewed Beer, 82 Entries

Gold: W '10, Widmer Brothers Brewing, Portland, OR
 Silver: Brooklyner-Schneider Hopfen-Weisse, Brooklyn Brewery, Brooklyn, NY
 Bronze: S1NISTOR Black Ale, 10 Barrel Brewing Co., Bend, OR

Category: 14 / Gluten Free Beer, 10 Entries

Gold: Celia Framboise, The Alchemist, Waterbury, VT
 Silver: Redbridge, Anheuser-Busch, Inc., Saint Louis, MO
 Bronze: Celia IPA, The Alchemist, Waterbury, VT

Category: 15 / American-Belgo-Style Ale, 51 Entries

Gold: Exit 4, Flying Fish Brewing Co., Cherry Hill, NJ
 Silver: The Crow and The Sparrow, Rock Bottom Brewery - Chicago, Chicago, IL
 Bronze: Temperance, Mountain Sun Pub and Brewery, Boulder, CO

Category: 16 / American-Style Sour Ale, 32 Entries

Gold: Rosso e Marrone, Captain Lawrence Brewing Co., Pleasantville, NY
 Silver: Raspberry Torte, Iron Hill Brewery & Restaurant, Wilmington, DE
 Bronze: Diamond Kings '09, Brugge Brasserie, Indianapolis, IN

Category: 17 / Wood- and Barrel-Aged Beer, 33 Entries

Gold: Humidor Series IPA, Cigar City Brewing, Tampa, FL
 Silver: Red Woody, Goose Island Beer Co., Chicago, IL
 Bronze: Red Brick Anniversary Ale 15, Red Brick-Atlanta Brewing Co., Atlanta, GA

Category: 18 / Wood- and Barrel-Aged Strong Beer, 110 Entries

Gold: Cereal Killer Barleywine, Arcadia Brewing Co., Battle Creek, MI
 Silver: Barrel Aged Gonzo, Flying Dog Brewery, Frederick, MD
 Bronze: Duck-Rabbit Barrel Aged Baltic Porter, The Duck-Rabbit Craft Brewery, Inc., Farmville, NC

Category: 19 / Wood- and Barrel-Aged Sour Beer, 45 Entries

Gold: Bourbonic Plague, Cascade Brewery Co. LLC, Portland, OR
 Silver: Vlad the Imp Aler, Cascade Brewery Co. LLC, Portland, OR
 Bronze: Phruit Phunk, Nodding Head Brewing Co., Philadelphia, PA

Category: 20 / Aged Beer, 32 Entries

Gold: Horn Dog Vintage 2007, Flying Dog Brewery, Frederick, MD
 Silver: St. Bob's Imperial Stout, IL Vicino Brewing Co., Albuquerque, NM
 Bronze: Winterfest 2008, Utah Brewers Co-op, Salt Lake City, UT

SAMUEL ADAMS



Category: 21 / Kellerbier/Zwickelbier, 27 Entries

Gold: Hell In Keller, Uncle Billy's Brew & Que, Austin, TX
Silver: Natural Born Keller, Devils Backbone Brewing Co., Roseland, VA
Bronze: Red Rock Organic Zwickel Bier, Red Rock Brewing Co., Salt Lake City, UT

Category: 22 / Smoked Beer, 43 Entries

Gold: Smokejumper, Left Hand Brewing Co., Longmont, CO
Silver: Up In Smoke, Fat Head's Brewery & Saloon, North Olmsted, OH
Bronze: Diesel Imperial Smoked Porter, 21st Amendment Brewery, San Francisco, CA

Category: 23 / International-Style Pilsener, 13 Entries

Gold: Gold Leaf Lager, Devils Backbone Brewing Co., Roseland, VA
Silver: OE800, Miller Brewing Co., Golden, CO
Bronze: Gold Mountain Pilsner, Silver City Brewery, Silverdale, WA

Category: 24 / German-Style Pilsener, 48 Entries

Gold: 106 Pilsner, Rock Bottom Brewery - Milwaukee, Milwaukee, WI
Silver: Pilsner, Chuckanut Brewery, Bellingham, WA
Bronze: Troegs Sunshine Pils, Troegs Brewing Co., Harrisburg, PA

Category: 25 / Bohemian Style Pilsener, 39 Entries

Gold: Vermont Lager, Otter Creek Brewing/Wolaver's Organic Ales, Middlebury, VT
Silver: Gordon Biersch Czech Pilsner, Gordon Biersch Brewery Restaurant Group, Broomfield, CO
Bronze: Bell's Lager Beer, Bell's Brewery, Inc., Galesburg, MI

Category: 26 / Munich Style Helles, 31 Entries

Gold: Saint Arnold Summer Pils, Saint Arnold Brewing Co., Houston, TX
Silver: Where the Helles Bill?, The SandLot, Denver, CO
Bronze: Gordon Biersch, Golden Export, Gordon Biersch Brewery Restaurant Group, Broomfield, CO

Category: 27 / Dortmunder or German-Style Oktoberfest, 20 Entries

Gold: Move Back, The SandLot, Denver, CO
Silver: Greenside Up, The SandLot, Denver, CO
Bronze: Capital Bavarian Lager, Capital Brewery Co., Inc., Middleton, WI

Category: 28 / American Style Light Lager, 25 Entries

Gold: Budweiser Select, Anheuser-Busch, Inc., Saint Louis, MO
Silver: Keystone Light, Coors Brewing Co., Golden, CO
Bronze: Michelob Ultra, Anheuser-Busch, Inc., Saint Louis, MO

Category: 29 / American-Style Lager or Premium Lager, 34 Entries

Gold: Coors Banquet, Coors Brewing Co., Golden, CO
Silver: Miller High Life, Miller Brewing Co., Golden, CO
Bronze: Totally Naked, New Glarus Brewing Co., New Glarus, WI

Category: 30 / American Style Specialty Lager, 23 Entries

Gold: Keystone Ice, Coors Brewing Co., Golden, CO
Silver: Pre-Pro, Coors Brewing Co., Gol, Golden, CO
Bronze: Steel Reserve, Miller Brewing Co., Golden, CO

Category: 31 / Vienna Style Lager, 25 Entries

Gold: Vienna Lager, Chuckanut Brewery, Bellingham, WA
Silver: Vienna Lager, Devils Backbone Brewing Co., Roseland, VA
Bronze: Clipper City Marzhon Vienna Lager, Clipper City Brewing Co., Baltimore, MD

Category: 32 / German Style Märzen, 45 Entries

Gold: Dogtoberfest, Flying Dog Brewery, Frederick, MD
Silver: Reines Marzen, Dry Dock Brewing Co., Aurora, CO
Bronze: Rocktoberfest, Rock Bottom Brewery - Long Beach, Long Beach, CA

Category: 33 / American Style Amber Lager, 45 Entries

Gold: Durango Colorfest, Durango Brewing Co., Durango, CO
Silver: Killian's Red, Coors Brewing Co., Golden, CO
Bronze: Michelob Marzen, Michelob Brewing Co., Saint Louis, MO

Category: 34 / European Style Dunkel, 21 Entries

Gold: Dunkel, Chuckanut Brewery, Bellingham, WA
Silver: Gordon Biersch Dunkles, Gordon Biersch Brewery Restaurant Group, Broomfield, CO
Bronze: Dunkel, AC Golden Brewing Co., Golden, CO

Category: 35 / American-Style Dark Lager, 15 Entries

Gold: Session Black Premium Lager, Full Sail Brewing at Riverplace, Portland, OR
Silver: Roadrunner Red Lager, Thunder Canyon Brewery, Tucson, AZ
Bronze: Saranac Black Forest, Saranac/F.X. Matt Brewing Co., Utica, NY

Category: 36 / German Style Schwarzbier, 34 Entries

Gold: Schwarzbier, Iron Hill Brewery & Restaurant, Wilmington, DE
Silver: Schwarzbier, Chuckanut Brewery, Bellingham, WA
Bronze: Dark Helmet, Titletown Brewing Co., Green Bay, WI

Category: 37 / Bock, 40 Entries

Gold: Troegenator, Troegs Brewing Co., Harrisburg, PA
Silver: May Bock, Backcountry Brewery, Frisco, CO
Bronze: Fornicator, Piece Brewery, Chicago, IL

Category: 38 / German Style Doppelbock or Eisbock, 21 Entries

Gold: The Kaiser, Avery Brewing Co., Boulder, CO
Silver: Samuel Adams Double Bock, Boston Beer Co., Boston, MA
Bronze: Carbonator, Glenwood Canyon Brewing Co., Glenwood Springs, CO

Category: 39 / Baltic-Style Porter, 16 Entries

Gold: Duck-Rabbit Baltic Porter, The Duck-Rabbit Craft Brewery, Inc., Farmville, NC
Silver: Danzig, Devils Backbone Brewing Co., Roseland, VA
Bronze: Veles Baltic Porter, FireHouse Grill & Brewery, Sunnyvale, CA

Category: 40 / Golden or Blonde Ale, 43 Entries

Gold: Golden Spike, Tustin Brewing Co., Tustin, CA
Silver: Kiwanda Cream Ale, Pelican Pub & Brewery, Pacific City, OR
Bronze: Red Rock Blonde Ale, Red Rock Brewing Co., Salt Lake City, UT

Category: 41 / German Style Kölsch, 43 Entries

Gold: Kolsch, Sierra Nevada Brewing Co., Chico, CA
Silver: Clearwater Kolsch, Ram Restaurant & Brewery (2), Tacoma, WA
Bronze: Stoudts Kolsch, Stoudt Brewing Co., Adamstown, PA

Category: 42 / English-Style Summer Ale, 33 Entries

Gold: Light Rock Ale, RJ Rockers Brewing Co., Spartanburg, SC
Silver: Surfer's Summer Ale, Pelican Pub & Brewery, Pacific City, OR
Bronze: True Blonde Ale, Ska Brewing Co., Durango, CO

Category: 43 / Classic English Style Pale Ale, 33 Entries

Gold: Mactarnahan's Amber, Pyramid Breweries, Seattle, WA
Silver: Mirror Pond Pale Ale, Deschutes Brewery, Bend, OR
Bronze: Hopfish, Flying Fish Brewing Co., Cherry Hill, NJ

Category: 44 / English-Style India Pale Ale, 40 Entries

Gold: Beech Street Bitter, Pizza Port Carlsbad, Carlsbad, CA
Silver: IPA, Goose Island Beer Co., Chicago, IL
Bronze: Brewer's Alley India Pale Ale, Brewer's Alley Restaurant and Brewery, Frederick, MD

Category: 45 / American Style Pale Ale, 108 Entries

Gold: Sweetgrass IPA, Grand Teton Brewing Co., Victor, ID
Silver: 44 Pale Ale, Colorado Brewing Co./Draft House, Boulder, CO
Bronze: Tumble Off Pale Ale, Barley Brown's Brew Pub, Baker City, OR

Category: 46 / American-Style Strong Pale Ale, 70 Entries

Gold: Racer 5 IPA, Bear Republic Factory Five, Cloverdale, CA
Silver: Hopshot IPA, Beaver St. Brewery, Flagstaff, AZ
Bronze: IPA Nectar, Firestone Walker Brewing Co., Paso Robles, CA

Category: 47 / American-Style India Pale Ale, 134 Entries

Gold: Union Jack, Firestone Walker Brewing Co., Paso Robles, CA
Silver: Sculpin IPA, Ballast Point Brewing Co., San Diego, CA
Bronze: Blind Pig IPA, Russian River Brewing Co., Santa Rosa, CA

Category: 48 / Imperial India Pale Ale, 77 Entries

Gold: Organic Ace of Spades Imperial IPA, Hopworks Urban Brewery, Portland, OR
Silver: Denoggizer, Drake's Brewing Co., San Leandro, CA
Bronze: Hip Hop Double IPA, Hollister Brewing Co., Goleta, CA

Category: 49 / American Style Amber/Red Ale, 78 Entries

Gold: Organic Rise Up Red, Hopworks Urban Brewery, Portland, OR
Silver: Red Rock, Triple Rock Brewery and Alehouse, Berkeley, CA
Bronze: Hop Head Red, Green Flash Brewing Co., Vista, CA



Category: 50 / Imperial Red Ale, 36 Entries

Gold: Shark Attack, Pizza Port Solana Beach, Solana Beach, CA
 Silver: 547 Haight - The Toronado San Francisco's 20th Anniversary Imperial Red Ale, Pizza Port Carlsbad, Carlsbad, CA
 Bronze: Organic Deranger Imperial Red, Laurelwood Brewing Co., Portland, OR

Category: 51 / English Style Mild Ale, 17 Entries

Gold: Sara's Ruby Mild, Magnolia Gastropub & Brewery, San Francisco, CA
 Silver: AK Session, Snake River Brewing, Jackson, WY
 Bronze: Coyote Moon, Snipes Mountain Brewing Inc., Sunnyside, WA

Category: 52 / Ordinary or Special Bitter, 45 Entries

Gold: Big Rapid Red, Beaver St. Brewery, Flagstaff, AZ
 Silver: Cutthroat Pale Ale, Uinta Brewing Co., Salt Lake City, UT
 Bronze: Numbers Ale, Red Brick-Atlanta Brewing Co., Atlanta, GA

Category: 53 / Extra Special Bitter or Strong Bitter, 47 Entries

Gold: ESB, Redhook Ales - Woodinville, Woodinville, WA
 Silver: Motorboat ESB, SweetWater Brewing Co., Atlanta, GA
 Bronze: Colorado Boy IPA, Colorado Boy Pub & Brewery, Ridgway, CO

Category: 54 / Scottish Style Ale, 29 Entries

Gold: Railbender Ale, Erie Brewing Co., Erie, PA
 Silver: Kilt Lifter, Four Peaks Brewing Co., Tempe, AZ
 Bronze: Cold Smoke Scotch Ale, Kettlehouse Brewing Co., Missoula, MT

Category: 55 / Irish Style Red Ale, 32 Entries

Gold: RidgeTop Red, Silver City Brewery, Silverdale, WA
 Silver: Colorado Boy Irish, Colorado Boy Pub & Brewery, Ridgway, CO
 Bronze: Saranac Irish Red Ale, Saranac/F.X. Matt Brewing Co., Utica, NY

Category: 56 / English Style Brown Ale, 41 Entries

Gold: Longboard Brown, Rock Bottom Brewery - La Jolla, La Jolla, CA
 Silver: Buster Nut Brown, Ska Brewing Co., Durango, CO
 Bronze: Good Grief Brown, Pizza Port Carlsbad, Carlsbad, CA

Category: 57 / American Style Brown Ale, 43 Entries

Gold: Dirty Helen Brown Ale, Barley Island Brewing Co., Noblesville, IN
 Silver: Cheyenne Cañon Ale, Bristol Brewing Co., Colorado Springs, CO
 Bronze: Great American Brown, Pizza Port Carlsbad, Carlsbad, CA

Category: 58 / German Style Altbier, 35 Entries

Gold: Bismarck Altbier, Dry Dock Brewing Co., Aurora, CO
 Silver: Boca Alt, Brewzzi West Palm, West Palm Beach, FL
 Bronze: Gordon Biersch Alt Bier, Gordon Biersch Brewery Restaurant Group, Broomfield, CO

Category: 59 / German-Style Sour Ale, 13 Entries

Gold: Berliner Weisse, Southampton Publick House, Southampton, NY
 Silver: NBB Love, New Belgium Brewing Co., Inc., Fort Collins, CO
 Bronze: Bad Kitty, Brugge Brasserie, Indianapolis, IN

Category: 60 / South German Style Hefeweizen, 66 Entries

Gold: Top Heavy Hefeweizen, Piece Brewery, Chicago, IL
 Silver: U-Boat Hefeweizen, Dry Dock Brewing Co., Aurora, CO
 Bronze: Wiezen, Redhook Ales - Portsmouth, Portsmouth, NH

Category: 61 / German-Style Wheat Ale, 38 Entries

Gold: Hefeweizen, Triumph Brewing Co. of New Hope, New Hope, PA
 Silver: Weizenbock, The Covey Restaurant & Brewery, Fort Worth, TX
 Bronze: Upslope Dunkel Weizen, Upslope Brewing Co., Boulder, CO

Category: 62 / Belgian-Style Witbier, 53 Entries

Gold: ZON, Boulevard Brewing Co., Kansas City, MO
 Silver: Belgian White, Big Dog's Brewing Co., Las Vegas, NV
 Bronze: Wits End, Great American Restaurants, Centreville, VA

Category: 63 / French- and Belgian Style Saison, 56 Entries

Gold: Saison Vautour, McKenzie Brew House, Glen Mills, PA
 Silver: Belgian Summer Ale, Great Adirondack Brewing Co., Lake Placid, NY
 Bronze: Saison Du Bastone, Bastone Brewery, Royal Oak, MI

Category: 64 / Belgian and French-Style Ale, 41 Entries

Gold: Carnevale, The Lost Abbey, San Marcos, CA
 Silver: Demolition, Goose Island Beer Co., Chicago, IL
 Bronze: Collaborative Evil-Sacramento, Sacramento Brewing Co., Sacramento, CA

Category: 65 / Belgian-Style Lambic or Sour Ale, 29 Entries

Gold: Duck Duck Gooze, The Lost Abbey, San Marcos, CA
 Silver: Red Rock, Big Rock Chop House & Brewery, Birmingham, MI
 Bronze: Supplication, Russian River Brewing Co., Santa Rosa, CA

Category: 66 / Belgian-Style Abbey Ale, 58 Entries

Gold: Signature Dubbel, Choc Beer Co., Krebs, OK
 Silver: Tripel, Allagash Brewing Co., Portland, ME
 Bronze: Deschutes Brewery Quad, Deschutes Brewery, Bend, OR

Category: 67 / Belgian Style Strong Specialty Ale, 70 Entries

Gold: Revelations, Pizza Port Carlsbad, Carlsbad, CA
 Silver: "100", The Covey Restaurant & Brewery, Fort Worth, TX
 Bronze: Father Damien Abbey Ale, Maui Brewing Co., Lahaina, HI

Category: 68 / Brown Porter, 38 Entries

Gold: St. Charles Porter, Blackstone Brewing Co., Nashville, TN
 Silver: Lazy Jake Porter, Long Valley Pub and Brewery, Long Valley, NJ
 Bronze: Black Butte Porter, Deschutes Brewery, Bend, OR

Category: 69 / Robust Porter, 57 Entries

Gold: Pt. Reyes Porter, Marin Brewing Co., Larkspur, CA
 Silver: Mocha Porter, Rogue Ales, Newport, OR
 Bronze: Pirate's Porter, Sullivan's Black Forest Brew Haus & Grill, Frankenmuth, MI

Category: 70 / Classic Irish Style Dry Stout, 19 Entries

Gold: Dark Starr Stout, Starr Hill Brewery, Crozet, VA
 Silver: Three Steve Stout, Cambridge House Brew Pub, Torrington, CT
 Bronze: Pub Dog Black Dog Stout, DOG Brewing Co., Westminster, MD

Category: 71 / Foreign Style Stout, 20 Entries

Gold: Space Stout, Laurelwood Brewing Co., Portland, OR
 Silver: San Quentin's Breakout Stout, Marin Brewing Co., Larkspur, CA
 Bronze: Whiteface Black Diamond Stout, Great Adirondack Brewing Co., Lake Placid, NY

Category: 72 / American-Style Stout, 22 Entries

Gold: Liberty Stout, Gella's Diner and Lb. Brewing Co., Hays, KS
 Silver: Troegs Dead Reckoning, Troegs Brewing Co., Harrisburg, PA
 Bronze: Stonewall Oatmeal Stout, Third Street Aleworks, Santa Rosa, CA

Category: 73 / Sweet Stout, 27 Entries

Gold: Cow Stout, Pizza Port Carlsbad, Carlsbad, CA
 Silver: Cream Stout, Redwood Brewing Co., Flint, MI
 Bronze: Steel Toe Stout, Ska Brewing Co., Durango, CO

Category: 74 / Oatmeal Stout, 31 Entries

Gold: Ernest's Silky Smoove, Pizza Port San Clemente, San Clemente, CA
 Silver: Oatmeal Stout, Schooner's Grille & Brewery, Antioch, CA
 Bronze: Sleeping Dog Stout, Chama River Brewing Co., Albuquerque, NM

Category: 75 / Imperial Stout, 56 Entries

Gold: Gonzo Imperial Porter, Flying Dog Brewery, Frederick, MD
 Silver: Yeti Imperial Stout, Great Divide Brewing Co., Denver, CO
 Bronze: Sexual Chocolate Imperial Stout, Foothills Brewing, Winston-Salem, NC

Category: 76 / Scotch Ale, 37 Entries

Gold: Reed's Wee Heavy, Pizza Port Carlsbad, Carlsbad, CA
 Silver: BagPiper's Scotch Ale, Fegley's Allentown & Bethlehem Brew Works, Allentown, PA
 Bronze: MacPelican's Wee Heavy Ale, Pelican Pub & Brewery, Pacific City, OR

Category: 77 / Old Ale or Strong Ale, 29 Entries

Gold: Old Scrooge '98, Silver City Brewery, Silverdale, WA
 Silver: Outback X, Bend Brewing Co., Bend, OR
 Bronze: 4th Dementia Old Ale, Kuhnhenn Brewing Co., Warren, MI

Category: 78 / Barley Wine Style Ale, 54 Entries

Gold: Old Inventory Barley Wine, Valley Brewing Co., Stockton, CA
 Silver: Treblehook, Redhook Ales - Woodinville, Woodinville, WA
 Bronze: Old Ruffian Barley Wine, Great Divide Brewing Co., Denver, CO

2009 Great American Beer Festival Pro-Am Competition

Gold: Herbal Joe's Columbarillo IPA, Chama River Brewing Co., Albuquerque, NM, Brewmaster: Jeff Erway, AHA Member: Ben Miller
 Silver: Alright Already Amber, O'Fallon Brewery, O'Fallon, MO
 Brewmaster: Brian Owens, AHA Member: Jim Yeager
 Bronze: Time of the Season, Upslope Brewing Co., Boulder, CO
 Brewmaster: Daniel Pages, AHA Member: Brian Patterson

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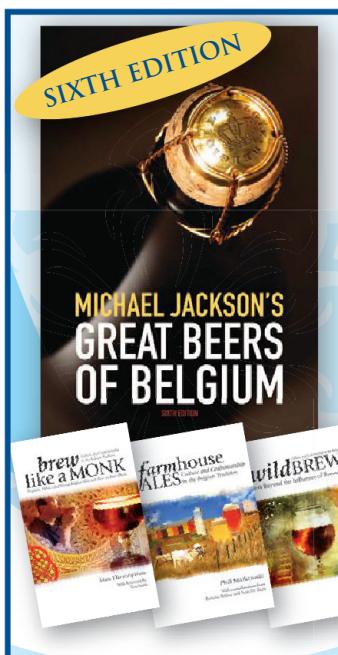
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ADVERTISERS INDEX

Abita Brewing Co.	50	Danstar.	2	New Belgium Brewing Co.	Cover 4
www.abita.com		www.Danstar.com		www.NewBelgium.com	
AHA Pub Discount Program.	27	Five Star Chemicals.	37	Northern Brewer.	20
www.homebrewersassociation.org		www.fivestarchemicals.com		www.northernbrewer.com	
Allagash Brewing Co.	38	Grape and Granary.	42	Northwestern Extract Co.	46
www.allagash.com		www.grapeandgranary.com		www.NWExtract.com	
American Brewers Guild Brewing School.	21	GreatBrewers.com.	12	Quality Wine and Ale Supply.	44
www.abgbrew.com		www.greatbrewers.com		www.HomeBrewIt.com	
American Craft Beer Week.	31	Harper Collins.	49	Quoin Industrial Inc. / Party Pig.	26
www.homebrewersassociation.org		www.harpercollins.com		www.partypig.com	
American Homebrewers Association.	50, 51, 53	Hobby Beverage Equipment.	53	SABCO.	34
www.homebrewersassociation.org		www.minibrew.com		www.Kegs.com	
Bacchus and Barleycorn Ltd.	44	Home Brewery, The.	42	Schaefer Kegs NA/Keg Club Inc.	31
www.bacchus-barleycorn.com		www.homebrewery.com		www.schaeferkegs.com	
Beersmith.com.	31	HopUnion LLC.	38	Seven Bridges.	31
www.beersmith.com		www.HopUnion.com		www.SevenBridges.com	
Beverage People, The.	42	Hume Labs.	31	Sierra Nevada Brewing Company.	Cover 3
www.thebeveragepeople.com		www.brewballstore.com/		www.sierranevada.com	
Blichmann Engineering.	12	Larry's Brewing Supply.	30	St. Louis Wine and Beermaking.	31
www.BlichmannEngineering.com		www.larrysbrewsupply.com		www.wineandbeermaking.com	
Boston Beer Company.	2	Michelob Brewing Company.	8	Support Your Local Brewery.	31
www.BostonBeer.com		www.michelob.com		www.SupportYourLocalBrewery.org	
Brewers Publications.	50, 59	Micro Matic USA, Inc.	17	TommyKnocker Brewery & Pub.	16
www.brewersassociation.org		www.micromatic.com		www.tommyknocker.com	
Brewery Ommegang.	Cover 2	Midwest Homebrew.	46	Weyermann Specialty Malting Company.	17
www.ommegang.com		www.midwestsupplies.com		www.weyermannmalt.com/	
Briess Malt & Ingredients Company.	14	Monster Brewing Hardware.	24	White Labs, Inc. Pure Yeast & Fermentation.	42
www.brewingwithbriess.com		www.monsterbrewinghardware.com		www.WhiteLabs.com	
Country Malt Group.	3	More Beer.	49	William's Brewing.	36
www.countrymaltgroup.com		www.morebeer.com		www.williamsbrewing.com	
Country Wines / South Hills Brewing Supply.	24	Muntons.	1	Wyeast Laboratories Inc.	11
www.countrywines.com; www.southhillsbrewing.com		www.Muntons.com		www.wyeastlab.com	
CraftBeer.com.	31	National Homebrew Competition.	57	*Cover 2 is the inside front cover. Cover 3 is the inside back cover. Cover 4 is the outside back cover.	
www.CraftBeer.com		www.HomebrewersAssociation.org			
Crosby & Baker Ltd.	27	National Homebrewers Conference.	45		
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Debunking the Beer Gut Myth

"I'VE GOT ALL THIS PRESSURE TO KEEP TRIM AS SPORTY SPICE. I USED TO DRINK LAGER AND BLACKCURRANT, BUT I HAD TO STOP BECAUSE I WAS GETTING A BEER GUT. I COULD HAVE ENDED UP BEING FAT OLD LAZY SPICE."

—Mel C, one of the Spice Girls

Back when the Spice Girls were all the rage, Melanie Chisholm aka "Sporty Spice" was understandably watching her figure and, like most other beer drinkers, was familiar with the idea of a "beer gut." Along with terms like "muffin top" and "pot belly," the term "beer gut" has long been used to describe the extra pounds many of us have around our waists. The seemingly harmless two-word combo, though, has made a bad impression in the minds of many beer lovers across the world. Unlike the term "muffin top," which has had zero effect on the public image of muffins, the term "beer gut" captures the belief that drinking beer will lead to weight gain in the abdomen. In fact, it's not that simple.

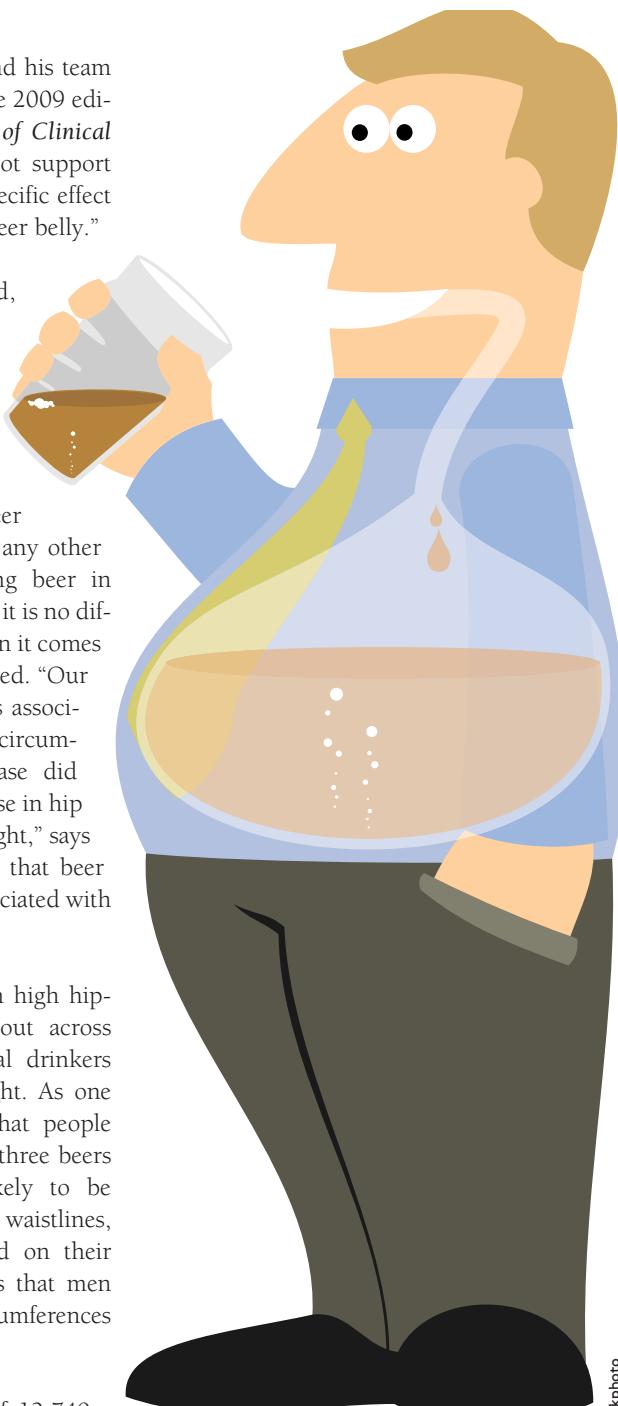
Eight years ago, Madlen Schütze, from the German Institute of Human Nutrition, and his colleagues set out to investigate the reality behind the "beer belly." Since abdominal obesity is a major cardiovascular risk factor, Schütze wanted to see if the term was based in reality. After nearly a

decade of research, Schütze and his team released their findings in a June 2009 edition of the *European Journal of Clinical Nutrition*: "This study does not support the common belief of a site-specific effect of beer on the abdomen, the beer belly."

Over an eight-year period, Schütze's team monitored more than 20,000 Swedish and German beer drinkers, tracking their beer consumption and weight. Their study of longevity revealed that the effects of drinking beer are no different than those of any other food or drink. Sure, drinking beer in excess will add on pounds, but it is no different than any other food when it comes to where those pounds are added. "Our findings showed that beer was associated with an increase in waist circumference. However, this increase did also correspond with an increase in hip circumference and in total weight," says Schütze. "Thus we concluded that beer drinking is not exclusively associated with abdominal obesity."

Schütze found that those with high hip-to-waist ratios were spread out across all categories, from occasional drinkers to those who drink every night. As one would expect, he did find that people who drank more than two or three beers a night are much more likely to be overweight. The size of their waistlines, however, may in fact depend on their gender, as the study indicates that men have much higher waist circumferences than women.

A nearly decade-long study of 12,749 women and 7,876 men is hard to contradict. So welcome back to the bar, Mel C. The first lager is on us.



Gavin Nachbar is a freelance writer working on his own beer gut in his hometown of Amherst, Mass.

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