

FOR THE HOMEBREWER & BEER LOVER

Volume 29 * No. 3 | May/June 2006

zymurgy

■ The Journal of the American Homebrewers Association ■

Brewing Champagne Beer



In this issue:

8 BEERS YOU CAN BREW

The Secret to
Hop Aroma
and Flavor

BAMBERG'S BEER TRAIL

Geeks:
*Fermentation
Kinetics*



A Publication of
the Brewers Association

www.beertown.org

PLUS: National Homebrewers Conference Preview

American Homebrewers Association

Big Brew

Celebrate
National Homebrew Day
with Big Brew!

Big Brew

Saturday, May 6, 2006

Visit www.beertown.org:

- Download Big Brew artwork to promote event
- Register your brewing site
- Check out this year's Big Brew Recipe

Ways to Celebrate:

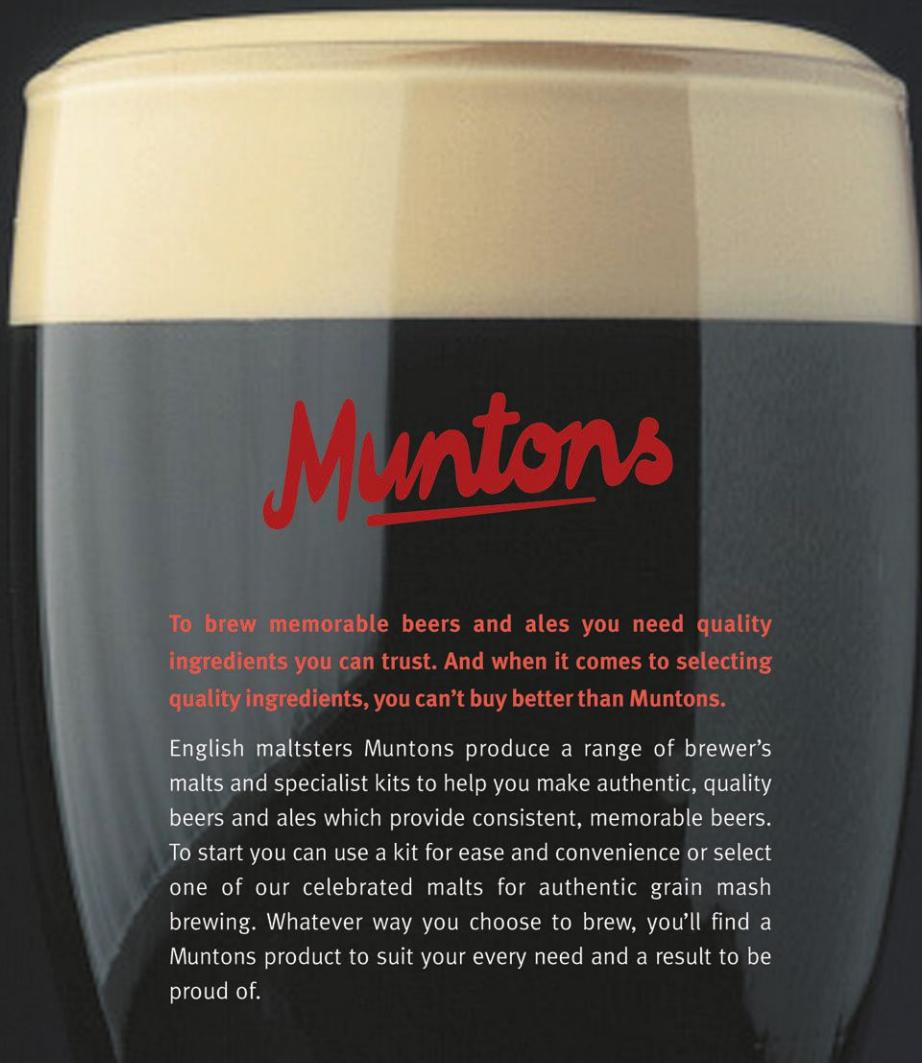
- Bring brewers and non-brewers together to brew beer
- Participate in the Simultaneous Toast at 12 pm (Central)
- Promote this event in your community



American Homebrewers Association
A Division of the Brewers Association
www.beertown.org



Brew with pride



To brew memorable beers and ales you need quality ingredients you can trust. And when it comes to selecting quality ingredients, you can't buy better than Muntons.

English maltsters Muntons produce a range of brewer's malts and specialist kits to help you make authentic, quality beers and ales which provide consistent, memorable beers. To start you can use a kit for ease and convenience or select one of our celebrated malts for authentic grain mash brewing. Whatever way you choose to brew, you'll find a Muntons product to suit your every need and a result to be proud of.

For a quality brew every time, ask your homebrew retailer for Muntons.

Muntons pilsner • bitter • lager • stout • ipa • kits • improvers • malts • and more...

Muntons homebrew products are made in England.

For more information contact: Muntons plc, Cedars Maltings, Stowmarket, Suffolk England IP14 2AG. 0044 14 49 61 83 00

www.muntons.com



Turning a New Page

Now that Jim Parker is back behind bars, allow me to introduce myself.

Actually, Parker is back behind one bar—his newly opened Oaks Bottom Public House in Portland, Ore. As he explained in his last Editor's Desk for *The New Brewer*, *Zymurgy*'s sister publication for the craft brewing industry, the call of entrepreneurship was too great for Parker to resist, and the March/April *Zymurgy* was his last official issue at the helm. Jim added a creative and witty touch to these pages, and we all wish him well in his new endeavor.

Starting this issue, I'll be taking over editorial duties for *Zymurgy*. I've served as associate editor for these pages for more than three years, where I've learned a lot about the art and science of homebrewing and all things beer.

Consequently, as a freelance writer and editor for the past few years, my main areas of emphasis have been sports and beer. A life-long sports enthusiast, I started off my journalism career as a sports writer for the *Daily Camera* newspaper here in Boulder. I spent seven years on the sports desk in one of the most active towns on the planet.

Covering such Boulder-centric sports as running, cycling and triathlon led to a position of senior editor at Boulder-based *Inside Triathlon* magazine, where I spent four years before hanging out my shingle as a freelance writer and editor. Much of my freelance work was sports- and adventure-based due to contacts I had developed over the years and my own personal interests. Then along came the Brewers Association position (back then it was the Association of Brewers), and the melding of one of the best combinations there is, beer and sports.

But enough about me. Let me tell you about the plans for *Zymurgy*.

Zymurgy will be more of a team effort by all of us here at the Brewers Association and the American Homebrewers Association, and the collective expertise of all involved can only benefit our readers. If there's anything you've been hoping to see in these pages, please drop me a note at jill@brewersassociation.org. We're also always on the lookout for interesting beer travel stories if you're the adventurous sort.

Magazines can never be all things to all people, but my simple plan is for each issue to continue to be informative and entertaining, to be user-friendly and to provide lots of news you can use in the form of brewing tips and recipes.

In this issue you'll find late hopping advice from Jamil Zainasheff, a former Ninkasi award winner, and a story on the unusual method of brewing champagne beers from Drew Beechum, president of the Maltose Falcons homebrew club.

Jim Brady previews the National Homebrewers Conference in Orlando, Fla., and talks about the unique issues facing Florida homebrewers. We also take a look at what the Prairie Homebrewing Companions are doing to improve their members' brewing skills and ensure more and better beer at their monthly meetings.

In addition, one of Parker's last tasks on the job was to provide a glimpse into the world of rauchbier in Bamberg, Germany, where he and several other beer journalists had the pleasure to tour.

We also offer a mystery for you to solve: the strange case of the disappearing trophy (see page 6).

Jill Redding
Editor-in-Chief

Journal of the American Homebrewers Association®

Publisher _____ Brewers Association

Executive Editor _____ Ray Daniels

Editor-in-Chief _____ Jill Redding

Art Director _____ Kelli Gomez

Graphic Designer _____ Alyssa Law

Graphics/Production Director _____ Stephanie Johnson

Senior Designer/Web Designer _____ Julie Lawrason

Sales & Marketing Director _____ Cindy Jones
cindy@brewersassociation.org

Advertising & Sponsorship _____ Chris Pryor
Sales East Coast _____ pryor@brewersassociation.org

Advertising & Sponsorship _____ Linda Starck
Sales West Coast _____ linda@brewersassociation.org

Marketing Coordinator _____ Jennifer Reimer
jennifer@brewersassociation.org

Circulation Coordinator _____ Jason Bell

American Homebrewers Association®

Director _____ Gary Glass

Membership Coordinator _____ Kathryn Porter

Project Coordinator _____ Janis Gross

Brewers Association

The purpose of the **Brewers Association** is to promote and protect American craft beer and American craft brewers and the community of brewing enthusiasts. The Brewers Association is a not-for-profit trade Association under Section 501(c)(6) of the Internal Revenue Code.

BA Board of Directors

Steve Bradt, Sam Calagione, Dick Cantwell, Vinnie Cilurzo, Rich Doyle, Mark Edelson, Gary Fish, Ken Grossman, Steve Hindy, Kim Jordan, Jack Joyce, Jim Koch, Randy Mosher, Susan Ruud, Brock Wagner

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*.

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

Zymurgy welcomes letters, opinions, ideas, article queries and information in general from its readers. Correspondence and advertising inquiries should be directed to *Zymurgy*, PO Box 1679, Boulder, CO 80306-1679, (303) 447-0816, FAX (303) 447-2825, www.beertown.org. All material ©2006, American Homebrewers Association. No material may be reproduced without written permission from the AHA.

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

POSTMASTER: Send address changes to:
Zymurgy, 736 Pearl Street, Boulder, CO 80302-5006.
Printed in the USA.



zymurgy

COLUMNS

2 | EDITOR'S DESK

By Jill Redding

9 | BREWING BY DESIGN

By Ray Daniels

49 | WORLD OF WORTS

By Charlie Papazian

64 | LAST DROP

By Gary Glass & Pete Johnson

DEPARTMENTS

4 | BEEROSCOPE

7 | DEAR ZYMURGY

11 | AHA ACTIVITIES

14 | CLUB ONLY

46 | COMMERCIAL CALIBRATION

51 | WINNERS CIRCLE

51 | CALENDAR

53 | MEAD FEST RESULTS

54 | FOR GEEKS ONLY

58 | ZYMURGY CONNECTION

63 | ADVERTISER INDEX

63 | CLASSIFIEDS

FEATURES

18 | Brewing Champagne Beer

By Drew Beechum

Brewing a brut takes a little extra work and time, but when you're popping the corks and wowing everyone—even your non-beer-drinking friends—it's worth the effort.

24 | Along the Bamberg Beer Trail

By Jim Parker

Many German cities seem to go hand-in-mug with a single style of beer. None, however, seems as intimately connected as Bamberg and its seductively smoky rauchbier.

32 | Late Hopping for Flavor and Aroma

By Jamil Zainasheff

Have you recently come across a craft brew with a massive hop flavor and a smooth bitterness that you really loved? The secret is very large additions of late hops.

40 | Gator Tails and Better Ales

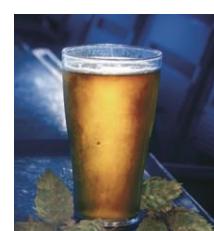
By Jim Brady

We take a look at the unique challenges facing Florida brewers as the Sunshine State gears up to host the National Homebrewers Conference June 22-24.

43 | Prairie Homebrewers Award of Brewing

By Ray Taylor

The Prairie Homebrewing Companions created their own Award of Beer program to improve members' brewing skills. Can it work for your club?



QUICK RECIPE GUIDE

Coopers Rye Beer	14
Brut du Faucon Noir.....	22
Smokey the Beer	28
Brut du Faucon.....	31

Evil Twin	35
Claude of Neptune	
All-Grain Recipe	49

Claude of Neptune	
Malt/Extract Recipe	50
McCollum Mead	51

>> GET THERE!

2006 North American Organic Brewers Festival

The second-ever organic beer festival in North America takes place June 10 in Portland, Ore. Organic brewers from across the United States and Canada will pour their beers alongside organic beers from England and Germany. The event, which will be held at Portland's World Forestry Center, will include sustainable and organic vendors.

Craig Nicholls, brewer-owner of Roots Organic Brewing, organized the first organic beer festival in North America in 2003 at Port Halling Brewing Company in Gresham, Ore. More than two-dozen breweries participated, some of them brewing their first organic beer specifically for the festival. About 1,500 people attended the event, and this year's festival promises to be even bigger.

The 2006 North American Organic Brewers Festival will benefit organic certifier Oregon Tilth, the Oregon Food Bank, the World Forestry Center and a local women's shelter.

For more information go to www.rootsorganicbrewing.com/events.htm.



May 3-6

New England Real Ale Exhibition (NERAX) Somerville, MA. Phone: 617-625-5224, Web: www.nerax.org

May 6

10th Annual Boonville Beer Festival Boonville, CA. Contact: Anderson Valley Brewing Company, Phone: 707-895-2337, E-mail: info@avbc.com, Web: www.avbc.com/news/boontbeefest.html

May 12

Long Island Beer Festival Melville, NY. Contact: Stuart Haimes, Phone: 1-800-873-BEER, E-mail: info@shorelinebeverage.com, Web: www.longislandbeerpestival.com

May 27

California Festival of Beers Avila, CA. Phone: 805-544-2266, E-mail: chrisaho@hospiceslo.org, Web: www.hospiceslo.org/beerfest

May 31-June 4

Mondial de la Biere Montreal, Quebec. Windsor Station & Courtyard. Phone: 514-722-9640, Web: www.festivalmondialbiere.qc.ca

For a complete listing of beer festivals and events, see www.beertown.org/craftbrewing/events.asp.

June 3

4th Sasquatch Brew Fest Eugene, OR. E-mail: falconerfoundation@earthlink.net, Web: www.sasquatchbrewfest.org

June 24

2006 Brewers Summer Games Pacific City, OR. Contact: Ben Love, Phone: 503-965-7007, Fax: 503-965-0061, E-mail: ben@pelicanbrewery.com, Web: www.pelicanbrewery.com/pages/brewerssumergames.html

July 29

Brew at the Zoo Norristown, PA. Contact: Robert or Lisa Polsky, Phone: 610-275-2775, Web: www.brewatthezoo.net

September 28-30

Great American Beer Festival® Denver, CO. Contact: Nancy Johnson, Phone: 888-U-CAN-BREW, E-mail: Nancy@brewersassociation.org



BREW NEWS: 'Father of Light Beer' Dies

Microbrew pioneer Joseph Owades, who was credited with inventing light beer as well as formulating recipes for microbrews such as Samuel Adams, died on December 16 in Sonoma, Calif. He was 86.

Owades, who received a doctorate in biochemistry from Brooklyn Polytechnic Institute, discovered the enzyme that causes yeast to digest all of its starch, enabling a beer to be lower in carbohydrates and calories. The technique was used for Gablinger's Diet Beer, produced under the Rheingold Brewing label. After the Miller Brewing Company bought Gablinger, the beer became Miller Lite. Meister Brau Lite was also formulated using Owades' technique.

Owades went on to create the formulas for Samuel Adams, Pete's Wicked Ale and Foggy Bottom beer, among others. He also served as a consultant to the brewing industry, founding the Center for Brewing Studies in San Francisco. His clients included Anchor Brewing and New Amsterdam.

THE LIST

10

Top Health Benefits of Beer

The fourth European Beer and Health Symposium is scheduled for May 4 in Brussels, Belgium, where the latest scientific findings on the role of moderate beer consumption in a healthy lifestyle will be presented.

The Brewers of Europe, who present the symposium, define moderate consumption as 1-3 drinks a day for men, and 1-2 for women. A drink is defined as 8.5 U.S. ounces with a strength between 4-5 percent abv.

The 2003 symposium and its predecessors presented scientific evidence that moderate consumption of beer:

1. Reduces risk of coronary heart disease and heart attack.
2. Reduces risk of stroke.
3. Reduces risk of blood clots.
4. Reduces risk of late onset diabetes.
5. Reduces risk of gallstones.
6. Provides a protective effect on bones.
7. Reduces risk of senile dementia and Alzheimer's.
8. Reduces stress.
9. Provides essential vitamins and minerals.
10. Provides natural antioxidants in easily absorbable form.

Source: www.brewersofeurope.org.

GREAT GADGET

WHAT'S NEW FROM BREW INNOVATIONS LLC

Mini CO₂ System

Portable CO₂ systems are all the rage for brewers who don't want to lug heavy canisters along with their beer.

This new system from Brew Innovations takes things a step further by using refillable CO₂ cylinders ranging in size from 4 ounces to 20 ounces. A 9-ounce cylinder can dispense 1.5 kegs of beer. The CO₂ cylinders are the same as the ones used in paintball and can be refilled at most sporting goods stores or welding supply stores for a few dollars.

The standard mini system includes a hanger with a securing thumbscrew, a 9-ounce cylinder and a fully adjustable regulator with integrated safety features.

Brew Innovations offers four options of the system, including a Homebrewer style specifically suited for Corney kegs that includes hoses, a faucet and ball locks.

For more information go to www.octopustap.com.



BREW NEWS: Schmidlin is Beerdrinker of Year

Tom Schmidlin, a 36-year-old University of Washington graduate student, devout homebrewer and self-proclaimed "yeast dork," won the 2006 Beerdrinker of the Year title at Wynkoop Brewing Co. in Denver on February 25.

In a two-hour session packed with difficult beer questions from a panel of seven judges, Schmidlin used his knowledge of beer, a quick wit and some impressive bribes to land the crown. Schmidlin won \$250 worth of beer at his local brewpub (Big Time Brewery & Alehouse in Seattle, Wash.) and free beer for life at the Wynkoop.

Schmidlin held off serious challenges from finalists Diane Catanzaro, a Norfolk, Va. homebrewer, beer judge and psychology professor at Christopher Newport University, and Warren Monteiro, a New York City playwright, script writer and devout beer hunter/educator.

Schmidlin provided judges with samples of a yeast strain he isolated and cultivated from a bottle of Rogue Chocolate Stout. He also wooed the judges with a vertical tasting of three vintages of Dogfish Head Worldwide Stout.

Judges included Don Russell ("Joe Sixpack" beer columnist for the *Philadelphia Daily News* and host of "Joe Sixpack's Happy Hour" radio show), Bill Metzger (publisher of the *Brewing News* newspapers) and Chris Black (proprietor of Denver's Falling Rock Taphouse), as well as previous Beerdrinkers of the Year.

The 2007 Beerdrinker of the Year search is underway. Go to www.wynkoop.com for details.



>> BEER JOKE

A gorilla walks into a bar, pulls up a stool and orders a beer. The bartender pours him a tall, frothy mug and says "That'll be five bucks."

As the gorilla is paying for his beer, the bartender adds, "You know...we don't get many gorillas in here."

To which the gorilla replies, "At five bucks a beer, it's no wonder."



BREW NEWS: American Craft Beer Week

This year American Beer Month is transforming into American Craft Beer Week, to be celebrated May 15-21 across the United States.

The focus of American craft beer week will be a "Visit Your Local Brewery" campaign, based on the fact that the average American lives within 10 miles of a brewery.

As a part of the festivities, the Brewers Association will conduct the Great American Beer Tour program, encouraging beer lovers to visit breweries to collect points and earn prizes including pint glasses, shirts and even a trip to the 25th Great American Beer Festival in Denver this September.

For more go to www.americancraftbeerweek.org.



>> THE CASE OF THE DISAPPEARING TROPHY

It had been more than five years since the AHA Homebrewer of the Year trophy had disappeared when AHA member Ron Cooper spotted it on display at the hotel bar in the Four-Points Sheraton LAX in Los Angeles.

The trophy, a beautiful replica of an old mash tun, circa 1930, was originally donated to the AHA by Munton & Fison back in 1981. The Munton & Fison engineering department spent three months crafting the model from mahogany, copper, brass and steel.

The trophy went missing from a storage room at the Sheraton in the wee hours following the closing of the AHA National Homebrewers Conference held at the hotel in June 2001, and had not been seen since.



Cooper, who noticed the trophy while sitting at the bar earlier this year, had served as the judge coordinator for the second round of the National Homebrew Competition at the 2001 conference. Though it has sustained some damage and is in need of a good polishing, the trophy is safely back at the AHA office.



>> BEER QUOTE

"We live in the Napa Valley of beer here in Colorado."
—Overheard at a University of Colorado basketball game

by Our Readers

Homebrewing in Katrina's Wake

Dear *Zymurgy*,

I'm a longtime member of the Mystic Krewe of Brew (MKOB), a brew club with members in and on the Northshore of New Orleans. Last year our area was devastated by one of the biggest hurricanes to hit the U.S. in history.

Many club members either braved the storm or returned to their homes afterward to find many personal items destroyed. Some were lucky, like myself, and only had a tree or two on their house. Some were not so lucky and found their homes ruined.

Now, while brewing is not at the top of a homebrewer's list when they're trying to rebuild their house, it still is on the list somewhere. So after a couple months of

toiling in the heat and humidity helping friends and basically trying to get our lives back to normal, lots of us started thinking about getting a batch of homebrew going. Friends pieced together homebrew systems or went to a friend's house to use their equipment.

One of the problems after the storm was getting fresh yeast. Our good friend who operated the only homebrew shop in the area had to close down. The shipping system was not very functional for ordering out of state at that time, so many decided not to brew or tried using dried yeast.

After several failed attempts at ordering yeast from out of the area, I decided to drop an e-mail to JoAnne at White Labs to see if there was any way I could do a

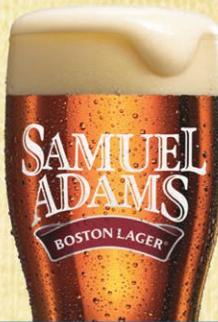
big yeast order for my club. I didn't really expect to get anything more than a form letter reply. But JoAnne called me back personally on a Sunday night from her home.

We talked for a while about our situation. JoAnne told me she couldn't sell to us because of business regulations—but that White Labs would be happy to comp us a batch of yeast to keep us going until things got back to normal.

They sent us about 60 bottles of yeast, regular and platinum strains to help us out. This got to us a couple weeks before Christmas and was enough for each of our members who so desired to have a bottle or two of yeast to get a batch of brew going.

YOU KNOW THE HEAD OF A SAMUEL ADAMS.[®]

Now let's discuss its soul.



HOPS ARE TO BEER WHAT GRAPES ARE TO WINE.[™]

Every year, Jim Koch, Founder and Brewer of Samuel Adams[®] beers, travels to Bavaria and along with Stefan Stanglmair, a 9th generation hops farmer, hand selects the best Noble hops in the world. Jim does this because he knows that small growing variations such as soil composition or a farmer's growing practices or even which direction a hop field faces can change hop aroma and flavor even within the same hop variety. At Samuel Adams[®], we're committed to quality and we believe that quality starts with the ingredients.



Take pride in your beer.[®]

Shipping still isn't back to normal, but a lot of brewers have figured out how to culture a good strain and keep it going through several brews. Others have tested and come up with strains of dry yeast that they're having luck with.

We're still rebuilding. Much of the city is still in ruins. Lots of our brew club members are still living in trailers while trying to fix or tear down their homes. But one thing wasn't damaged...our love of homebrew.

While it's very hard to look at a friend's ruined house, and walk in to tear out the

walls with him, a cold homebrew helps to soothe things a bit.

Cheers,
Russ Clayton
Slidell, La.

Recipe Requests

Dear *Zymurgy*,

I would like to congratulate you on the job you and your staff are doing each time you put out *Zymurgy*. I know the time and effort that goes into such a publication. Again thank you!

I have two requests for your consideration:

1. When publishing a recipe, please include when to add and remove items like the specialty grains, spices, etc.
2. Would like to see an all-grain version included, including the mash efficiency.

I know that it is easy to overlook various aspects of a recipe because you assume that everybody knows what to do. I think you should keep in mind that the magazine could find its way into the hands of a novice brewer or a person that is thinking about brewing as a hobby.

Thanks again for doing such an outstanding job!

Good Friends & Good Beer!
Cheers,
Mick Barnes

Thanks for your note, Mick! Our recipes come from many different sources and we will try our best to include all-grain versions and information helpful to novices whenever possible.

—Ed.

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

AMERICAN HOMEBREWERS ASSOCIATION GOVERNING COMMITTEE

- Chairperson
Mark Tumarkin, Gainesville, FL
- Vice Chairperson
Alberta Rager, Shawnee, KS
- Dave Dixon**, Bedford, TX
- Chris Frey**, Saline, MI
- Chris Graham**, Berkeley, CA
- Michael Hall**, Los Alamos, NM
- David Houseman**, Chester Springs, PA
- David Logsdon**, Odell, OR
- Rob Moline**, Ames, IA
- Randy Mosher**, Chicago, IL
- Jeff Renner**, Ann Arbor, MI
- Susan Ruud** (Secretary), Harwood, ND
- Gordon Strong**, Beavercreek, OH
- Jamil Zainasheff**, Elk Grove, CA

BREWERS ASSOCIATION BOARD OF DIRECTORS



OFFICERS

CHAIR

• **Steve Hindy**
Brooklyn Brewery Corp. (NY) (term expires 2008)

VICE CHAIR

• **Rich Doyle**
Harpoon Brewery (MA) (2008)

SECRETARY/TREASURER

• **Steve Bradt**
Free State Brewing Co. (KS) (2008)

AMERICAN HOMEBREWERS ASSOCIATION REPRESENTATIVES

• **Randy Mosher**
Chicago, IL (2007)

• **Susan Ruud**
Harwood, ND (2008)

AT-LARGE MEMBERS

• **Jim Koch**
Boston Beer Co., Boston, MA (2007)

• **Brock Wagner**
St. Arnold Brewing Co., Houston, TX (2008)

BREWPUB REPRESENTATIVES

• **Dick Cantwell**
Elysian Brewery (WA) (2007)

• **Vinnie Cilurzo**
Russian River Brewing Co. (CA) (2009)

• **Mark Edelson**
Iron Hill Brewery Restaurant (DE) (2009)

PACKAGING BREWERY REPRESENTATIVES

• **Sam Calagione**
Dogfish Head Craft Brewery (DE) (2009)

• **Gary Fish**
Deschutes Brewery (OR) (2007)

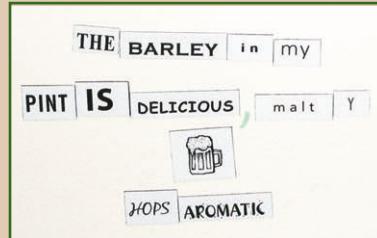
• **Ken Grossman**
Sierra Nevada Brewing Co. (CA) (2009)

• **Kim Jordan**
New Belgium Brewing Co. (CO) (2007)

• **Jack Joyce**
Rogue Ales (OR) (2008)

FROM OUR READERS

Zymurgy reader Kevin Grant of Laurel, Md. created this beer haiku using the refrigerator magnets sent to members of the American Homebrewers Association.



by Ray Daniels



Better Experimenting with Grains

As a prelude to your involvement in homebrewing, I bet a lot of you messed around with chemistry in one way or another as kids.

For instance, vinegar and baking soda was always a favorite mess maker. I was reminded of this recently when my son got a "real live volcano" that promised to erupt "over and over again!" You just put baking soda in the base, snapped on the lid and then poured in the vinegar to produce a gushing torrent of foamy white "lava." Sadly I had no food coloring in the house to give the lava an authentic red cast.

One little trick I remember was the production of "rubber eggs" as a science proj-



ect. Here we soaked a raw egg in vinegar solutions to dissolve the shell and render an egg wrapped in nothing but its outer membrane to keep it from puddling across the table.

And then there was that fourth grade kitchen chemistry session, the one that combined random portions of flour, sugar,

food coloring and, of course, vinegar and baking soda into one mixing bowl with grand ambitions of producing something interesting if not in fact edible. Once I tired of herding it around the bowl, the burbling mass that emerged went straight into the garbage disposal.

And I have to admit that while I have done a fair amount of cooking since then and often concoct dishes that are indeed edible if not grand, I still can't create anything that resembles bread or cake without detailed and specific guidance from a recipe.

Maybe that's why I like brewing so much: the basic rules for producing beer are pretty simple to comprehend. After that, mil-

RETAILERS; WHEREVER YOU ARE, WE'RE PROBABLY CLOSER!



A note to home beer and winemakers:

You can browse the full (unpriced) Crosby & Baker catalog by visiting www.Crosby-Baker.com. Anything you see can be ordered for you by your local retailer from one of our 3 warehouses across the United States.

With the addition of our new facility in Salt Lake City, we cover the country to save you time and money!

We proudly feature all the great stuff and super service your business needs:

- Wine kits from RJ Spagnols
- Weyermann malts and extracts
- Muntons, Mountmellick, Coopers, and a great variety of other extracts and beer kits
- A complete line of beer and winemaking supplies



CROSBY & BAKER Ltd

SERVING THE INDUSTRY FROM:

- WESTPORT, MA • ATLANTA, GA
- AND NOW SALT LAKE CITY, UT

RETAILER INQUIRIES ONLY: 1-800-999-2440

lions of variations can be tried and each will produce a drinkable beer. Furthermore, you can go "off the reservation" without fear of death or health endangerment, plunking in saffron, raisins, wood chips, coffee beans and dang near anything else that gets used in making food. The liberty of opportunity offered by brewing is thus nearly unlimited.

Being an opportunity-driven guy, I have—like many of you—experimented a good bit via homebrewing. I've brewed nearly every style of beer ever documented including some sort-of-beers like sake and kvass. I've made some wicked as well as some forgettable meads. To beer I've added Aspen mulling spices and blueberries, smoked malts and cinnamon sticks—but not all in the same beer! And while these experiments have always been interesting, they weren't always necessarily something I wanted to make in 5-gallon batches. As a result, I have a bit of experience in experimental brewing in small batches.

For years I've owned a passel of 3-gallon glass carboys as well as a host of 1-gallon glass cider jugs. The 3-gallon tank farm tends to get a workout when I'm testing

YOU DON'T HAVE TO HAVE A THOUSAND DOLLARS IN STAINLESS STEEL TO CONDUCT A PROPER MASH.

recipes, comparing ingredients or just making something offbeat. The latter are useful for yeast starters but they can also serve as fermenters for *really* small batches of beer.

But fermenters are just part of the battle. If you normally produce big batches of beer, then properly mashing and lautering smaller amounts of grain can be a problem. As one who has never owned a stainless steel brewing system, I have devised a number of brewing devices over the years and some of them are specifically suited to making smaller batches. Just recently, I've perfected one of these.

The mash tun in question is a plastic 2-gallon cylindrical water cooler about 10 inches in diameter and less than 18 inches tall.

The valve has been removed and replaced with a hose barb. A bit of hose and a hose clamp serve to control and regulate flow out of this vessel. This vessel will mash about 3 pounds of grain—enough for a 1-gallon all-grain beer or a 3-gallon mash-extract beer.

For a false bottom, I've always used a folding vegetable steamer, figuring that it would support the grain mass and serve as an adequate screen. But I have to admit that even though I created this thing years ago and used it a few times, I never loved it because it didn't give a very clear runoff even after extensive recirculation.

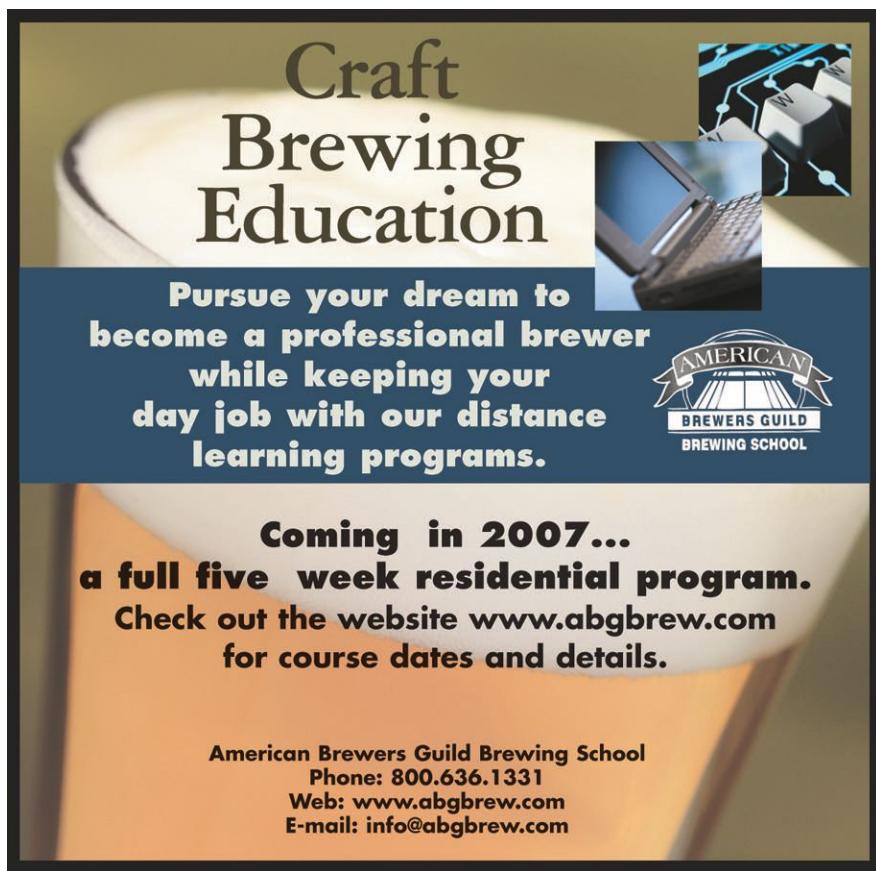
Recently I was prompted to look at this little mini-mash system again because I wanted to make a small batch of beer that didn't need to be all-grain. Remembering the poor runoff characteristics, it occurred to me that rice hulls could be the solution. These brittle, insoluble husks are often sold in homebrew stores to aid lautering with gummy grains like wheat or rye. But they also help to establish a stable filtration bed for regular malt-mashes.

I tried this solution in the mini-mash tun with my recent batch of FDR ale (see my column in the March/April *Zymurgy*) and the results were superb. I added the rice hulls at mash-in with the grains and tried to keep mash stirring to a minimum. When it came time for runoff, the wort began to run clear after just six or eight cups of recirculation. It then stayed clear throughout runoff and sparging. The result was a great beer. And for those of you who are wondering, yes, I did hop the heck out of it!

So a few lessons: a) You don't have to have a thousand dollars in stainless steel to conduct a proper mash. b) If a piece of homebrew equipment isn't working quite right, give it time and you may find a way of improving it as your knowledge increases and new ideas occur to you. c) Rice hulls are (once again) a great thing. And most importantly, d) making beer any how and any way is still a lot of fun.

Cheers!

Ray Daniels is executive editor of *Zymurgy* and director of craft beer marketing for the Brewers Association. 



Craft Brewing Education

Pursue your dream to become a professional brewer while keeping your day job with our distance learning programs.

Coming in 2007...
a full five week residential program.
Check out the website www.abgbrew.com for course dates and details.

American Brewers Guild Brewing School
Phone: 800.636.1331
Web: www.abgbrew.com
E-mail: info@abgbrew.com

by Zymurgy Staff

2006 Kicks Off with Rallies

More than 240 homebrewers converged on New Belgium Brewing Co. in Fort Collins, Colo. on February 25 for the brewery's first American Homebrewers Association rally. The successful rally resulted in 106 AHA memberships, including 83 new members, the most yet from any rally.

Attendees were checked in at the door and then followed a winding staircase up to the brewery's events area, where a bagpipe band entertained. Three sour beers were on tap for attendees to try: La Folie, Eric's Ale (a test beer) and La Terroir.

The brewery also served up four different bottled beers: Blue Paddle Pilsener, Biere de Mars, Abbey and Mothership Wit, an experimental beer.

"It is great to see 200 people here," said brewmaster Peter Bouckaert. "This place was started on homebrewing."

Current AHA members got in free, while other attendees paid \$33, which included an AHA membership or renewal; a brewery tour; a talk by Bouckaert; a complimentary New Belgium globe glass; beer and appetizers.

The rally was one of several coordinated by the AHA to link professional and amateur brewers. Craft brewers from across the United States have helped the AHA increase membership by generously donating their time, beer and facilities for rallies.

Boston Beer Co. hosted a rally on January 27 at the Sam Adams brewery in Boston. Around 80 homebrewers were on hand to enjoy some special beers, including Utopias, the world's strongest beer.

"Boston Beer put on an impressive event," AHA director Gary Glass said.



Founder Jim Koch gave a talk at the Boston Beer rally.



Beer, food and conversation are the theme of AHA rallies.



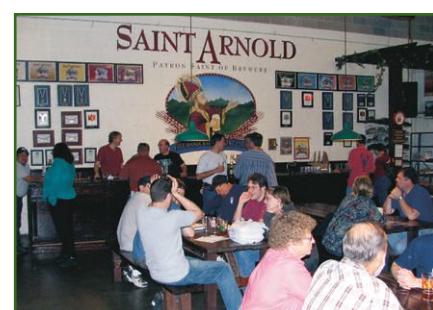
Brewmaster Peter Bouckaert addressed the crowd at New Belgium.



More than 240 homebrewers rocked New Belgium.



St. Arnold founder and brewmaster Brock Wagner raffles off prizes.



AHA members enjoy beer and brats compliments of St. Arnold Brewing Co.

"Attendees were treated to some truly excellent and unique beers, and the homebrewers and beer enthusiasts who were there really appreciated the opportunity to meet Boston Beer founder Jim Koch."

Thanks to the support of Boston Beer, the AHA added 49 new members to its ranks at the rally.

Saint Arnold Brewing Co. in Houston hosted its second rally on March 5. Saint Arnold also hosted the first-ever AHA rally in February 2005 thanks to founder Brock Wagner and liaison Bev Blackwood. The second rally was a great success as well, adding 36 new members, with 22 current members renewing.

For more on upcoming AHA rallies go to www.beertown.org.



Brewers Association PUB DISCOUNT PROGRAM

Participating Pubs

Just show your AHA card to your server at the pubs below and save money on BEER, FOOD and/or MERCHANDISE!

ALASKA

Sleeping Lady Brewing Co./Snow Goose Restaurant
Anchorage

ARIZONA

Barley Brothers Brewery
Lake Havasu City
BJ's Restaurant & Brewery
Chandler
BJ's Restaurant & Brewhouse
Tucson
Old Chicago
Tucson
Rock Bottom Brewery
Glendale, Phoenix (2), Scottsdale

ARKANSAS

Boscos Little Rock Brewing Co.
Little Rock

CALIFORNIA

Anderson Valley Brewing Co.
Boulder
BJ's Restaurant & Brewery
Brea, Laguna Hills, Oxnard, Roseville, West Covina, Woodland Hills
BJ's Pizza & Grill
Folsom, Huntington Beach, La Jolla, Laguna Beach, Long Beach, Los Angeles, Newport Beach
BJ's Restaurant & Brewhouse
Arcadia, Burbank, Cerritos, Corona, Cupertino, Fresno, Huntington Beach, Irvine, La Mesa, Moreno Valley, Rancho Cucamonga, San Bernardino, San Jose, Thousand Oaks, Valencia
E.J. Phair Brewing Co. (#2)
Concord
Firestone Walker Brewing Co.
Buellton, Paso Robles
Huntington Beach Beer Co.
Huntington Beach
O'Brien's Pub
San Diego
Rock Bottom Restaurants
La Jolla, Long Beach, San Jose, San Diego
Rogue Ales Public House
San Francisco
Russian River
Santa Rosa
Santa Barbara Brewing Co.
Santa Barbara
Stone Brewing Co.
Escondido

COLORADO

Backcountry Brewery & Restaraunt
Frisco
BJ's Restaraunt & Brewery
Boulder
Boulder Beer Co.
Boulder
Dillon Dam Brewery
Dillon

Dry Dock Brewing Co. Aurora

Flying Dog Brewery
Denver
Glenwood Canyon Brewing Co.
Glenwood Springs
Great Divide Brewing Co.
Denver
Hops Grillhouse and Brewery
Denver, Golden, Littleton, Northglenn
Ironworks Brewery & Pub
Lakewood
Left Hand Brewing Co.
Longmont
New Belgium Brewing Co.
Fort Collins
Odell Brewing Co.
Fort Collins

Old Chicago
Aurora, Boulder, Broomfield, Colorado Springs (3), Denver (3), Fort Collins (2), Grand Junction, Greeley, Lakewood, Littleton, Longmont, Silverthorne, Superior, Thornton, Westminster, Wheat Ridge

Oskar Blues Grill & Brewery
Lyons
Phantom Canyon Brewing Co.
Colorado Springs
Pumphouse Brewery & Restaurant
Longmont
Redfish New Orleans Brewhouse
Boulder
Redstone Meadery
Boulder
Rock Bottom Brewery
Denver, Englewood, Westminster
Rockyard Brewing Co.
Castle Rock
Smugglers Brewpub & Grille
Telluride
Walnut Brewery
Boulder
Wynkoop Brewing Co.
Denver

CONNECTICUT

Cambridge House Brew Pub
Granby

Hops Grillhouse and Brewery
Manchester, Newington
Willimantic Brewing Co./
Main Street Café
Willimantic

DELAWARE

Dogfish Head Brewings & Eats
Rehoboth Beach

Dogfish Head Craft Brewery
Milton
Iron Hill Brewery and Restaurant
Newark, Wilmington

Stewarts Brewing Co. Bear

FLORIDA
Dunedin Brewery
Dunedin
Hops Grillhouse and Brewery
Boynton Beach, Bradenton, Fort Myers, Gainesville, Miami, Ocala, Palm Harbor, Pembroke Pines, Pompano Beach, Sanford, West Palm Beach

HAWAII
Kona Brewing Co.
Kailua-Kona
Maui Brewing Co.
Lahaina-Maui

IDAHO

Old Chicago
Boise (2)

ILLINOIS
Brass Restaurant & Brewery
South Barrington
Elmwood Brewing Co.
Elmwood

Flossmoor Station Brewing Co.
Flossmoor
Goose Island Beer Co.
Chicago (2)

Mickey Finns Brewery
Libertyville

Old Chicago
Rockford
Rock Bottom Brewery
Chicago, Warrenville
Windy City Grill & Tap
Orland Park

INDIANA
Buffalo Wild Wings Downtown
Indianapolis

Rock Bottom Brewery
Indianapolis
Upland Brewing Co.
Bloomington

IOWA

Court Avenue Brewing Co.
Des Moines

Old Chicago
Bettendorf
Raccoon River Brewing Co.
Des Moines

Rock Bottom Brewery
Des Moines

KANSAS

Old Chicago
Lawrence, Lenexa, Overland Park, Wichita (3)

MARYLAND
Dogfish Head Alehouse
Gaithersburg
Hops Grillhouse and Brewery
Owings Mills

Rock Bottom Brewery Bethesda

MASSACHUSETTS
Boston Beer Co.
Boston
Cambridge Brewing Co.
Cambridge
Rock Bottom Brewery
Boston, Braintree
Watch City Brewing Co.
Waltham

MICHIGAN
Arbor Brewing Co.
Ann Arbor
Big Buck Brewery & Steak House
Auburn Hills, Gaylord
Hereford & Hops Steakhouse & Brewpub
Escanaba
Saugatuck Brewing Co.
Saugatuck

MINNESOTA
Old Chicago
Apple Valley, Blaine, Duluth, Eagan, Eden Prairie, Minneapolis (2), Minnetonka, Plymouth, Roseville
Rock Bottom Brewery
Minneapolis

MISSOURI
75th Street Brewery
Kansas City
McCoy's Public House
Kansas City
Old Chicago
Columbia

NEBRASKA
Old Chicago
Lincoln (2), Omaha (4)
Thunderhead Brewing Co.
Kearney
Upstream Brewing Co.
Omaha

NEVADA
BJ's Pizza & Grill
Las Vegas
Chicago Brewing Co.
Las Vegas
Rosemary's Restaurant
Las Vegas

NEW HAMPSHIRE
The Portsmouth Brewery
Portsmouth

NEW JERSEY
Ale Street News
Maywood
Triumph Brewing Co.
Princeton

NEW MEXICO	NORTH CAROLINA	Rogue Ales Brewery	Squatters Pub Brewery
Blue Corn Café & Brewery Santa Fe	Barleys Taproom in Asheville Asheville	(includes Brewer's on the Bay) Eugene, Newport (2), Portland	Salt Lake City, Salt Lake Airport
Chama River Brewing Co. Albuquerque	Hops Grillhouse & Brewery Matthews	Uinta Brewing Co. Salt Lake City	
Il Vicino Brewing Co. Albuquerque	OHIO	PENNSYLVANIA	VIRGINIA
NEW YORK	Brew Kettle, Taproom & Smokehouse Strongsville	Barley Creek Brewing Co. Tannersville	Hops Grillhouse & Brewery Alexandria, Richmond
Brooklyn Brewery Brooklyn	Rock Bottom Brewery Cincinnati, Cleveland	Iron Hill Brewery & Restaurant Media, North Wales, West Chester	Rock Bottom Brewery Arlington
CH Evans Brewing Co. at the Albany Pump Station Albany	Willoughby Brewing Co. Willoughby	Rock Bottom Brewery King of Prussia, Homestead	VERMONT
Crooked Rooster Brewpub Watkins Glenn	OREGON	Triumph Brewing Co. New Hope	Rock Art Brewery Morrisville
Ellicottville Brewing Co. Ellicottville	BJ's Pizza & Grill Eugene	SOUTH CAROLINA	WISCONSIN
FX Matt Brewing Co. Utica	BJ's Restaurant & Brewery Portland (2)	Barleys Taproom in Greenville Greenville	Hereford & Hops Steakhouse & Brewpub Wausau
Lake Placid Pub & Brewery Lake Placid	Deschutes Brewery & Public House Bend	Hops Grillhouse & Brewery Spartanburg	Milwaukee Ale House Milwaukee
Lake Placid Craft Brewing Co. Plattsburgh	Laurelwood Public House & Brewery Portland	TENNESSEE	Northwoods Brewpub Eau Claire
Rooster Fish Brewing Co. Watkins Glenn	Old Chicago Beaverton, Gresham, Portland (2)	Boscos Brewing Co. Memphis, Nashville	Old Chicago Madison
Southampton Publick House Southampton	Pelican Pub & Brewery Pacific City	TEXAS	Rock Bottom Brewery Milwaukee
Wildflower Café Watkins Glenn	Rock Bottom Brewery Portland	BJ's Restaurant & Brewhouse Addison, Houston, Lewisville	Stone Cellar Brewpub Appleton
		UTAH	WYOMING
		Bohemian Brewery & Grill Salt Lake City	Snake River Brewing Co., Snake River Brewpub Jackson Hole, Lander
		Moab Brewery Moab	

For the most up-to-date pub list, visit [www.beertown.org!](http://www.beertown.org)
All discounts are for AHA members of legal drinking age only.

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org



Fermenator™ Stainless Fermentor



7, 14.5 & 27 gal sizes!



- More capacity!
- Pressurizable for CO₂ pumping
- 3pc ball valves
- Folding handles

ThruMometer™ In-line Thermometer



- Set your counterflow chiller to ideal fermentation temp
- Super easy to sanitize
- Saves water!

BrewMometer™ Brewing Thermometer



- Unique "made-for-brewing" dial face
- Best weldless design available
- 1/2" NPT connection available too!

BLICHHMANN
engineering

www.BLICHHMANNENGINEERING.COM

Therminator™ Stainless Wort Chiller

- Fast! - chill 10 gal in 5 min!
- Fastest and smallest chiller available!
- Ultra low restriction
- Ideal for southern climates!



BeerGun™ Bottle Filler

Revolutionary design!

- Fill bottles from kegs
- One hand intuitive operation
- Low foaming
- Easy to clean
- Stainless construction
- Superior to counter-pressure!!



QuickConnector™ Stainless Quick Connect Fittings

- No tools reqd to install !
- No crevices to hide bacteria
- Fits all 1/2" NPT fittings
- 3/8 and 1/2" hose sizes



Malt Extract Beers

Malt extract is a great way to save time when you are brewing on a tight schedule, and with modern dehydrating processes, both dry and syrup forms are of exceptional quality.

One of the most common questions homebrewers ask when they are starting out is, "Can I make this style of beer using extract?" The fact is, just about any recipe that is made with grain can be converted to an extract recipe, and several high-gravity styles (Scotch ales, old ales, barley-wines, etc.) that might pose a problem for all-grain brewers due to limited mash tun volume can be made far more easily with malt extract. Many brewers are concerned that very light-colored beers cannot be duplicated using extract, since dehydrating methods incorporating heat tended to darken and caramelized malt sugars, but with extra light malt extracts, this is becoming much less of a concern.

Using malt extract is a wonderful convenience for all but the geekiest of control freak brewers. Of course, when you get to the point where you are making small adjustments in water chemistry to bring out hop or malt flavors, you might be ready to abandon extracts and take the plunge into all-grain brewing—with any added convenience in brewing, you are sacrificing an element of control. The total dissolved solids of the water used to make one brand of extract may be drastically different from those of another brand, and those solids don't go away during the dehydrating process. In fact, you'll be compounding them with your own, unless you use distilled or filtered water to rehydrate your extract.

Fortunately, only the pickiest beer critic will notice that you may have a few too many parts per million of potassium chlo-

ride in that Canadian Cream Ale. So if you just want to make a great beer with minimum hassle, malt extract is the way to go.

When making malt extract, the malting company does the initial mashing and draining off of the sweet wort for you. Once malt starches are converted to maltose, the wort is drawn off, pasteurized and run into vacuum chambers for dehydration. By using a partial vacuum, lower temperatures are required to boil off water vapor, so the wort sugars are not caramelized nearly as much as they would be with a boil under normal atmospheric pressure. That means a lighter extract can be produced. From this point, however,

two final malt extract products are possible: dry and liquid.

There are advantages and disadvantages to each. Malt syrup is approximately 20 percent water, so it is heavier to ship, and therefore can be costlier. However, because of its liquid form, malt extract producers can go one step further with the brewing process and add hop extracts. Iso-alpha acid hop extracts are added along with hop oils to give a complete hop character to the malt syrup, making it even easier for brewers. Of course, when hop character and bitterness come pre-packaged with the malt, the brewer obviously has far less control over the beer he

Coopers Rye Beer

Based on a recipe by Mark Henry.

Ingredients

for 5 U.S. gallons (19 liters)



I can 0.75 lb	Coopers Light Malt Extract (0.34 kg) Coopers Light Dry Malt Extract
2.0 lb	(0.91 kg) Rye Malt
1.0 lb	(0.45 kg) Six-Row Pale Malt
0.5 lb	(0.23 kg) Munich Malt
1.5 oz	(43 g) Mt Hood leaf hops, 6.5% alpha acid (30 min)
1.0 oz.	(28 g) Hersbrucker leaf hops, 5.75% alpha acid (5 min)

1.25 C	Coopers Ale Yeast (290 ml measure) Coopers Light Dry Malt Extract for bottling
---------------	---

Original Specific Gravity: 1.049

Final Specific Gravity: 1.012

IBUs: 25

ABV: 4.9%

Directions

Heat 5.5 quarts of water to 165-170° F. Mix in six-row, rye and Munich malt and stabilize temp at 148-155° F. Hold temp for 45 minutes to 1 hour. Meanwhile, heat 7 quarts of water to 170-175° F. Strain mini-mash into your brew pot and slowly rinse grains with 7 quarts of water. Add malt extract, then bring to soft boil. Add Mt Hood hops. Boil for 30 minutes total. With five minutes remaining in the boil, add Hersbrucker hops. After boil, strain into fermenter with 2.5 gallons of cold water. Add water if necessary to make 5 gallons. When temperature is below 70° F, pitch yeast and ferment using your preferred method. When fermentation is complete, add priming extract and bottle.

or she ends up with. That may be great news for newbies, but once you get a few of these mix-and-go beers under your belt, you may want to stick with unhopped extract and explore the joys of adding hops yourself.

The dry malt extract manufacturing process also starts with sweet, converted wort, but it is then sprayed through an atomizer into tiny droplets. These droplets enter a warm, dry air chamber and are kept in suspension by air currents until all moisture evaporates and the dried malt particle settles to the floor. Dry malt extract, or DME, is not hopped, since the hop compounds would be lost during the dehydrating process. Because it contains none to begin with, more water is necessary to rehydrate dry malt extract than malt extract syrup. Compared to the syrup form, 1 pound of dry malt extract would roughly equal 1.2 pounds of syrup, and conversely, 1 pound of syrup would roughly equal 0.8 pounds of dry extract. It is therefore very important in recipes to know which form of malt extract is called for.

One great thing about dry malt extract versus liquid is that it tends to dissolve much more quickly into the brewing water. Syrup goes straight to the bottom of your kettle, and requires more work to get into solution. It is unfortunately all too common for brewers to forget to turn off the heat when adding extract (this should be done with both syrup and dry forms, by the way) to prevent it from burning on the bottom.

Both forms of extract are usually available in bulk, and often come in different "flavors," namely extra light, light or golden, amber and dark. While the darker malt extracts are great to experiment with when starting out, as with hopped extract, you may find that they give you less freedom over the end product. What was used to darken the malt? How fermentable is the coloring? How will the flavor nuances of one brand of amber extract differ from those of another brand? For these reasons, many brewers familiar with using malt extracts prefer to stick to light or extra-light syrups or DME, and use the wide variety of specialty grains to achieve darker colors and flavors.



CLUB ONLY COMPETITION

Categories 1-23* Extract Beers

This competition covers all BJCP beer styles (Categories 1-23)*. Dry or liquid extract must make up more than 50 percent of fermentables.

Entries are due by May 12. Judging will be held on May 20.

Shipping Address:

Culver City Home Brewing Supply
4358-1/2 Sepulveda Blvd.
Culver City, CA 90230
Phone: 310-397-3453

Hosted by Tim Bardet and Pacific Gravity of Culver City, Calif. For more information, contact Tim Bardet at Treasurer@PacificGravity.com or 310-472-5098.

One final advantage to using malt extract is consistency. The best malt extract producers have far more control over their production process than the very best all-grain homebrewer, or even craft brewer. You can rest assured that the light dry malt extract you used for that amazing pale ale you brewed last March is going to be of the same quality if you brew it again this year. You don't have to worry about mashing in too hot and producing an insufficiently fermentable wort, which will in turn cause your final gravity to be too high, which will throw off that delicate malt/hop balance that you nailed perfectly last time. And all because the garage where you keep your grain wasn't as cold the evening before as you thought, and you overcompensated on your strike temperature.

Visit our online store and catalog at www.grapeandgranary.com or call 800-695-9870 for a free catalog. You'll be glad you did!

Grape and Granary, Akron OH USA



'Your Hometown Brewshop on the Web'

FEATURING

Fresh Ingredients
Wide Selection
Fast Shipping
Expert Advice
Easy Ordering
Phone or Web!

So revel in the delicious simplicity of malt extract, and fine-tune those recipes to perfection!

Amahl Turczyn Scheppach is former associate editor of Zymurgy.



SABCO INDUSTRIES, INC

(SINCE 1961)

Homebrew Equipment 'Specialists'



Great Kegs!
'Brand-New..
or 'Like-New'



Great Brew-Kettles
like our popular
'Universal Kettle'



Great Equipment
Like the amazing RIMS
'Brew-Magic' Brewing System

WWW.KEGS.COM

EMAIL: sabco@kegs.com
PHONE: 419-531-5347

American Homebrewers Association 28th Annual
NATIONAL HOMEBREWERS CONFERENCE

June 22-24, 2006 · Wyndham Orlando Resort · Orlando, FL

Gator Tails & Better Ales

**REGISTER BY
MAY 15 AND SAVE \$\$**

American Homebrewers Association
members receive registration discounts.
Join or renew today at www.beertown.org.

**20 homebrew
seminars to
choose from!**

Conference Events

Thursday, June 22

Pro-Brewers Night

Friday, June 23

Luncheon & Keynote Address
with Greg Koch, Stone Brewing Co.

Club Night

Saturday, June 24

Grand Banquet
28th Annual AHA National Homebrew
Competition Awards Ceremony



Thanks to this year's organizing clubs!

www.AHAConference.org

BREWERS ASSOCIATION

888.822.6273 / +1.303.447.0816

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org



American Homebrewers Association 28th Annual
NATIONAL HOMEBREWERS CONFERENCE

June 22-24, 2006 · Wyndham Orlando Resort · Orlando, FL



REGISTER BY MAY 15, 2006 AND SAVE MONEY!

CONTACT INFORMATION

Send completed form to: AHA, Attn: Conference Registration, PO Box 1679, Boulder, CO 80306-1679 or FAX to +1.303.447.2825.

First Name _____ Last Name _____ Club/Company _____

Guest First/Last Name _____

Daytime Phone _____ Address _____ City _____

State/Zip _____ AHA Member# _____ E-mail _____

Vegetarian Meal Request

REGISTER ONLINE AT
WWW.AHACONFERENCE.ORG

REGISTRATION OPTIONS

Prices increase after May 15, 2006

Member Rate

Non-Member Rate

American Homebrewers Association Membership (1 year) **\$38** **\$38**

Join or renew. See the difference you save when you join!

Full Conference **\$225** **\$263**

(includes all conference seminars, Pro Brewers Night, Club Night, Keynote Luncheon, Grand Banquet/Awards Ceremony & Hospitality Suite Access)

After May 15 - \$255

Price includes \$38
AHA membership
After May 15 - \$293

Social Package **\$160** **\$198**

(includes Pro-Brewers Night, Club Night, Keynote Luncheon, Grand Banquet/Awards Ceremony & Hospitality Suite Access)

After May 15 - \$180

Price includes \$38
AHA membership
After May 15 - \$218

Thursday Seminars Only **\$35** **\$40**

After May 15 - \$40

After May 15 - \$45

Pro-Brewers Night - Thursday Evening **\$40** **\$45**

(Microbrewery Festival)

After May 15 - \$45

After May 15 - \$50

Friday Seminars Only **\$50** **\$60**

After May 15 - \$55

After May 15 - \$65

Keynote Luncheon - Friday **\$45** **\$50**

After May 15 - \$50

After May 15 - \$60

Club Night - Friday Evening **\$35** **\$40**

After May 15 - \$40

After May 15 - \$45

Saturday Seminars Only **\$50** **\$60**

After May 15 - \$55

After May 15 - \$65

Grand Banquet/Awards Ceremony Only - **\$70** **\$80**

After May 15 - \$80

After May 15 - \$90

AHA members receive
registration discounts.
Join or Renew Today.

TOTAL _____

METHOD OF PAYMENT

Cash Mastercard Visa American Express Check Check # _____

Credit Card Number _____ — — — Exp. Date _____

Name on the card _____ Signature _____

Reproduce this form for additional registrants. Each member may register one guest at the member rate. Call 888.822.6273 or 303.447.0816 x145 with questions regarding registration. For hotel reservations at the Wyndham, call 877.999.3223 or 702.734.5110 and reference American Homebrewers Association for special room rate of \$109 if booked before May 28, 2006.

For more information, visit www.AHAConference.org

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org







Et Tu, Brut:

Brewing the *Champagne* of Beers

By Drew Beechum

For more than a generation, the “champagne of beers” failed to live up to its billing. No leap of imagination could conjure a magical beverage from that pale yellow, ghostly beer. That all changed with the release of Malheur Brut and Deus de Bosteels, strong spicy Belgian ales that transcended slogans and delighted the drinker with an explosion of aromas and spices and a dry, sparkling mouthfeel. These new “brut” beers have proven to be a big hit with beer enthusiasts and wine drinkers.

Brouwerij de Landtsheer and Brouwerij Bosteels employ the laborious and traditional *méthode champenoise* to put the fizz in brut and it shows in the wine-like price of these interesting bottles.

The combination of intense flavors, traditions and techniques evinced an irresistible draw to this homebrewer’s kettles. Because of the many steps involved, a large batch of brut makes a fun club project. Brewing a brut takes a little extra work and time, but when you’re popping the corks and wowing everyone—even your non-beer-drinking friends—it’s worth the effort.

Brewing your own brut beers involves demystifying and simplifying the steps of *méthode champenoise*.

Basics of the Style

The brut beer concept is still evolving, but already it carries the Belgian nonchalance toward style categorization. Invariably, the beers are bone-dry, complex and spicy with an alcohol level between 10 and 12 percent ABV. Color ranges from the pale hazy straw of Deus de Bosteels to the deep brown Malheur Black Chocolate. The nose is filled with aromas of the Far East: cinnamon, allspice, bergamot, orange, lavender, vanilla, ginger and more. The buzz of the aroma is pushed by the prodigious carbonation, often 3.5 to 7 volumes or more of CO₂.

Bruts finish dry with final gravities around 1.010 in many examples. Normally, beers this dry and high in alcohol have a thin, hot, unpleasant body that falls flat and harsh in the mouth, but the vigorous carbonation puffs up the body.



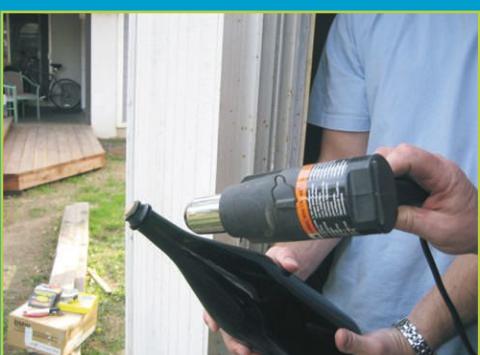
Once the bottles have rested inverted for two months, it is time to remove the yeast.



Prepare your freeze bath with a half-gallon of acetone and a portion of a 3-pound block of dry ice.



To create an ice plug, take a still inverted bottle and place the neck into solution.



You can use a heat gun to loosen the plug. Use the lowest setting of your gun or hairdryer—don't shock it into breaking.

A final touch of sweetness, introduced by a post-bottling addition of sugar, closes the beer.

Designing and Brewing a Brut

After thorough, repeated tastings of commercially available brut beers, the Maltose Falcons gathered a crew to design our own. After much debate, my fellow brewers—Kent Fletcher, Cullen Davis, Jim Kopitzke and Jonny Lieberman—and I settled on our approach to our pale brut beer, Brut du Faucon, and our sequel, the dark chocolate Brut du Faucon Noir.

The guiding philosophy with both brut recipes is to make beers that start around 1.085 and finish around 1.010 with a light finish and strong aromatic profile. To that end, the beers center around a grain bill of Belgian Pilsener malt with 10 to 20 percent sugar to decrease residual gravity. Use the most fermentable extract you can find. *Champenoise* treatment requires that the beer be 10 to 11 percent to ensure successful conditioning, so resist the temptation to go larger.

Specialty grains serve to provide accents to yeast and aroma characteristics. Aromatic and Caramel Pils malts are used in Brut du Faucon to balance the sweetness of the lavender and ginger additions. In the Noir, Special B and Carafa® malt and turbinado sugar build the base of a strong chocolate character reinforced by vanilla and mace additions.

In our approach to brut, we keep the mash schedule to a simple single infusion mash that runs cooler than most mashes, 148° F for 60 minutes. The goal is to produce more simple sugars for the yeast. While you could use a more traditional Belgian multi-step mash, we chose to skip the protein rest to maximize the headspace qualities of the beer.

Hops are kept simple: a few small additions of continental hops, Saaz and Styrian Goldings complement the beer's bold aromas. For a small punch of flavor we add small quantities of spices at flameout, preferring to derive the bulk of the aroma from our bottling syrup and yeast strain choice.

Because we're dealing with high alcohol and pressure and long conditioning times, a

large and healthy yeast culture is imperative at the start. Using a yeast cake from a previous lower gravity batch ensures a high quality product. The original Brut du Faucon used a blend of Chimay, Dupont, De Konick and Unibroue strains to drive a complex yeast character. Fellow Falcon and yeast expert to the stars, Dr. MB Raines, provided the blend. Since the Noir is a more heavily spiced beer, we chose to simplify with one yeast strain that shows high alcohol tolerance and stability, Wyeast 3787 Trappist High Gravity.

Putting the Bubbles In

Legend places the discovery of champagne and the eventual development of *méthode champenoise* at the feet of Benedictine monk Dom Perignon and his experiences with bottles of sweet wine blowing up in the cellar of the Abbey of Hautvillers. His cry: "Come quickly, I am tasting the stars!"

Truth be told, *méthode champenoise* requires only a few steps beyond the regular bottling practiced by brewers. The goal of each step is to produce a highly carbonated bottle-conditioned beer that is sediment free, yet bright and smooth tasting from the prolonged exposure to the yeast. Enticingly, it involves dry ice and small explosions.

Bottling

Since we're dealing with higher carbonation pressures, we need to use domestic sparkling wine bottles with deep punts in the bottom instead of domestic longnecks.

Beware of bottles with flat bottoms! They are unsafe at high pressures.

Imported champagne bottles take European crown caps. Brut brewing provides a stellar time to go larger with the bottles. Small 375-milliliter bottles lose too much of the beer during disgorgement. Bigger bottles make an impressive, festive show. Both 750-milliliter and 1.5-liter bottles are readily available at retail. However, bottles of 3 liters or greater currently must be scrounged from bars and restaurants or wedding caterers.

With the higher carbonation of the style, these beers use substantially more sugar per batch. To achieve 3.5 to 7 volumes of CO₂

as desired, plan on using between 7 to 14 ounces (by weight) of brewer's sugar per 5 gallons bottled. Exact measurements depend upon the fermentation temperature and volume.

Dissolve the sugar into a pint of water and bring to a boil for 15 minutes. This is the perfect time to add extra flavor and aroma to the brew by adding spices to the syrup. Remember that these additions will be intensified by the carbonation, so use a light hand.

Blend the sugar syrup into the finished beer and bottle as usual into the sparkling wine bottles. Double-check the seal on the caps before putting the bottles away.

Place the bottles upside down in the case boxes and lay the boxes on their sides for conditioning. Store for two months at cellar temperatures.

Riddling

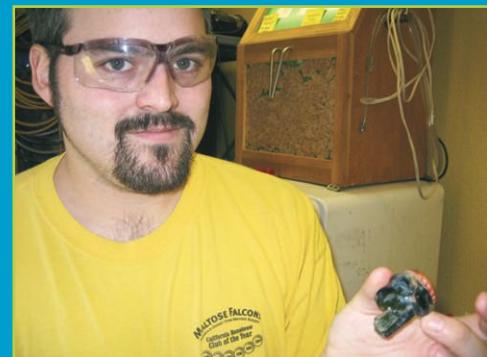
After months of conditioning, the bottles of brut will have an impressive sediment layer. The removal process starts with a

systematic spinning of sediment in the bottle, called "riddling." The goal is to slowly move the yeast down the bottle to the crown cap while inverting the bottle.

Traditional riddling is done on specially designed A-frame racks that are beyond the necessary investment level for a homebrewer. Instead, we follow a modern variation, "case riddling," using the case boxes. Home winemakers sometimes use plastic shelving or cut PVC pipes to hold the bottles for riddling, but we have not tested these variants.

Every few days pick up each bottle and give it a quick, hard spin. Over a month, as the bottles are spun, the full case boxes are slowly angled so that the bottles finally rest on their caps. The bottles continue to be spun until the sediment is brought into the neck.

By slowly moving the bottles fully upside down while constantly sweeping the yeast away from the bottle sides, we form a tight plug of yeast in the neck, making the next step easier.



Remember to wear safety glasses!



Brace the bottle against your leg, point in a safe direction and remove the crown cap.

Premium Beer Kits Include **PREMIUM YEAST**

Before you buy your next beer kit, make sure it includes genuine Danstar dry yeast. Danstar yeast is true brewing yeast, selected for proven performance and superior flavor. Every batch of Danstar yeast is tested to insure it meets the most stringent standards of quality and purity, giving brewers the unmatched consistency and ease-of-use that only dry yeast can provide.

Bring out the best in your beer. Visit us at Danstar.com for the complete line of Danstar brewing products.

Get The Dry Yeast Advantage with Danstar.



www.DANSTAR.com





With little to no encouragement, the yeast plug will fly out of the bottle along with ice and a little beer.



Using a syringe or pipette, top up the bottle with the dosage liquid and cork.

This whole process should take you less than 10 seconds!



Be careful when hammering the cork.

Freezing, Firing and Filling

Once the bottles have rested inverted for two months, we are ready to remove the yeast. To do this, we employ dry ice and several helpful quick hands to create a small ice plug in the bottleneck that is

shot out of the bottle by removing the crown cap. Disgorgement day is the best time to enlist your fellow brewers as the work is fast and furious.

Before starting, get the beer cold (35 to 40°

Brut du Faucon Noir

Inspired by Malheur Black Chocolate, a dry dark chocolate and vanilla spiced Belgian ale with a body boosted by the voluminous carbonation.

Ingredients for 5.5 U.S. gallons (21 liters)

10.00 lb	(4.54 kg) Belgian Pilsener Malt
1.75 lb	(0.79 kg) Cane Sugar
0.75 lb	(340 g) Wheat Malt
0.50 lb	(226 g) Turbinado Sugar
0.50 lb	(226 g) Munich Malt
0.50 lb	(226 g) Special B Malt
0.25 lb	(113 g) Carafa® Chocolate Malt
1.0 oz	(28 g) Styrian Goldings, 4.0% AA, 60 min
0.40 oz	(11.3 g) Czech Saaz, 3.5% AA, 20 min
	1/2 vanilla bean and 1 cinnamon stick at knockout
	Wyeast 3787 Trappist High Gravity Yeast

Original Target Gravity: 1.084

Final Target Gravity: 1.008

IBUs: 15

SRM: 18.4

Directions

Mash at 147° F (63° C) with 15 quarts of water for 90 minutes.

Prime with 13.70 ounces of corn sugar boiled with 1/8 ounce vanilla, 1/4 ounce cinnamon, 1/8 ounce allspice and 1/3 ounce mace in champagne bottles (5.5 volumes).

For extract brewing, replace Pilsener Malt, Wheat Malt and Munich Malt with 9 lbs. of light liquid malt extract.



Secure the cork with a wire champagne cage.



A finished bottle of Brut du Faucon.



Members of the Maltose Falcons enjoy the fruits of their labor. Left to right: Drew Beechum (president), Derreck Bourdon (former professional brewer, BJ's), Jonny Lieberman (newsletter editor), Kent Fletcher (treasurer and brut caretaker).

F) to help hold carbonation in solution when the bottles are violently vented. Remember to carefully move the bottles to avoid disturbing the sediment or breaking the glass.

As the beer chills, prepare a “dosage” liquid to top up your bottles after opening. Champagne tradition dictates a mix of wine, cognac and sulfites. For the bruts we’ve used sugar syrups and beer to replace the liquid lost while opening the bottles. The dosage is your final opportunity to add aroma and flavor to the beer.

Traditionally, disgorgement utilizes a mixture of salt and ice to freeze the neck solid, but in our tests we produced a low temperature of 19° F, not nearly cold enough. We suggest taking advantage of dry ice and acetone, a combination that chills to -90° F. Prepare your freeze bath with a half-gallon of acetone and a portion of a 3-pound block of dry ice. Keep feeding small blocks of dry ice to keep the acetone bubbling.

Be very careful not to handle dry ice or the bath with bare hands! Remember to wear safety glasses!

To create an ice plug, take a still inverted bottle and place the neck into solution. Watch carefully and pull when an ice plug

has surrounded the yeast, about one to two minutes. Don’t let the plug form below the bell of the neck.

Quickly brace the bottle against your leg, point in a safe direction away from brewing partners, small animals and children, and remove the crown cap. With little to no encouragement, the yeast will fly out of the bottle along with the ice and a little beer. Using a syringe or pipette refill the bottle with the dosage liquid and cork.

MÉTHODE CHAMENOISE CHEAT SHEET

- Brew a beer between 1.080-1.085 that drops to 1.010.
- Bottle in champagne bottles with 7 to 14 ounces of sugar per 5 gallons.
- Condition for two months on bottle side in the case boxes.
- Over a month, spin each bottle while slowly raising the case boxes to vertical.
- Rest for two months upside down.
- Chill beer.
- Freeze neck in a mixture of acetone and dry ice.
- Pop the cap and ice plug.
- Refill the bottle with a dosage liquid.
- Cork, cage and foil.
- Let sit for another two weeks.

This whole process should take you less than 10 seconds!

Secure the cork with a wire champagne cage, twisting with pliers to close the cage around the cork top and the bottle lip. For the final decoration slide a champagne foil over the top and crimp it into place.

While it’s true you could use another crown cap to seal the bottle, part of the romance of brut is the presentation of a caged cork and the “pop” on *(continued on page 31)*

www.kegkits.com
Your homebrew kegging and draft beer keg source

Hardware / Bulk HOPS / Pony Pumps

CO2 Regulators / Temp Controllers

New Cornelius Kegs / Refurbished Cornelius Kegs

All Metal Beer Towers / Briess Malt Extract

Kegging Supplies / White Labs Yeast

CO2 Tanks / Keg Coolers / Kegerator Kits

Draft Beer Taps

BRIESS CBW
Port-Malt Extract
Non-Hoppy
Lager Malt
PILSEN Light

www.kegkits.com



*Along the
Bamberg beer trail*

BY JIM PARKER



Many German cities seem to go hand-in-mug with a single style of beer: Köln with Kölsch, Düsseldorf and altbier, Munich and Oktoberfest lager. None, however, seems as intimately connected as Bamberg and its seductively smoky rauchbier.

At least that's what I am thinking as I slurp my second half-liter of the night at the Spezial Beerkeller, a room where the cigarette smoke in the air is thicker than the delicate smoked malt flavor of my beer.

It is late on day six of an eight-day tour, arranged by the Bavarian Brewers Federation and Bavarian Department of Agriculture for 15 North American beer writers. Our bus rolled into town at 0-dark-30 after stops that day in Regensburg, Wolnzach and Buttenheim. But despite the hour and the number of beers already under our belts, most of the merry band of beer scribes are still game for a late-night pub crawl. Some follow tour leader Horst Dornbusch to the Schlenkerla Keller and Ambräusianum brewpub, while the rest of us split off, following Lew Bryson to Spezial and Brauerei Fassla.

As we learned the following day, such beer trekking is easy in Bamberg, a city of 70,000 that covers only about 21 square miles but is home to 10 breweries.

Bamberg Cathedral



THE SEVEN HILLS OF BAMBERG

Bamberg is a city as rich in history as it is in beer. Archeologists have unearthed evidence of a large fortress on what is now called Cathedral Hill dating back to the 7th century. When Henry II was

elected king of Germany in 1002, he established Bamberg as the center of the Holy Roman Empire of German Nations, citing the fact that Bamberg, like Rome, is built upon seven hills. Henry and his wife Kunigunde are both buried in the Cathedral of St. Peter and St. George that stands on the site of the ancient fortress.

The second bishop of Bamberg, Suidger, was elected Pope as Clement II and served

A view of Bamberg and the Regnitz river



until his death in 1047. The church's influence is still strongly evident with the city's many ancient cathedrals and churches that from the air form a cross. Religious icons can be found on many of the buildings in Old Town, which is on the United Nations Educational, Scientific and Cultural Organization's list of World Heritage sites.

Unlike many German cities, Bamberg was only slightly damaged during World War II, so many of its historic buildings, churches and castles still line the narrow, hilly streets or the banks of the Regnitz and Main rivers.

The original Town Hall, built on an artificial island in the middle of the river Regnitz in 1386, is still standing. It was constructed to mark the border between the clerical city on the hill and the merchant city below.

Statues and fountains dot the city, including the famed "Bamberg Horseman," believed to depict St. Stephen of Hungary. Erected in 1230, it was the first life-size statue of a rider since the Ancient World. A fountain of Neptune, which the locals call "Goblmo" (fork man), is a popular gathering place in Old Town.

The link between Bamberg and beer is nearly as old as its connection to the church. In 1093, Canon Oudalricus proclaimed in his will that beer be handed out to the poor each year on the anniversary of his death.

In 1122, Saint Otto II granted the monks of the Benedictine abbey on St. Michael's Hill, just a short hike from Cathedral Hill, the right to brew beer. The old brewery now houses the Franconian Brewery Museum.

SERIOUS



Over 1700 Beer, Mead, & Winemaking Products
Same Day Accurate Order Fulfillment
800 681-2793 www.northernbrewer.com

Tom Dalldorf enjoys a beer with dinner at Schlenkerla



ANCIENT TRADITIONS, MODERN BREWERIES

Within Bamberg's city limits are 10 breweries, the oldest dating back to 1405, the newest founded in 2004. Those breweries produce more than 60 brands of beer. There are 140 more breweries on the outskirts of town and 300 within an hour's drive.

The breweries are evenly split between those east of the river Regnitz and those on the west. The Bamberg tourism office offers self-guided walking and bus tours of the city's breweries, complete with a backpack, guidebook, stein, bottle opener, postcard, beer mats and five beer vouchers for 20 Euros (about \$24 U.S.) You can choose either the breweries west of the river or those on the eastern shore.

On either side, you will get a taste of Bamberg's famed rauchbier—Spezial on

the east side, Schlenkerla on the west—as well as a selection of weizens, vollbiers, Pilseners, Märzens and schwarzbiere. You can't go wrong on either shore.

WEST OF THE RIVER

The breweries on the west side of the Regnitz are a bit more spread out, but the Brewery Trail guide tells you exactly which buses to take and the locals are very friendly and helpful—especially when they spot tourists with the distinctive Brewery Trail backpack.

The Westside tour starts with **Greifenklau**, the smallest of Bamberg's old breweries. The brewery was founded in 1719 by the Count von Greiffenclau. It features a small beer hall with an outdoor beer garden with a view of Altenburg Castle.

The brewery's flagship, Greifenklau Lagerbier, is a pale, hoppy "vollbier," or German ordinary lager. It has an initial gravity of 12 °Plato (1.048 specific gravity). The brewery also produces a traditional weizen and releases a bock each October.

A brisk 10-minute walk from Greifenklau will lead

you to the gasthaus of **Klausterbrau**, founded in 1533. The brewery is most noted for its dark Klosterbrau Bamberger Schwarza, a deep, roasty schwarzbier with an original gravity of 11.8 °Plato (1.048 SG). The brewery also produces a Pilsener, vollbier, weisse and Maibock.

The gasthaus usually has all of the current beer offerings on tap, as well as a hearty selection of beer snacks. But be forewarned, the brewery and gasthaus are closed on Wednesday when the staff takes its Ruhetag, or rest day.

From Klausterbrau, you can either go straight to Schlenkerla or take a detour up Cathedral Hill. There you can tour the gothic Cathedral of St. Peter and St. George, see the Bamberg Horseman and wander through Cathedral Square and the rose garden with 4,500 rosebushes before walking through the archway of the cathedral's main gate and over to the brewery museum.

The museum is packed with the artifacts of more than a millennium of brewing in the Franconian region—everything from ancient mashtuns, kettles, cool ships used to cool wort before heat exchangers were invented, and old cooperage. There is even an old wood-fired potstill once used to make beer schnapps.

**NEW FROM YOUR
FRIENDS AT
BRECKENRIDGE
BREWERY**
**VANILLA
PORTER**
**SELDOM SEEN
NEVER DUPLICATED**
BRECKBREW.COM

Smokey the Beer

Bamberg-style Smoked Beer

Ingredients

for 5 U.S. gallons (19 liters)

8.0 lb	(3.63 kg) Weyermann Smoked malt
2.0 lb	(0.9 kg) Weyermann CaraMunich® malt
0.5 lb	(226 g) Weyermann CaraHell® malt
0.5 oz	(14 g) Hallertau Hersbrucker hops, 4.75% Alpha Acid, 60 minutes
0.5 oz	(14 g) Hallertau Hersbrucker hops, 4.75% Alpha Acid, 30 minutes
1.0 oz	(28 g) Hallertau Hersbrucker hops, 4.75% Alpha Acid, 15 minutes
	Wyeast 2206 Bavarian Lager yeast

Original Target Gravity: 1.060

Final Target Gravity: 1.010

IBUs: 22

Directions

Although most Bamberg breweries use a decoction mash, you can get good results with a single infusion mash at 152° F (66° C). Hold mash at 152° F (66° C) for 60 minutes, then sparge with 168° F (76° C) water to bring your volume in the kettle to 6.5 gallons. Boil for 60 minutes, adding hops at prescribed intervals. Chill to 60° F (16° C) and pitch yeast. Ferment for two weeks at as close to 55° F (15° C) as possible, then rack into secondary and lager for six weeks at 36° F (2° C). Package, serve and enjoy.

Extract version: You can substitute 6 lb Weyermann Rauch Malt extract (available seasonally) for the Smoked malt. Or, if the Rauch Malt extract is not available, use 6 lb light malt extract and steep 3 lb of Smoked malt and 1 lb of CaraMunich® malt in 10 quarts of water at 152° F (66° C) before sparging with 15 quarts of 168° F (76° C), adding your extract and proceeding to the boil.

From the museum, it is a short walk to the **Schlenkerla** beer hall. Schlenkerla is the best known of Bamberg's rauchbier breweries, since their beers have been exported to the United States the longest. Interestingly enough, Schlenkerla is not the name of the brewery, and the beer

hall was originally called the Blue Lion. The brewery, Brauerei Heller, can trace its history back to 1405, making it Bamberg's oldest brewery. The Heller family has owned it for six generations. Today, Matthias Trum runs the show and is happy to tell visitors how the



*Stephan Mahr,
manager of Brauerei Mahr*

Schlenkerla tag got attached to the pub and then the brewery.

Trum's great-great-grandfather, Andreas Graser, had an accident while unloading a wagonload of barrels, leaving him with smashed legs and an awkward walk. Graser was a small man with a big sense of humor—his customers began calling him Schlenkerla (little stumbler) and the name stuck. After his death the pub was renamed in his honor and to this day, its sign out front features a picture of the little stumbler.

Like many of the traditional pubs in Bamberg, Schlenkerla still servers its smoky rauchbier directly from a wooden barrel behind the bar. The menu features a number of local specialties, including the Bamberg Onion, a pork-stuffed onion smothered in gravy atop a wave of mashed potatoes. Bamberg is known regionally for the quality of the onions grown there and the locals were once known throughout Franconia as the "onion kickers."

Aecht Schlenkerla Rauchbier, the flagship beer, is a deep copper-colored lager with an original gravity of 13.5 °Plato (1.055 SG). It has a more pronounced smoke aroma and flavor than Spezial, derived from malt smoked in-house over beechwood. The brewery also distills its rauchbier to make a wonderful beer schnapps available in the pub's gift shop.

Cynmar
CORPORATION

Scientific Equipment

Quality Products
Discounted Everyday Prices!

Microscopes, balances, meters, thermometers, pipets, hardware, glassware, plasticware, chemicals, health & safety, and much more for the **brewery business!**

Check out our hydrometers, agars, and other wine and beermaking products in our catalog and website.

800-223-3517 • www.cynmar.com
cynmar@cynmar.com

Contact us today for a free 2006 Cynmar Corporation catalog.



BAMBERG BREWRIES

Brauerei Ambrausianum

Dominikanerstrasse 10, 96049

Phone: +49 (0) 9 51 5090262

Brauerei Fassla

Ob. Königstrasse 19/21, 96052

Phone: +49 (0) 9 51 26516

www.faessla.de/

Brauerei Greifenklau

Laurenziplatz 20, 96049

Phone: +49 (0) 9 51 53219

www.greifenklau.de/

German only

Brauerei Kaisersdom

Breitäckerstrasse 9, 96049

Phone: +49 (0) 9 51 60450

www.kaisersdom.de/

Brauerei Keesman

Wunderburg 5, 96050

Phone: +49 (0) 9 51 26646

Klosterbrau Brauerei

Ob. Mühlbrücke 3, 96049

Phone: +49 (0) 9 51 52265

www.klosterbraeu.de/Bamberg/index_micro.htm

German only

Brauerei Mahrs

Wunderburg 10, 96050

Phone: +49 (0) 9 51 915170

www.mahrs.de/

German only

Brauerei Maisel

Moosstrasse 32, 96050

Phone: +49 (0) 9 51 15027

Brauerei Heller (Aecht Schlenkerla)

Dominikanerstrasse 6, 96049

Phone: +49 (0) 9 51 56060

www.schlenkerla.de/

Brauerei Spezial

Ob. Königstrasse 10, 96052

Phone: +49 (0) 9 51 24304

American brewpub. Offerings include a hell, dunkel, weizen and doppelbock.

The last stop on the west tour is **Kaiserdom**, which requires a 10-minute walk and a short bus ride. Or, you can take a slightly longer walk along the banks of the Regnitz in an area called Little Venice for the row of old fishermen's houses along the shore. Both routes are detailed in the guide and lead you, via bus, to Kaiserdom Brauereigasthof and Hotel.

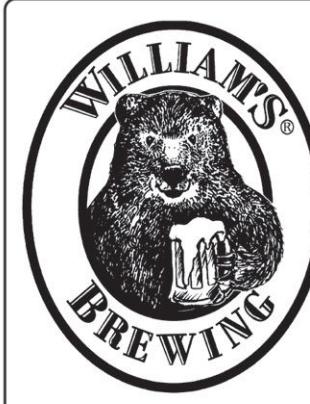
Kaiserdom, founded in 1718, is Bamberg's largest brewery. Its modern brewpub, which doesn't open until 5 p.m. weekdays (making it a good choice for a last stop, unless you are visiting on Sunday when it closes at 2 p.m.), offers a wide selection of food and all of the Kaiserdom beer. Perhaps the best known is its Premium



Pils Extra Dry. They also make a dunkel, schwarzbiere and hefeweiss.

EAST OF THE RIVER

The east tour has two clusters of breweries. A good place to start is at **Spezial**, founded in 1536. The gasthaus features regional food and rauchbier served straight from



HOME BREWERS!

Since 1979, William's Brewing has been the leader in direct home brewing sales. We feature a huge line of home brewing, winemaking, and coffee roasting equipment. Browse our extensive website or request our free catalog today!

www.williamsbrewing.com

Free Catalog Requests: 800-759-6025

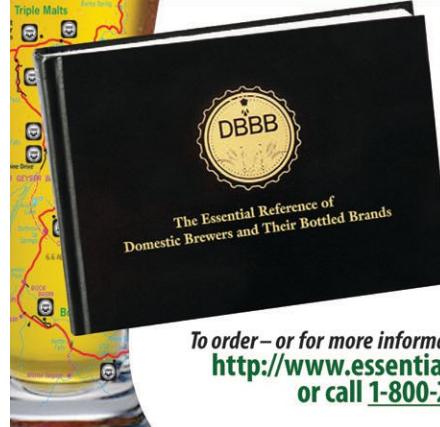
2594 Nicholson St. • San Leandro • CA • 94577



Searching for that great beer?

You'll find it in...

The Essential Reference of Domestic Brewers and their Bottled Brands (DBBB)TM



The first and only book with:

- Alphabetical brewery listings
- Brewery listings by geographic location
- State-by-state availability charts
- Brands broken out by style
- The Color and Bitterness comparison chart
- In-depth brewery portfolios

...all in one hardcover edition!

To order—or for more information—go to HYPERLINK
<http://www.essential-reference.com>
or call 1-800-247-6553



Directly next door to the Schenkerla pub is Bamberg's youngest brewery, the brewpub **Ambrausianum**. The brewpub opened in 2004 in the site of an old restaurant within the Haus Mahr hotel. The gleaming copper brewhouse across from the bar would look at home in any



the barrel. The flagship Rauchbier Lagerbier is slightly lighter in color and smoke content than Schlenkerla, making it more accessible to those not accustomed to rauchbier. Spezial also makes a Marzen and a seasonal bock.

Right across the street you will find **Fassla Brewery**, which opened in 1649, one year after the end of the Thirty Years' War. The brewery was modernized in 1986 when the current owners took over.

The archway at the front of the building was once used for horse-drawn wagons to take barrels of young beer up to the hills where it was stored in lagering caves to mature. Today, the archway is used as "Schwemme," a spot where patrons can grab a quick beer and still truthfully tell their significant others that they didn't set foot in the pub on their way home. There is also a serving hatch where locals have their jugs filled with beer to go, much like modern American growlers.

For those with more time, there is also a renovated gastube, or beer hall, and a small beer garden.

Fassla makes a vollbier, Märzen, Pils, weizen and a seasonal bock called Bambergator.

The next stop on the tour, **Maisel Brauerei's** beerkeller, is a decent 15-minute hike. Along the way you will pass the brewery's "new" brewing facilities, Bamberger Weissbierhaus. Maisel created a bit of a stir locally when it moved into its new digs in the late 19th century and start-

ed using modern technology such as steam and cooling devices.

At the old brewery, you will find an inviting beer hall that serves the full Maisel line: Pils, lager, hell, weisse (light and dark), bock (light and dark) and schankbier (low alcohol).

It is a much shorter walk to the last two stops. First you arrive at **Mahr's Brau**, which dates back to 1670. The latest generation of the family-run brewery has begun shipping beer to the United States, but not the full lineup. A visit to the brewery and gastube will give you a chance to try not only the Pils, hell and bock, but also the bottle-conditioned hefeweisse, Gig, a malty vollbier and Mahr's Brau Ungespundet, an unfiltered barrel-conditioned beer served straight from the barrel in ceramic mugs.

Like Fassla, the gastube features a schwemme, or stand-up drinking area whose regulars call themselves "stehgammer" or "stand-up loafers."

It's just a quick stroll across the street to the final stop on the east tour: **Brauerei Keesman**. The brewery was founded in 1867 and is still owned by the Keesman family. The building is a classic Franconian brewpub with the tall archway that is now used as a schwemme, complete with a serving hatch for beer to go.

The hallway leads to a cozy pub and a quiet beer garden out back. There, visitors can choose between a wonderfully hoppy Herren Pils, a hell, a hefeweizen, one of the seasonal bocks, or Sternla, an ungespundetes or "unbunged" beer served straight from the barrel.

The wonderful array of beers, breathtaking scenery and beautiful architecture of Bamberg make it a perfect destination for the adventurous beer lover. For those with more time, the surrounding countryside offers hundreds more options for finding a little slice of beer heaven.

Jim Parker, the former editor-in-chief of Zymurgy, is back behind bars (where he belongs) as publican at the Oaks Bottom Public House in Portland, Ore.



When you get your brewing stuff from us, we actually talk to you about how to make the best choices for your wallet as well as your experience.

If you want to know how to brew and you want lots of choice, we'll meet your needs. You'll learn from an award winning staff that practically invented homebrewing, *Sorry, Al Gore*. We probably taught your parents to brew, too.

Call for a free catalog/newsletter today.

www.thebeveragepeople.com

SANTA ROSA, CA

800 544 1867

Et Tu Brut: (continued from 23)

opening. If you're obsessive, you could buy a special champagne corkscrew and real champagne corks, but for our purposes the modern plastic champagne corks work well. With a quick tap from a hammer or mallet, the plastic corks seat firmly into the bottles.

Now to the Enjoyment

Now that the hard work is done, sit back and relax. Give the bottles a few weeks to settle again and then chill. Bruts are best served almost achingly cold to give the carbonation a slow release that teases the nose with the profound yeast and spice aromas. As you carefully open the bottle—pointing away from others—and pour into your favorite glass, consider the other possible ways to produce a brut.

If you stopped after the bottling stage, you would have a delightfully flavorful beer that would be hazy and muddy from the massive carbonation release upon opening. Alternatively, you could also skip bottling altogether and force carbonate the beer at high pressure (40 to 45 PSI) in kegs. To serve without gushing, you need an extra long serving hose and some patience. However, the beer would be missing the additional character that comes from the long exposure to yeast.

In the end, there is little to match the pride and pleasure of your own champagne to sip in celebration of a life spent brewing. Just remember, keep the beer dry and get your friends involved. Toasting is better with brewing partners.

Note: My thanks go out to the members of my homebrew club, the Maltose Falcons, for their enthusiastic help with these projects and their feedback on the beers. Particularly, these projects never could have happened without the tireless efforts of Kent Fletcher, the Brewgyver, and Jonny Lieberman, Mr. Pie Beer. Keep an eye on MaltoseFalcons.com for our continuing Brut Adventures.

Drew Beechum lives in Los Angeles, Calif. When not busy playing with computers for pay, he plays with beer. For the past four years, he has served as president of the Maltose Falcons, America's oldest homebrew club, and

has brewed on his kitchen stove for seven years.

Brouwerij Bosteels: www.bestbelgianspecialbeers.be/

Maltose Falcons Brut Project: http://maltosefalcons.com/tech/methode_champenoise/

"Sparkling Wine, A Home Winemaker's Guide to Methode Champenoise."
Jim Gifford; American Wine Society

Brut du Faucon

Inspired by DeuS de Bosteels, a pale ginger, lavender spiced beer that is intensified by the champagne treatment.

Ingredients for 5.5 U.S. gallons (21 liters)

13.00 lb	(5.90 kg) Belgian Pilsner Malt
0.25 lb	(113 g) Belgian Caramel Pils (8L)
0.25 lb	(113 g) Belgian Aromatic Malt
2.00 lb	(0.91 kg) Clear Candi Sugar
1.0 oz	(28 g) Styrian Goldings 5.25% AA 60 minutes
0.5 oz	(14 g) Czech Saaz 3.5% AA 20 minutes
	Wyeast 3787 Trappist High Gravity Yeast

Original Target Gravity: 1.085

Final Target Gravity: 1.010

IBUs: 23

SRM: 5

Directions

Mash at 148° F (64° C) with 16 quarts of water for 60 minutes. Prime with 7.75 ounces of corn sugar boiled with lavender, cinnamon, allspice and fresh ginger in champagne bottles (3.5 volumes).

For extract version, replace Pilsner and Caramel Pils malts with 7.5 lb. of light or extra light dry malt extract.



Inspired by the Deschutes Brewery & Public House on Bond Street in downtown Bend, the Bond Street Series highlights a handful of our beers that began at "the pub." These local favorites, old and new, are brewed in small batches a few times a year, displaying Deschutes' diversity and creativity.



deschutesbrewery.com

LATE HOPS: THE SECRET TO HOP AROMA AND FLAVOR

BY JAMIL ZAINASHEFF

Have you recently come across a craft brew with a massive hop flavor and a smooth bitterness that you really loved? If you're like me, you wondered how the brewery created such an incredibly huge, but smooth, hop character. The secret, it turns out, is very large additions of late hops.

Late hopping is the addition of hops during the latter part of the boil. It is an excellent method for creating hop aroma and flavor in your beer. In general, any additions with less than 30

minutes left in the boil and prior to cooling the wort are considered late hop additions. Although some hop oils are lost during this shorter boil, reactions between the hop compounds and the wort create other desirable flavor-active compounds not found in hops.

Many brewers turn to dry hopping in an effort to get more hop flavor and aroma, but dry hopping results in a completely different hop character, which may be out of place in certain styles.





While dry hopping is a great technique, it is often characterized as more resinous and grassy, while boiled hops are often characterized as more floral and spicy. Ray Daniels, in *Designing Great Beers*, says, “Late-hopped additions have been characterized as more floral, fragrant, and less grassy than dry-hopped additions.”

FLAVOR AND AROMA

It seems really simple when you think about it: add more late hops and get more flavor and aroma. Most of us, when we started brewing, were told that early hop additions are for bittering only and late hop additions are for flavor and aroma only. What we were not told is that shifting the bittering load to late in the boil can still provide substantial bitterness in addition to a huge hop flavor and aroma. Done right, it can produce some spectacular results.

While the great brewing scientist Jean de Clerck found late hopping to be wasteful and possibly harmful to beer flavor, professional brewers today are turning more and more to late hopping to get the big hop aroma and flavor that consumers crave. Sure, it costs more, but many

brewers find their customers appreciate the results.

I first learned how far some brewers were pushing late hopping while drinking a pint of AleSmith's Evil Dead Red with owner/brewer Peter Zien. This Halloween

seasonal ale has substantial malt character, smooth bitterness, luscious mouthfeel and an evil-looking, almost blood red (deep mahogany) color. Yet what really made me take notice was the amazing hop flavor and aroma from start to finish.

"Except for 3 or 4 IBUs, we add all of the hops during the last 10 minutes of the boil," Zien revealed. At that time I had never heard of, nor tasted, anything like that, and I was intrigued as much by the possibilities for this technique as I was by the beer I was enjoying.

Evil Dead Red is San Diego, Calif.-based AleSmith's most extreme example of late hopping. "The beauty of this beer is how the components of malt and hops exert themselves separately and substantially, rather than working to balance each other," Zien says. "The trick lies in a heavy load of late hopping, creating a big flavor and aroma profile with only a minimum of up-front hop bitterness. This allows the malt character to remain strong and perceptible even in the face of big hop flavors and aromas."

AleSmith's longtime brewer Tod Fitzsimmons created Evil Dead Red as a homebrewer several years ago and the beer has been a seasonal staple at AleSmith for the past seven years.

"Our main goal with late hopping at AleSmith is to impart a substantial degree of both hop flavor and aroma to the ale," Zien explains. "With the exceptions of our Wee Heavy Scotch Ale and Nautical Nut Brown Ale, all of our beers contain late hop additions in varying degrees. We late hop certain beers with late kettle additions and/or post-boil additions in a hop-back. We also dry-hop some beers in the secondary."

Another brewery that has embraced late hopping is Firestone Walker Brewing Company of Paso Robles, Calif. Brewmaster Matt Brynildson says, "We practice a lot of late hopping on the majority of our beers. Our main goal with increasing our late hops is big hop aroma and flavor. All of our beers have at least some hops that are added at the beginning of boil for bitterness, as this also helps to



keep foaming and boil-over down in the kettle, but these kettle charges are minimal to allow for larger late hopping charges. I brewed a flagship beer at another regional brewery where 95 percent or more of the IBUs were a result of whirlpool hopping."

Brynildson added, "American craft brewers practice a number of different methods of late hopping, with one very popular method being whirlpool hopping. This is a bit of a fusion between traditional late hopping and hopback methods. Adding hops late in the whirlpool results in lower isomerization of alpha acids and good uptake of hop oils and flavor components (especially with pellet hops). The fact that there is some isomerization (about 15 percent in whirlpool versus 35 percent in the kettle) of alpha acid means that not only hop aroma and hop flavor can be achieved, but also some bitterness."

Having found out about the increased use of late hops at some of my favorite breweries, I began experimenting with it myself and encouraged a number of experienced homebrewers to give increased late hopping a try. Longtime homebrewer David Sousa brewed an IPA with Columbus hops, all at 15 minutes or later. "The results were as expected and more," he said. "The hop flavor was huge. Another thing I noticed was an increased mouthfeel. The beer had a really nice texture in addition to a very clean hop flavor. And it doesn't make you feel like you need to wait before you take another sip. Dry hopping, by comparison, tends to cling to the palate a bit more."

Sousa's comment on mouthfeel echoed my results and those of another highly experienced and technical homebrewer, Scott Lothamer, who made a Classic American Pilsener adding hops at 20, 10, five and one minute left in the boil. The result was a huge hop flavor, and when compared to another Classic American Pilsener of the same terminal gravity, it showed significantly more mouthfeel. This beer went on to win Best of Show at a homebrew festival the following week.

While there seem to be a lot of positive results, John Palmer, in his book *How to*



WANT DISCOUNTS ON BEER?

Brewers Association Pub Discount Program
For American Homebrewers Association Members

For a full listing of participating pubs see page 12.

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org



Evil Twin

This beer ends up rich and malty, yet with a devilishly huge hop aroma and flavor. It is loosely based on AleSmith's delicious Evil Dead Red. Thanks to Peter Zien for his help with this recipe.

Ingredients

for 6 U.S. gallons (23 liters)

12.0 lb	(5.44 kg) British Pale Malt 3L
1.0 lb	(0.45 kg) Crystal 40L
1.0 lb	(0.45 kg) Munich Malt 8L
0.50 lb	(0.22 kg) Victory Malt 25L
0.50 lb	(0.22 kg) Crystal 120L
0.25 lb	(0.11 kg) Pale Chocolate Malt 200L
0.5 oz	(14 g) Centennial pellet hops, 10% alpha acid (20 min.) (6.4 IBU)
0.5 oz	(14 g) Amarillo pellet hops, 7% alpha acid (20 min.) (4.5 IBU)
1.0 oz	(28 g) Centennial pellet hops, 10% alpha acid (10 min.) (7.6 IBU)
1.0 oz	(28 g) Amarillo pellet hops, 7% alpha acid (10 min.) (5.3 IBU)
1.0 oz	(28 g) Centennial pellet hops, 10% alpha acid (0 min.) (0 IBU)
1.0 oz	(28 g) Amarillo pellet hops, 7% alpha acid (0 min.) (0 IBU)

Extract with specialty grains option: Using liquid malt extract, replace English Pale Malt with 8.75 lb (3.97 kg) pale malt extract. Replace the Munich malt with 0.75 lb (0.34 kg) Munich malt extract. Using dry malt extract, replace English Pale Malt with 7 lb (3.17 kg) pale malt extract. Replace the Munich malt with 0.50 lb (0.22 kg) Munich malt extract.

Yeast: A clean, neutral yeast that attenuates in the mid-70-percent range is perfect. White Labs WLP001 or Wyeast 1056 American Ale are excellent choices. A good dry yeast option is Fermentis Safale US-56. Ferment at 68° F (20° C).

Target Original Gravity: 1.066 (16.21 Plato)

Approximate Final Gravity: 1.016 (4.08 Plato)

Brewhouse Efficiency: 70%

Anticipated SRM: 17

Anticipated IBUs: 23.8

Anticipated ABV: 6.66%

Wort Boil Time: 90 minutes

Directions

Single infusion mash at 154° F (68° C) using a ratio of 1.3 quarts water to 1 pound of grain. While you could go with a shorter boil, the 90-minute boil enhances the blood-red color. It also adds a touch more melanoidin and caramel notes. Cool the wort quickly after the last hop addition to retain as much hop aroma as possible. Optionally, dry hop with more Centennial or Amarillo if you're a real hop monster. Carbonate to no more than 2 volumes and serve at 45 to 55° F (7.2 to 12.8° C).



HAVING FOUND OUT ABOUT THE INCREASED USE OF LATE HOPS AT SOME OF MY FAVORITE BREWERIES, I BEGAN EXPERIMENTING WITH IT MYSELF AND ENCOURAGED A NUMBER OF EXPERIENCED HOMEBREWERS TO GIVE INCREASED LATE HOPPING A TRY.

Brew, says, "A word of caution when adding hops at knockout or using a hopback—depending on several factors, e.g. amount, variety, freshness, etc., the beer may take on a grassy taste due to tannins and other compounds which are usually neutralized by the boil (15 minutes)."

I asked Zien and Brynildson about any negative effects they might have encountered with increased late hopping. Zien said, "We haven't run into any negative effects of abundant late hopping to the AleSmith lineup. Critical factors appear to be the freshness and low cohumulone levels of the hops, softened water (especially the carbonate/bicarbonate value) and original gravities in excess of 1.055

S.G. (13.57 Plato). Perhaps a lower gravity beer would show signs of 'grassiness' or 'green leaf' aromas/flavors and astringency with severe late hopping, as the malt profile would not be able to offer any significant balancing or smoothing help."

Brynildson said, "Most of the negative effects are just yield and efficiency issues: low hop utilization, lower whirlpool wort yields and possibly some issues with plugging up the heat exchanger. However, the bottom line is that it is worth it because it makes excellent beer!"

WHAT ABOUT BITTERING?

Adding more late hops to increase hop flavor will also increase bitterness. You will

need to reduce the bittering hop additions to end up with the same overall IBU level. When AleSmith brews beers like Evil Dead Red, with lots of late hop additions, they get most of the bitterness from the late hops. This allows for the maximum late hop charge and a huge hop flavor.

Moving hops to late in the boil not only reinforces the huge hop flavor and aroma, but some brewers suggest it also results in a much smoother, less harsh bitterness.

Greg Noonan in *New Brewing Lager Beer* writes, "Beers that are heavily hopped in the beginning of the boil exhibit a cleaner krausen fermentation head and are more stable than beers hopped later, but the hop bitterness will be coarser and less pleasant."

Several homebrewers have reported that after switching a recipe to all late hops, they experienced this effect. Sousa reports, "The bitterness seemed more rounded and less angular than a regularly bittered beer."

Shane Petersen has brewed more than 150 batches of beer, but he had never tried this technique. He brewed an all-late-hopped IPA, with hop additions at 10 and five minutes only. Petersen says he was looking for more hop flavor, but also smoother bitterness. He says the resulting beer "is really nice, very hoppy and flavorful with an extremely smooth bitterness. My main worry was that my IPA wouldn't be bitter enough. When I tasted the wort after chilling, I was even more worried because it didn't have any bitter zing to it, but after fermenting, it turned out that the bitterness level was just right. The hop flavor came through nicely and I'm really happy with it."

However, Brynildson warns, "There is no definitive proof that I am aware of that



*Call for our
new 76 page catalog*

- 100 Award Winning Recipe Kits
- 31 Varieties of Hops
- 90 Different Brewing Grains
- Expanded All-Grain Brewing equipment and recipes
- Friendly Expert Advice

*FREE Video or DVD
with any purchase*

- Complete selection of Better Bottles
- Huge selection of kegging equipment
- 87 strains of liquid yeast
- Shirts, glassware, books, soda, liqueur supplies and much more
- Low, low prices!

Our new streamlined shipping facility/store is located at

Midwest 3440 Beltline Blvd. Mpls., MN 55416
1-888-449-2739 www.midwestsupplies.com

there is a harsher bitterness or a different bitterness as a result of late hopping," so the smoother bitterness might be more expectation than actual perception.

HOP SELECTION

Select your late hop varieties based on their aromatic qualities. Brynildson said Firestone Walker uses a number of low alpha aroma varieties as well as mid-alpha dual purpose hops for late hopping. Examples include Styrian Golding, East Kent Golding, Cascade, Centennial, Crystal, Mount Hood and U.S. Fuggle.

Zien says AleSmith looks for aromatic hop varieties with good flavor characteristics and low co-humulone values.

"In our experience, these are the hops that isomerize without imparting harsh or astringent-like hop profiles," he explains. "This goes beyond late-hopping for flavor and aroma, and applies equally to smooth bittering early in the boil as well. The hops that have worked best for our late hopping include Cascade, Amarillo, Tomahawk, Simcoe, Chinook and a newer variety, Palisades. Tomahawk and Simcoe have relatively high alpha acid values and somewhat low cohumulone values and are best used in lesser percentages than the other hops mentioned. For our English-style ales, we use East Kent Golding and Styrian Golding. One of AleSmith's Belgian-style Ales, Lil' Devil, benefits from a run through a hop-back containing Styrian Golding whole hops on its way to the heat exchanger."

Some studies suggest that late hopping with high cohumulone hops tends to result in a harsher bitterness. However, Brynildson says he doesn't buy into that theory. "I also believe that the cohumulone argument is independent of how you are utilizing the hops—kettle hopping or late hopping," he said. "Some of the best smelling hops in the world are high in cohumulone and I plan to continue using them."

Given that a number of brewers report a less harsh bitterness from late hopping, it might be a lesser issue than first thought. It might be more important to

Dogfish Head Craft Brewed Ales

90 Minute Tees

Front: Logo, Feel the burn... Back: ...that's the sickness and the cure

\$20.00
buy online anytime
www.dogfish.com

A row of various Dogfish Head beer bottles is shown at the bottom.

Keep Homebrew Fresh!

Maintain carbonation and freshness from the first glass to the last.

Party Pig

A black Party Pig self-purifying beer dispenser is shown next to a tall glass filled with beer and foam.

Easier to fill than bottles - No pumps or Co₂ systems • Holds 2.25 gallons of beer - Two "Pigs" are perfect for one 5 gallon fermenter • Patented self inflating Pressure Pouch maintains carbonation and freshness • Perfect dispense without disturbing sediment • Simple to use - Easy to carry - Fits in the "fridge" • Ideal for parties, picnics and holidays.

Quoin
pronounced "coin"

401 Violet Street
Golden, CO 80401
Phone 303•279•8731
FAX 303•278•0833
partypig.com



It's time to try a
Party Pig®
(self-purifying)
beer dispenser

Just PRESS, POUR & ENJOY!



TO USE THIS TECHNIQUE IN YOUR OWN BEERS, REPLACE ALL OR PART OF YOUR TRADITIONAL BITTERING HOP ADDITIONS WITH ADDITIONS AT 20 MINUTES OR LESS REMAINING IN THE BOIL, INCREASING THE AMOUNT OF HOPS TO GET THE SAME IBUs.

select late hops based on their flavors and aromas first, and their cohumulone fraction second.

With this technique comes the question of using whole leaf or pellet hops. Petersen

uses a false bottom in his boil kettle and was able to use whole hops for his experiment. His concern was that a large amount of pellet hops might clog his counter-flow chiller. However, using whole hops results in a very large mass

that can make it difficult to extract the wort at the end of the boil.

The majority of brewers I spoke with use pellet hops for this technique. Pellets break up quickly and expose the alpha acids for isomerization. Brynildson advises using pellets for late/whirlpool hopping.

CALCULATING THE NUMBERS

To use this technique in your own beers, replace all or part of your traditional bittering hop additions with additions at 20 minutes or less remaining in the boil, increasing the amount of hops to get the same IBUs. Replace all of your bittering hops for an intense hop flavor. Replace a lesser amount to just enhance the hop flavor.

While isomerization is limited during a short boil, hop utilization isn't linear across the boil time. You don't need six times as much hops for a 10-minute boil as compared to a 60-minute boil. Assuming you're getting about 30 percent utilization at 60 minutes, you'll get around 17 percent at 20 minutes, 14 percent at 15 minutes and around 10 percent at 10 minutes. So you'll need to approximately double or triple your hops to get an equivalent bitterness. If you're already calculating your bitterness with software or some other tool, use the same method to make this adjustment.

It is said that most formulas for calculating bitterness are not as reliable for very late hop additions, but don't let that stop you. It is quite difficult to detect a 5 IBU difference in most moderately bittered beers and impossible in a highly bittered beer.

In beers with significant bitterness (50+ IBUs), you still might want to add a charge of high alpha hops early in the



Quality Wine and Ale Supply
Wine Kits
Bottles
Corks
Barrels
Supplies
Gifts

**Beer Kits
Bottles
Caps
Kegging
Equipment
Books**

**Wine and Beer Making Supplies
for Home Brewers and Vintners**

**Awarded "Retailer of the Year" by the 2005
WineMaker International Amateur Wine Competition**

**Store: 108 S. Elkhart Ave. - Mail: 530 E. Lexington Ave. Ste 115, Elkhart IN 46516
Phone: 574-295-9975 - Email: info@HomeBrewIt.com - Web: www.HomeBrewIt.com
Elkhart County's First and Finest Winemaking & Homebrew Specialty Store
Free Catalog ~ www.HomeBrewIt.com ~ Free Newsletter**



AHA MEMBERSHIP RALLY

American Homebrewers Association

Celebrate with fellow members and introduce your friends to the American Homebrewers Association.

The American Homebrewers Association thanks our brewery hosts—helping to strengthen the homebrewing community.

For more information about the AHA Membership Rallies contact Kathryn Porter at +1.303.447.0816 x123 or kathryn@brewersassociation.org

Where we're going....

- Brooklyn Brewery - 4.22.06
- Deschutes Brewery - 4.29.06
- Goose Island Beer Company - 5.13.06
- Odell Brewing Company - 7.15.06

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org

boil. If you don't, the amount of hop flavor can completely overwhelm some beers.

OTHER TIPS FOR LATE HOPPING

Keep in mind that the amount of time from when you add the hops until the wort is at pitching temperature affects the hop character and the bitterness.

"Getting great hop aroma takes execution, knowing your raw materials and knowing your brewhouse," Brynildson says. "If you throw hops into the whirlpool and then take two hours to cool, you will not get the effect you are looking for. We throw our late hops into the whirlpool at the last possible moment and then cool and transfer to the fermenter as quickly as possible."

Sousa suggests increasing the wort volume in the boil kettle. "You'll lose some of your wort to the large amount of hops in the kettle," he said. "Increase your batch size an extra quart per 5 gallons to compensate."

High wort pH can emphasize the hop bitterness and result in a harsh bittering perception, so hold off on "Burtonizing" your water or other similar mineral additions.

Zien sums it up best: "As far as any recommendations for the homebrewers interested in late hopping, I would say explore your own boundaries and don't be limited by the hop amounts listed on most recipes. Experiment with the levels of late kettle, post-boil [during chilling, in a whirlpool or a hopback], and dry-hop additions that your brewing system, as well as your palate, can handle. Use the malt bill to create the right profile that will showcase the type of hop character that you're looking for in any particular beer style. Also, make sure to use the freshest ingredients and make a habit of tasting and smelling your grains and hops. Great tasting grains and pleasant aromatic hops are likely to come off the same way in your finished beer."

Jamil Zainasheff is a former Ninkasi award winner at the National Homebrew Competition. A member of the Quality Ale and Fermentation Fraternity, he lives in Elk Grove, Calif.

Hobby Beverage Equipment

The small batch equipment company



Fermenters

The MiniBrew (left) & Affordable Conical Two brands - 5 Sizes - 6.5 to 40 gallons Cost less than SS - Move the dead yeast not the beer - No more hard to clean carboys - Use any sanitizer - No secondary transfers - Heavy wall construction - A major medical company uses our plastic - Why not you?

Mash Lauter Tun

Holds up to 35 pounds of grain
Designed for 5 & 10 gallon recipe
Flat false bottom will not float or leak
RIMs and thermometer threads included
Designed from start as a mash lauter tun
Make your own extract for great flavors



EVERYTHING INCLUDED READY TO BREW

951-676-2337 or john@minibrew.com or www.minibrew.com

HOW TO BREW

Everything you need to know to brew beer right the first time.

Presented in a no-nonsense style, this authoritative text introduces brewing in an easy step-by-step review that covers the essentials of making good beer, including ingredients, methods, recipes and equipment.

Beyond the first batch, it provides an accessible reference to intermediate techniques like all-grain brewing variations and recipe formulation. A must for any novice or intermediate brewer—perfect for anyone who has discovered the joy of homebrewing!

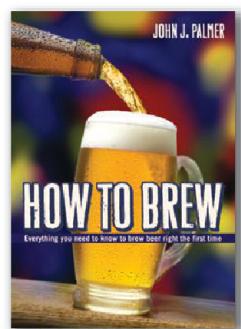
Veteran homebrewer John J. Palmer is a respected author and speaker in homebrewing circles. His years of hands-on experience help homebrewers consistently make great beers while expanding their knowledge and experience with the hobby.

400 pages including photos, illustrations and 22 recipes.

Retail price: \$19.95. Available in June 2006.

Order online www.beertown.org

Or Call 1.888.822.6273 or +1.303.447.0816



SPECIAL OFFER TO AHA
AND BA MEMBERS ONLY!

\$13.95

plus shipping and handling
For a limited time only.
Offer ends June 26, 2006.

Brewers Publications
A Division of the Brewers Association
www.beertown.org





- Florida's Top 10 List -

You know you've joined the Florida homebrewing ranks when:

- 1) You bust out the suntan lotion on brew day.
- 2) You find brewing in your bare feet convenient.
- 3) You have to finish your boil in time to convert the "Cajun Cooker" to steam the blue crabs for dinner.
- 4) Brewing a weizen in January doesn't seem at all out of season.
- 5) You watch for boilovers from inside where it's air conditioned.
- 6) You have to adjust your boil time to accommodate the daily thundershowers that fill the kettle back up.
- 7) Your 68° F immersion chilled wort is 75° F by the time you get it siphoned from the kettle to the fermenter.
- 8) Your kids are forbidden to use the pool until the carboys in the shallow end have finished fermenting.
- 9) You have to hermit crab-proof your grain storage.
- 10) You hear people talk about keeping fermenters in their cellar and think, "What's a cellar?"

Gator Tails & Better Ales:

sunshine State Hosts Homebrewers

By Jim Brady



On behalf of the Florida homebrewing community and the American Homebrewers Association, you are cordially invited to the Sunshine State for "Gator Tails and Better Ales." Join us in Orlando at the National Homebrewers Conference June 22-24. Expect some brewing fun-in-the-sun and plan to take in all the amenities our state has to offer. Come as you are and leave your shoes at home!

Whether you do Disney, Universal Studios, Sea World or any of the countless attractions, take advantage of Orlando's central location to explore both east and west coasts. Daytona's fabulous beaches await a short drive east. Take time to tour the Kennedy Space Center while you're there. Come earlier or stay later and allow South Florida to entertain you too. Plan an excursion to Miami and a side trip to the Florida Keys. Make it all the way to Key West and I'll buy you a drink at Jimmy Buffett's Margaritaville.

Maybe you're thinking, "I'm only there for the beer." Then mix business with pleasure in the Hospitality House at Busch Gardens in Tampa Bay. Visit Tampa's Ybor

City and enjoy its historical charm rooted in the days of Jose Marti and Cuban liberation while sipping espresso at a sidewalk café or sampling a hand rolled cigar. If it's still all about the beer, have a cold one at one of Florida's best brewpubs, right there in the heart of Ybor.

No matter what your plans are once you arrive, visit the Florida Brewers Guild at www.floridabrewersguild.org before you get here. Acquaint yourself with some of the best microbrews in the state and get up to speed on legislative issues Florida brewers are tackling, like the Growler-to-go Initiative. Then come to the conference and let us buy you a beer. Talk with our brewers and discover what it's like to brew in the subtropics!

Brewing in Florida

I know many of you have read Randy Mosher's book *Radical Brewing*, but if you're a Florida homebrewer, you could write a book called *Extreme Brewing*. Producing quality beers in the Sunshine State requires some innovative cooling techniques not only after the boil and dur-

ing fermentation but also before mash-in. The tap water sometimes exceeds acid rest! Brewers in cold climates may take a few things for granted like seasonal temperatures and a cool basement, but Florida brewers have no favorable brewing season. Our houses generally have no basements due to the state's low water table, at near-sea-level elevation, where a boil takes every bit of 212° F.

Year-round heat and humidity pose problems with cooling wort, maintaining fermentation temps and grain storage. Humidity molds grain and invites pests, so grain must be stored in air-conditioned areas. I vacuum-pack mine. A host of tropical insects and critters will eat right through many containers. I use galvanized metal cans and seal the lids with gaskets! Extra fermenting fridges serve double duty as grain storage lockers between brewing sessions.

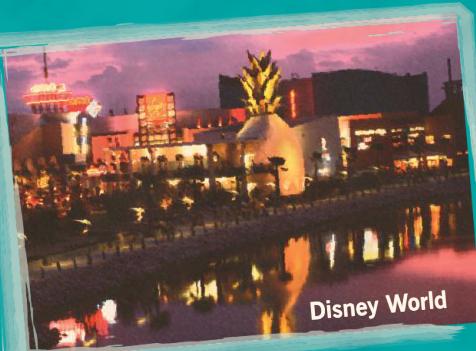
In Florida, it's a given: your counterflow chiller is not going to cool your wort to fermentation temperature. Finding a way to further cool your wort and then keep it at fermentation temperature can be challenging. It takes creativity if you are a low-budget brewer. Before graduating to a

temperature-controlled fridge, I fermented in an insulated cardboard box with an opening cut to allow my window A/C to "nose" into it, then sealed it with duct tape! Since Florida's climate favors ales over lagers (actually neither), you can suspect our homebrewers who brew lagers are the ones with all the toys, those enviable brewers who have the pumps and glycol cooled conicals or the three temperature-controlled chest freezers on the patio or in the garage-turned-brewery.

To chill after boiling, a two-stage technique can be used: pre-chilling with a counterflow, then passing the wort through a coil immersed in a bucket of ice before filling the fermenter. With each brew, the number of coils in the ice bucket can be adjusted to produce a target fermentation temperature within a degree or two. It's quick and painless. The only requirements are an extra piece to sanitize and a trip to the corner store for ice after the finishing hops are added.

When you come to Florida for this year's conference, sample all our beers and enjoy yourself. While in that state of nirvana, appreciate the TLC our brewers have infused into their craft, reflect on their dedication to brewing in the tropics and take a page out of the book called *Extreme Brewing*.

Jim Brady is a member of the Conch Republic B.U.B.B.A.s (Brewers United Brewing Better Ales) in Key West, Fla.





GET WITH THE PROGRAM AND BREW!

BY RAY TAYLOR

"WHAT ARE WE DOING AT OUR NEXT MEETING?"

The answer to that question will vary greatly from club to club across the country and poses one of the major challenges faced by nearly every homebrewing organization, large or small, established or newly formed. Providing activities that cater to the needs of the majority of a club's membership can be a constant struggle. The agenda will often depend on members' expectations of their homebrew club experience and what members are willing to put into that experience.

A cross-section of homebrew clubs across America would find programs as diverse as the clubs and their members. The scope of club-sponsored activities may be a function of the organization's size, membership base and geographic location. Some of the more common activities are various social events, brewing-related activities, brewing demonstrations, lectures, pub crawls and field trips.

Our local homebrewing club, the Prairie Homebrewing Companions (PHC), has experimented with a number of activities in its 14 years. One of the most popular is the club's Award of Brewing (AoB). This has been a staple at our monthly meetings since 1999 and can be easily adapted by your homebrew club.

WHAT IS THE AOB?

In brief, the Award of Brewing serves as a challenge to club members to demonstrate their brewing skills and knowledge of world beer styles. Participants bring samples of their beers, meads and ciders to each club meeting for evaluation by a panel of experienced beer judges. We have at least one Beer Judge Certification Program (BJCP) judge on every evaluation team. This is done within the scope of the BJCP guidelines.

Samples are given an abbreviated evaluation (one to two minutes) without the point-by-point analysis that would be done via a standard competition scoring sheet. As a follow-up, brewers then receive a brief written critique that includes a projected reference score based upon BJCP style guidelines as well as direct verbal feedback, if interested. A submission advances in the program if it reasonably represents the target style and was produced without any major technical defects. In addition, partic-

WE'RE HERE FOR BEER™

Beer is our life. Wyeast, the world's finest liquid brewing yeast.



WYEAST LABORATORIES

1-888-WYEAST 1

www.wyeastlab.com

ipating brewers receive special recognition as they reach specific milestones during their progression through the program.

HISTORY

The Award of Brewing was initially conceived as a means to support the club's purpose as stated in its by-laws ("to be a self-supporting, non-profit organization dedicated to promoting the art and science

of brewing and beer appreciation"). It also assured that a sufficient quantity of beer would be available at the club's monthly meetings. Brewers would demonstrate their proficiency by producing a wide range of beer, mead and cider and share the fruits of their labors with fellow club members. The program has evolved well beyond that over the years.

The initial plan of the program was to encourage members to eventually brew at least one beer, mead and cider from each of the major recognized categories. The goal was to attain the rank of Master Brewer within the club. A special advancement certificate and a personalized, engraved lidded crystal Stein are presented to each Master Brewer to commemorate their achievement. At first, Master of Brewing was the highest level attainable in the AoB. Since then, two levels of recognition were added beyond the Master level to cater to those brewers who wish to experiment with more of the individual styles within the major categories. For more on the levels of achievement within the AoB, see the sidebar on page 45.

MANY CLUB MEMBERS ARE NOW TACKLING STYLES THEY PROBABLY NEVER WOULD HAVE CONSIDERED IF IT HADN'T BEEN FOR THEIR INVOLVEMENT WITH THIS PROGRAM.

Since the AoB encourages participants to experiment with a variety of styles, the spectrum of products brought in each month also has broadened tremendously. Many club members are now tackling styles they probably never would have considered if it hadn't been for their involvement with this program. Gone are the days when only hoppy pale ales, porters, stouts and an occasional lager were the only beers circulated about, although these popular styles still make regular appearances. Our members are now much more interested in beer styles in general and the technical details needed to capture these styles in the bottle and keg.

NOT JUST AN AWARD

Many brewers who might not otherwise feel comfortable entering competitions have found a fun and informative activity in the AoB, as well as a way to improve their brewing skills. In fact, the AoB is more of a competition against oneself because program advancement does not depend upon the success or failure of the other participants.

Award of Brewing participants have their beers evaluated under less formal, less stringent conditions and feedback is always constructive and confidential. Being able to chat with the judges who evaluated the beer, on the night the beer is tasted, means not having to wait several weeks for competition judging sheets to arrive and this is a tremendous advantage.

We currently have 29 brewers participating in this program, representing roughly 60 percent of our club membership. Approximately 700 beers have passed through our judging glasses during the short history of the AoB. At an average of nearly 2 liters per sample, that's equivalent to about 350 gallons of homebrewed beer, mead and cider.

The percentage of beers failing to advance in the program has declined steadily from an initial rejection rate of approximately 25-30 percent. Now, the success rate of participating brewers currently is holding steady at about 85-95 percent. The Prairie Homebrewing Companions have three Recognized, six Accomplished, five

Perfect Results are Within Your Reach.

THE HOME BREWERY

Call Today to Receive a FREE Catalog!

Featuring our Top 10 Tips for Creating the Ultimate Homebrew.

www.homebrewery.com
1-800-321-BREW(2739)

Ozark, Missouri

HOME BREW AND MICROBREW

From bestselling author and beer expert CHARLIE PAPAZIAN

EVERYTHING YOU NEED TO GET STARTED

ON THE ROAD WITH CHARLIE

FOR THE ADVANCED BREWER

ISBN 0-06-053105-3 • \$14.95 (\$20.95 Can.)

ISBN 0-06-075814-7 • \$15.95 (\$21.50 Can.)

ISBN 0-06-058473-4 • \$14.95 (\$22.95 Can.)

www.AuthorTracker.com

Master and two Grand Master brewers among their corps.

Though substantial effort is involved in processing beers and completing paperwork, and the start of our monthly meeting is occasionally delayed due to the sheer number of entries, the AoB has been a worthwhile project enjoyed by the entire membership of the Prairie Homebrewing Companions, whether as active participants or simply as partakers in the liquid refreshments made available.

AoB LEVELS OF PARTICIPATION

Recognized Brewer: To reach the "recognized" level a brewer must successfully produce a beer from six of the major categories currently sanctioned by the AHA. At least one of these must be a lager and one must be an ale.

Accomplished Brewer: To reach the "accomplished" level a brewer must successfully produce a beer from 12 of the major categories currently sanctioned by the AHA. At least two must be lagers and two must be ales. Beers credited to a Recognized brewer count toward this obligation.

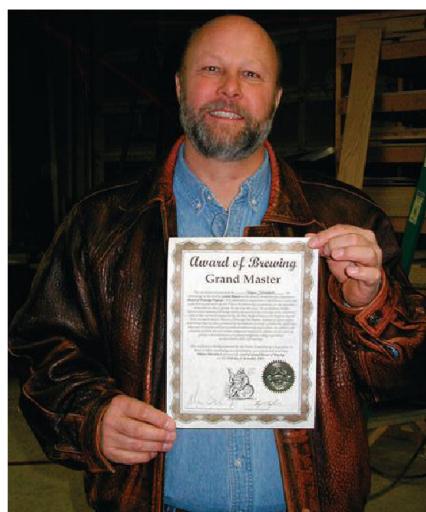
Master of Brewing: To reach the "master" level a brewer must successfully produce a beer from every major category currently sanctioned by the AHA. Beers credited to an Accomplished brewer count toward this obligation.

Master of Brewing 2nd Degree: To reach this level a brewer must successfully produce beers representing 26 additional styles beyond those credited for the "master" level. A club service component is also required to advance to this level. This will include, but not be restricted to, a demonstration of the brewer's knowledge of world beer styles and technical aspects of homebrewing.

Grand Master: To reach this level a brewer must successfully produce every style of beer currently sanctioned by the AHA. Beers credited to a 2nd Degree Master brewer count toward this obligation. A club service component is also required to advance to this level. This will include, but not be restricted to, a demonstration of the brewer's knowledge of world beer styles and technical aspects of homebrewing.

If you want more beer at your meetings, and if you want better beer at your meetings, an Award of Brewing program in some shape or form might just be in your club's future. Free beer is always a good thing. More free beer is an even better thing. Have fun! Enjoy the rewards of brewing!

Ray Taylor, of Moorhead, Minn., is administrator of the Award of Brewing program for the Prairie Homebrewing Companions For more on the program go to <http://prairiehomebrewers.org>.



Wayne Fehrenbach displays his certificate of recognition for reaching the level of Grand Master in the Prairie Homebrewing Companions Award of Brewing program. He was the first brewer to reach the level of Master of Brewing and Master of Brewing 2nd Degree. While on the road to attaining Grand Master status, Fehrenbach successfully brewed every style currently recognized by the BJCP and AHA.

Just Brew It!!

Larry's BREWING SUPPLY

1-800-441-2739

www.larrysbrewing.com

Brewers Association presents

Great American BEER FESTIVAL®

PRO-AM COMPETITION

The competition pairing professional brewers and award winning homebrew recipes from American Homebrewers Association members.

GABF Pro-Am Medals will be presented to professional and amateur brewing pairs at the Great American Beer Festival Awards Ceremony

September 30, 2006
Colorado Convention Center
Denver, Colorado

For more information, visit www.beertown.org

Great American Beer Festival Celebrates 25 Years!

The Great American Beer Festival® is presented by the Brewers Association www.beertown.org

BIA
BREWERS ASSOCIATION

AHA



COMMERCIAL CALIBRATION

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 at least the rank of Master in the Beer Judge Certification Program. Each issue they will 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.



Drinkability was the key word for the two very different beers scored by our judges for this issue.

First up is In-Heat Wheat, a German-style hefeweizen crafted by Flying Dog Brewery of Denver, Colo. It could be said that Flying Dog "wrote the book" on German wheat beers—president Eric Warner is the author of *German Wheat Beer* in the Classic Beer Style Series.

The Flying Dog "litter" of ales got their start in Aspen, Colo. in 1990, and by 1991 Flying Dog Pale Ale (Doggie Style) was already a gold-medal winner at the Great American Beer Festival®.

The main brewery is now located in Denver, where it transitioned from Broadway Brewing Co. in 2000. Artist Ralph Steadman, who illustrated many of the works written by his good friend Hunter S. Thompson, designs the labels for Flying Dog ales.

In-Heat Wheat is brewed with malted white wheat and Munich malt to create a smooth, full mouthfeel. Flying Dog's proprietary yeast adds a flavor profile of bananas and cloves. The result is a refreshing, unfiltered ale for "when summer's high and you're feeling a little frisky," according to the company Web site.

Next up was Black Butte Porter, the flagship brand of Deschutes Brewery in Bend, Ore. Black Butte Porter was judged as a brown porter, but also crosses over into the robust porter category. Black Butte has won several GABF medals and North American Beer Awards in the brown porter category, but is listed as a commercial example of robust porter in the BJCP style guidelines.

Explains judge Gordon Strong, "The hop balance suggests a brown porter but the grain says robust—this falls between the two porter styles."

Black Butte is crafted using chocolate and crystal malts, providing a sweetness that is balanced by a low to moderate hop bitterness and flavor and a dry finish.

Our expert panel includes David Houseman, a Grand Master III judge and competition director for the BJCP from Chester Springs, Pa.; Beth Zangari, a 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 III judge and principal author of the new BJCP Style Guidelines who lives in Beavercreek, Ohio.



ON THE WEB

BJCP Style Guidelines

www.bjcp.org

Flying Dog Brewery

www.flyingdogales.com

Deschutes Brewery

www.deschutesbrewery.com





THE JUDGES' SCORES FOR IN-HEAT WHEAT



Aroma: Classic clove phenols and banana esters in a pleasant balance. Sweet malt base. No hop aroma—OK. No supporting or contrasting vanilla or bubblegum notes. No off aromas. (10/12)

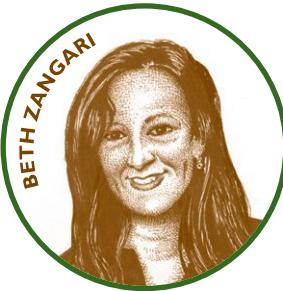
Appearance: Golden color is on target. Very cloudy, yeast laden. While this defines the style, this is somewhat more than most Munich examples. Thin head dissipated quickly leaving a thin collar around the glass. Unusual for this style. Not very carbonated so this may contribute to the low head and retention. (2/3)

Flavor: Clove and banana up front with a sweetish malt base that's not particularly indicative of the bready or grainy character of wheat. A bit tart but OK for style. Malt fades at the end leaving some hop bitterness in the finish to help offset the sweetness. A fairly well-balanced beer. This sample lacks the bright luster of many hefeweizens. Amount of yeast may be dulling the overall character. (15/20)

Mouthfeel: Medium to full body with a heavy mouthfeel. Carbonation low for the style. Creamy fullness from the wheat and yeast is not offset by typically high effervescence. A little rough bitterness/astringency on the tongue in the finish. (3/5)

Overall Impression: Very drinkable and enjoyable. Higher carbonation levels, a little lighter body and some reduced yeast content would make this a more refreshing and brighter beer. Still a pint would demand another especially if being drunk with pork, potatoes and spaetzle, or just sitting around on a hot summer's eve. (8/10)

Total Score: (38/50)



Aroma: Bready malt, slight clove phenols with banana undertones. Slight alcoholic notes. Spicy Noble hop aroma subdued, but accentuated by clove-like phenols. Banana aroma becomes more pronounced as the beer warms, as does a grainy wheatiness. (8/12)

Appearance: Buttercup yellow, with deepening, nearly orange tones; murky with fine white biscuity head. Some large bubbles, dissipate a little too quickly. Needs a good straight pour down the middle of the glass. (3/3)

Flavor: Banana clove up front, with not a lot of the bready grain character at first. Wheat flavors emerge as the beer warms, reminiscent of the grain bin full of wheat-berries at the natural food store. Hop flavors definitely subdued. Acidic lemony bite at the end provides a crisp finish, with just a hint of hop bitterness that lingers. A perfect example of when clove phenols are appropriate in a beer. (15/20)

Mouthfeel: Effervescent carbonation almost stings the tongue, body to the medium-full side. Hop bitterness combines with acidity to create a mouth-coating finish, like fresh citrus peel, slightly numbing but not sticky or cloying. (3/5)

Overall Impression: This beer seems a little heavier in all aspects than the best German examples I have tasted, as seems the case sometimes with American interpretations of classic continental styles. Still, it is refreshing and festive. A great excuse to drink beer at 9:57 on a Sunday morning, preferably out on the deck with a plate of potatoes and sausage, and a steaming cup of aromatic coffee. (7/10)

Total Score: (36/50)



Aroma: Lemony aroma, clove and vanilla underneath with just a hint of banana ester. The wheat malt lends a bready, slightly earthy character that blends with the yeastiness. Has just a touch of lactic character, which is acceptable. (9/12)

Appearance: Quite hazy, to the point of being murky. Yeast sediment was probably roused during transit. Amber color falls in the middle of the guidelines, and though head retention is decent, it falls a little short of the best German examples. (2/3)

Flavor: Starts with a smooth wheat malt character: bready and biscuit-like. Fermentation character comes through nicely, with kiwi and banana esters and clove phenols. The finish is a little rough—hop bitterness seems high but is also accented by the yeast bite. The slight lactic sourness enhances the thirst-quenching character. (14/20)

Mouthfeel: Astringency detracts from the finish, but the malt character is just enough to balance without being cloying. A higher carbonation level would give it more liveliness. (3/5)

Overall Impression: A good, refreshing example of the Bavarian wheat style. The hop bitterness is a little aggressive, but the yeast delivers a complex flavor profile. It is encouraging to find such a well-crafted weizen made in the United States. (7/10)

Total Score: (35/50)



Aroma: Classic banana/clove aromatics, moderately strong. Has a bit more clove than banana. Some tartness and a noticeable wheat aroma. Fresh and yeasty. Hints of vanilla and bubblegum. No significant faults. (11/12)

Appearance: Appropriately cloudy with a permanent haze. Big white head, long lasting and rocky. Classic yellow color. (3/3)

Flavor: Initial banana and wheat is strong and lasts throughout the palate. Some clove, tartness and dryness in the finish. Fresh, yeasty taste. Low bitterness—barely noticeable, but could be lower; the dryness accentuates the bitterness. Just a hint of hop flavor. Clean Pils malt plate. Perception of sweetness initially but this is probably just from the body and esters; this is a dry beer. Impression of strength, with a light alcohol flavor. (15/20)

Mouthfeel: Medium-full body, too thick! High carbonation—great! Light tartness gives a mouth-puckering sensation. No alcohol warmth, OK. Thick body hurts refreshing quality. (3/5)

Overall Impression: Great yeast and wheat character but the body keeps it from being as refreshing as it should be. It seems heavy and a bit big. Bitterness is a little high but not greatly so. Less hop flavor would help the yeast/malt character. Nice wheat flavor and tartness: hold the lemon! (7/10)

Total Score: (39/50)

THE SCORES



Black Butte Porter, Deschutes Brewery, Bend, Ore.
BJCP Style: 12A Brown Porter

THE JUDGES' SCORES FOR BLACK BUTTE PORTER



Aroma: Chalky, milk chocolate and toffee malt character up front with no hop aroma. Some fruity, dark berry esters. No DMS and very low diacetyl. Alcohol was only noticeable as the beer warmed up a bit. (10/12)

Appearance: Dark brown with ruby highlights. Very good clarity; bright. Thin, tan head rapidly dissipated, leaving a thin collar around the glass. (2/3)

Flavor: Chocolate and caramel malt sweetness balanced with moderate hop bitterness. Dark cherry fruity esters complement the malt. No hop flavor—OK. Very low diacetyl. No DMS. Finish is balanced with assertive bitterness and malt sweetness. Nutty, toffee aftertaste. Alcohol evident but blends nicely for a very pleasant flavor experience. A chalkiness in flavor that carries over to mouthfeel. (17/20)

Mouthfeel: Smooth, medium bodied beer. Soft mouthfeel. A spritzy tingle from carbonation. Chalky sensation in finish is somewhat distracting. (4/5)

Overall Impression: Excellent brown porter. The only correction I'd like to see is attention to the chalkiness that might require adjusting water chemistry to lower mineral content. Very quaffable. It would also be good to have this served on a hand pump. I can imagine this with a typical English pub Plowman's lunch or with a warm Reuben or Muffuletta sandwich. (9/10)

Total Score: (42/50)



Aroma: Very low fruity esters, dominated by caramel malt sweetness, with a slightly grainy, roasted note. No hop aroma detected. Clean fermentation. Some licorice merges as the beer warms. (9/12)

Appearance: At first appears dark brown, but shows deep ruby red when light shines through it; very clear with creamy, long lasting tan head. Lace clings to sides of the glass to the end. (3/3)

Flavor: Caramel sweet maltiness carries from aroma to flavor. Light licorice note mid-palate; seems more alcoholic in the finish than I expect. Slight acidic note, very low hop bitterness with no hop flavor. Some roastiness emerges in a surprisingly dry, clean finish. Exhibits malt and sweetness, with the dark malt adding the balance rather than hop character. Bitterness is just enough, no hop flavor. No "English" adjunct characters, showing this to be an American craft beer rather than a UK import. (16/20)

Mouthfeel: Body is fairly light, with somewhat soft carbonation. Slight astringency suggests use of darker malts, and accentuates the clean finish. I'm looking for just a little more body. (4/5)

Overall Impression: The more I taste this beer, the more enjoyable it becomes. It lacks some of the adjunct sweetness and fuller mouthfeel of some English examples, but makes up for it in overall drinkability. The roasty notes and slight acidity keep it refreshing. The first time I ever had this beer was with scrambled eggs and cheddar cheese, sourdough toast and hash browns in a restaurant at the Seattle airport at 6 a.m., and I loved it. Would pair well with a grilled cheese (cheddar) on sourdough. (8/10)

Total Score: (40/50)



Aroma: Chocolate malt comes through strongly, with a slight smokiness in the background. Very little black malt is evident, which should be the case for a brown porter. Fermentation profile is quite estery, with pear, plum and acetate aromas. Alcohol is more apparent than in most examples of this style—verges on a Winter Warmer. (8/12)

Appearance: Excellent clarity and decent head retention. Deep brown color indicates restrained use of highly kilned malts. (3/3)

Flavor: The malt profile is complex—initially has crystal and toffee notes, then the roasted malts gradually take over and carry through to a dry finish. There is an assertive fermentation character, similar to the aroma but with the addition of raisins. The hop bitterness is moderate and in balance, but there is a slight vinous quality in the finish. (13/20)

Mouthfeel: The soft malt character is a positive attribute, but there is some harshness and astringency in the finish more akin to the robust variant of this style. Alcoholic warmth is evident. (3/5)

Overall Impression: Good beer that would be a little smoother with a less attenuative yeast. A few more gravity points would balance the roasted malts in the finish and mitigate the astringency and dryness. Although there is very little black patent character, I would score this at least 5 points higher as a robust porter due to the dryness and alcohol. (6/10)

Total Score: (33/50)



Aroma: Moderately strong dark chocolate aroma. Light roasted malt, quite grainy with a hint of licorice. Some malt sweetness and caramel follow. Light esters and alcohol. Little if any hops. Clean. Roasted malt dominates, and develops a fresh "coffee ground" character over time. (9/12)

Appearance: Huge tan head, frothy; settled slowly. Very dark brown. Opaque in room light, but a flashlight reveals a brown color with garnet highlights, and very good clarity. (3/3)

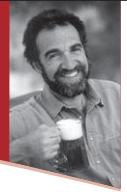
Flavor: Significant roast, almost burnt. Suggestive of a robust porter in grain profile. Moderate caramel sweetness with some esters. Moderate bitterness and hop flavor. Some licorice and chocolate. The bitterness seems to come more from roasted grain than an overtly hoppy character. Dry finish with lingering roast. Clean flavor. Roast is overdone and dominates, but hop balance is fine. Light alcohol flavor. Caramel and dark malts give a burnt-sugar flavor. (13/20)

Mouthfeel: Medium to medium-full body; seems pretty big for style. Moderate carbonation. Light alcohol warming. Some astringency from grain. (4/5)

Overall Impression: Hop balance suggests a brown porter but grain says robust—this falls between the two porter styles. Really tasty and drinkable but it has an aggressive edge not found in most brown porters. Not really enough hop character/bitterness for a robust porter, but closer to it than to a brown porter. Has more style issues than brewing faults. (6/10)

Total Score: (35/50)

by Charlie Papazian



A Sense of Balance

If I was blind, could not hear, could not taste, smell, or experience the sensation of touch, what would my life be like? Would I be able to experience or interact with my surroundings—with life itself? Given these thoughts on one particularly contemplative day, I drifted to a time of swaying in a hammock. I thought we had only five senses. But as I swayed with eyes closed I realized that balance is surely a sixth sense and as much a part of our being as touch, taste, smell, hearing and sight.

What is this sense of balance all about? Perhaps it is about movement in any of several dimensions and the tendency to achieve equilibrium dependent on given situations. The situation determines the state of pleasantness toward which we strive.

That is certainly a mind full. Vacations and beer inspire “mindfuls” for me. And with another beer I began to think about how we evaluate beer. Certainly tasting, smelling, feeling, seeing and even listening to beer have been easily quantifiable exercises for me as a beer brewer and evaluator. But when the subject of “balance” comes up there seems to be nothing that can perfectly quantify a beer’s balance as appropriate or not. Beer evaluators often skim the surface when it comes to a discussion of beer balance, perhaps because it isn’t considered as important as the other five senses. But now I realize that in actuality we have at least six senses as I’ve considered above.

So what is beer balance? Is it a tendency for the entire organism that is beer to achieve a “center” and an equilibrium depending on a given situation, the “situation” being determined not only by beer type but also the mood and state of mind

of the beer drinker? Is it a determination to achieve overall pleasantness?

OK, I admit I am getting a bit metaphysical, philosophizing on the meaning of

Claude of Neptune

All-Grain Recipe

Ingredients

for 5 U.S. gallons (19 liters)

7.5 lb	(3.4 kg) Munich malt (10 degrees L)
8.0 oz	(225 g) Belgian aromatic malt
4.0 oz	(113 g) German sauer malt
4.0 oz	(113 g) German CaraMunich® malt (75° L)
4.0 oz	(113 g) Belgian Special-B malt
4.0 oz	(113 g) Honey malt
1.0 lb	(454 g) flaked corn
0.75 oz	(21 g) Vanguard whole hops 5% alpha (3.8 HBU/105 MBU) 60 minute boiling
0.50 oz	(14 g) Perle whole hops 7.5% alpha (3.3 HBU/92 MBU) 60 minute boiling
1.25 oz	(35 g) Liberty whole hops 4.2% alpha (5.3 HBU/147 MBU) 15 minute boiling
1.0 oz	(28 g) Mt. Hood hops 6% alpha (6 HBU/168 MBU) 10 minute boiling
0.50 oz	(14 g) Simcoe hop pellets 10% alpha, 1 minute steep
0.50 oz	(14 g) Crystal hop pellets 5.5% alpha, dry hop
0.25 tsp	(1 g) powdered Irish moss
Your favorite lager yeast	
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Original Target Gravity: 1.058 (14.5 B)

Final Target Gravity: 1.020 (5 B)

IBUs: about 45

Approximate Color: 19 SRM (38 EBC)

Alcohol by Volume: 5.3%

Directions

A step infusion mash is employed to mash the grains. Add 10 quarts (9.5 liters) 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 5 quarts (4.8 liters) of boiling water and add heat to bring temperature up to 155° F (68 C) and hold for about 30 minutes. Then raise temperature to 167° F (75° C), lauter and sparge with 3.5 gallons (13.5 liters) of 170° F (77° C) water. Collect about 5.5 gallons (21 liters) of runoff. Add 60-minute hops and bring to a full and vigorous boil.

The total boil time will be 60 minutes. When 15 minutes remain add the 15-minute hops. When 10 minutes remain add the 10-minute hops and 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 liters) 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. If you have the capability “lager” the beer at temperatures between 35-45° F (1.5-7° C) for four to seven weeks.

Prime with sugar and bottle or keg when complete.

beer. But the enjoyment of beer inspires me in these ways, so please indulge me at least for only a few more moments.

As a brewer my goal is to combine ingredients and process, striving to produce the overall sensations of pleasantness. Whether it is a malt-accented bock beer, a hop-accented India pale ale or a fruit-accented wheat beer, what I seek in a beer is determined by the moment I am in. I will seek a different state of balance depending on my mood and the environment in which I am enjoying beer. So naturally I choose to surround myself with beer diversity.

Beer diversity is often defined by stylistic guidelines. But style guidelines are only the beginning of the adventure, flavor and diversity of beer. Going beyond established norms and standards satisfies my longing to achieve different states of balance with my enjoyment of beer. In the final experience is it really about flavor, aroma, mouthfeel, listening and appearance? Perhaps the only thing that matters is a sense of balance. And that's all.

Claude of Neptune is the result of a combination of ingredients that I have never put together before. It is a frontier beer for me. I only realized after I had brewed it that it was mostly an exercise in balance. Balancing ingredients to achieve a new beer sensation that would be pleasant, I had achieved success.

The original all-grain version of Claude of Neptune does not use any pale or Pilsener type malts. The full flavor of Munich malt provides the foundation. The blend of aromatic, sauer, dark Munich, uniquely caramelized Special B and honey-accented malts add dimension and their combination, I admit, has the potential of becoming an inharmonious medley. I decided to add a bit of flaked corn to help lighten the balance. With so much malt emphasis I am careful not to overpower the beer with assertively oriented hops. Vanguard, Perle and Liberty provide earthy foundations of bitterness and flavor. At the other end of the hop spectrum a delicate touch of Simcoe and Crystal hops offer subdued overtures that lightly dance and only briefly linger in the aroma and taste experience.

Claude of Neptune

Mash/Extract Recipe

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

6.0 lb	(2.7 kg) amber malt extract syrup or 7.25 lb (3.3 kg) amber DRIED malt extract
1.5 lb	(680 g) honey
8.0 oz	(225 g) Belgian aromatic malt
4.0 oz	(113 g) German CaraMunich® (75° L) malt
4.0 oz	(113 g) Belgian Special-B malt
0.75 oz	(21 g) Vanguard whole hops 5% alpha (3.8 HBU/105 MBU)
	60 minute boiling
0.75 oz	(21 g) Perle whole hops 7.5% alpha (5.6 HBU/158 MBU)
	60 minute boiling
1.5 oz	(42 g) Liberty whole hops 4.2% alpha (6.3 HBU/176 MBU) 15 minute boiling
1.0 oz	(28 g) Mt. Hood hops 6% alpha (6 HBU/168 MBU) 10 minute boiling
0.5 oz	(14 g) Simcoe hop pellets 10% alpha, 1 minute steep
0.5 oz	(14 g) Crystal hop pellets 5.5% alpha, dry hop
0.25 tsp	(1 g) powdered Irish moss
	Your favorite lager yeast
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Directions

Heat 1 quart (1 liter) 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). Then pass the liquid and grains into a strainer and rinse with 170° F (77° C) water. Discard the grains.

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

The total boil time will be 60 minutes. When 15 minutes remain add the 15-minute hops. When 10 minutes remain add the 10-minute hops and Irish moss. When 1 minute remains add the 1-minute hops. After a total wort boil of 60 minutes turn off the heat.

Immerse the covered pot of wort in a cold water bath and let sit for 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 gallons (7.6 liters) of cold water has been added. If necessary, add cold water to achieve a 5-gallon (19-liter) batch size. Aerate the wort very well.

Pitch the yeast when temperature of the 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. If you have the capability "lager" the beer at temperatures between 35-45° F (1.5-7° C) for four to seven weeks.

Prime with sugar and bottle or keg when complete.

Claude of Neptune is different. It doesn't fit the mold of any particular style. Yet it is balanced for what it is. It achieves the experience of pleasantness.

Isn't that what beer is all about?

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

Charlie Papazian is president of the Brewers Association.



by Amahl Turczyn Scheppach

Meadlennium 2006

Mead, or honey wine, is a relatively simple fermented beverage to craft. But as many have found, making a competition-worthy mead can be very difficult.

Mead competitions have been getting more and more popular, however, so there are plenty of opportunities for homebrewers to receive valuable feedback on their skills at making this ancient and delicious drink. Ronald C. Bach has organized one of these competitions for the past seven years of its nine-year history: the Central Florida Home Brewers' Meadlennium.



KUDOS

AHA/BJCP Sanctioned Competition Program
BEST OF SHOW

August 2005

Tillamook County Fair Homebrew Competition, 42 entries—*Tom Litwin*

November 2005

10th Knickerbocker Battle of the Brews, 173 entries—*Manny Holl, Poughkeepsie, NY*

December 2005

Happy Holiday Homebrew Competition, 302 entries—*Thomas Eibner, St. Paul, MN*

January 2006

Upper Mississippi Mash-Out—*Owen Halpenny, Asheville, NC*
Meadlennium, 102 entries—*Howard Curran and Preston Hoover, Oviedo, FL*

February 2006

Anchorage Fur Rondy Homebrew Competition—*Steve Schmitt, Anchorage, AK*
12th Annual Boston Homebrew Competition, 346 entries—*John W. Thomas, Chicopee, MA*
Big Beautiful Belgians AHA Club-Only Competition, 50 entries—*Steve Cook, Burbank, CA*
Beerfest—*John Killmister, Melbourne, VIC*
Transatlantic Showdown 2006, 42 entries—*Richard Pidgeon, Virginia Beach, VA*
BABBLE Brew-Off 2006, 199 entries—*Dan Schlosser, Wauwatosa, WI*

CFHB created Meadlennium in January 1997 after recognizing the need for an event that featured only mead. It started small with 18 entries from Orlando; by 2005 it hit 129 entries from as far away as Alaska and China.

This year brought in 102 entries from 14 different states, including Alaska. Meadlennium has been held at different locations over the years, but the last three have been at the home of Preston and Teresa Hoover, members of the Central Florida Home Brewers.

McCollum Mead

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

Ingredients

17.0 lb	orange blossom honey (7.71 kg)
1.0 T	yeast energizer (14.8 mL)
1.0 tsp	yeast nutrient (4.9 mL)
2.0 tsp	Irish moss (9.8 mL)
1 packet	Lalvin D-47 yeast (in a starter)

Original Target Gravity: 1.110

Final Target Gravity: 1.016

Directions

Primary ferment in glass at approx. 72° F
Rack to glass at 6 weeks at approx. 72° F
Rack to glass at 10 weeks at approx. 72° F
Rack to glass at 17 weeks at approx. 72° F
Add 1 cup (236.6 mL) strong brewed tea, for tannin, in the primary.
Add 1 tsp (4.9 mL) tartaric acid at the last racking.
Add 2.5 tsp (12.3 mL) potassium sorbate at the last racking.
Bottle at 20 weeks.

Celebrate
May 15 - 21, 2006

AMERICAN CRAFT BEER WEEK
www.AmericanCraftBeerWeek.org

Take the Great American Beer Tour and you could win an all expense paid trip to the 2006 Great American Beer Festival® in Denver, Colorado!

- Visit local breweries in your area and earn points to win
- Check out www.GreatAmericanBeerTour.org for details on how to participate

Brewers Association
www.beertown.org

BA
BREWERS ASSOCIATION

The CFHB hold a special mead training class each January a couple weeks prior to the competition. The class, which varies year to year, is put on by Bach and other knowledgeable mead makers. Most recently, it consisted of tasting different honeys to demonstrate the different flavors one can expect to find in varietal honey. Additionally, there are mead making tips, mead experiments (such as making a mead with different yeasts and sampling the results), and

always a section on judging meads along with a practice judging session. Attendees at this event are awarded a Central Florida Home Brewers Mead Certification.

As a result, Florida has developed what Bach considers the largest cadre of highly trained mead judges in the nation. More than 50 percent of the flights at Meadlennium are judged by a BJCP National level mead-trained judge or higher.

Meadlennium is always held the last weekend in January, with the awards ceremony at the Central Florida Home Brewers club meeting the first Sunday in February. Awards for first, second and third place are given for each of the nine BJCP subcategories and include specially designed medallions by Hermann Works in Missouri. Additionally, each first place and Best of Show award winner receives a stylish etched glass or mug.



AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR



MAY 2006

May 6

TRASH XVI Wexford, PA. Contact: Mike Ameel, Phone: 412-527-2780, E-mail: trasheditor@trashhomebrewers.org Web: trashhomebrewers.org

May 7

Big and Huge Homebrew Competition Madison, WI. Contact: Mark Schnepper, Phone: 608-882-4523, E-mail: mschnepper@yahoo.com Web: www.mhtg.org/contests/MHTG%20Contests.html

May 13

Mayfaire Competition Woodland Hills, CA. Contact: Steve Cook, Phone: 818-563-5211, E-mail: SCook4208@msn.com, Web: www.maltosefalcions.com

May 13

U.S. Open Charlotte, NC. Contact: William Lynch, Phone: 704-905-9098, E-mail: brewcnc@yahoo.com, Web: www.carolinabrewmasters.com

May 13

Green Mountain Homebrew Competition Burlington, VT. Contact: Dave Blumenthal, Phone: 802-229-9810, E-mail: competition@studiozoic.com, Web: www.mashers.org

May 19

Enchanted Brewing Challenge Albuquerque, NM. Contact: Stan Hieronymus, Phone: 505-898-7971, E-mail: brewer@nmbeer.org, Web: www.nmbeer.org/ebc

May 19

Amber Waves of Grain 10th Annual Western NY Homebrew Competition Buffalo/Niagara Falls, NY. Contact: Joe Narduccia, Phone: 716-626-0610, E-mail: awog@niagarabrewers.org, Web: www.niagarabrewers.org/awog

May 20

B.E.E.R.'s 10th Annual Brew-Off Nesconset, NY. Contact: Dan McLaughlin, Phone: 631-650-1513, E-mail: Saaz@optonline.net, Web: hbd.org/beer

May 20

The BrewMasters Open Alpharetta, GA. Contact: Robert Carlton, Phone: 770-645-1777, E-mail: BeerNec@aol.com, Web: www.BrewMastersOpen.com

May 20

24th Annual Oregon Homebrew and Microbrew Festival Corvallis, OR. Contact: John Sterner, Phone: 541-715-5107, E-mail: sterner@peak.org, Web: www.hotv.org

May 20

6th Annual May Mead Madness New Bern, NC. Contact: Frank Russo or Dick Weiss, Phone: 252-636-8970, E-mail: FJRusso@Yahoo.com, Web: www.homebrewhaus.biz/MMM06/Mead-Madness-Registration.htm

May 21

2006 California State Fair Home Brewing Competition Sacramento, CA. Contact: J.J. Jackson, Phone: 916-348-6322, E-mail: jjjaxon@cwt.net, Web: www.calbrewers.com

May 26

14th Great Alaska Craft Beer and Homebrew Competition (Festival) Haines, AK. Contact: Rachael Juzeler, Phone: 907-780-5866, E-mail: seak-fair@aptalaska.net or hainesbrew@yahoo.com

May 27

The Celtic Brew Off Arlington, TX. Contact: Jamison Kirmser, Phone: 817-223-5587, E-mail: kirmser@sbcglobal.net, Web: www.hbd.org/kobb

JUNE 2006

June 1

North American Beer Awards Idaho Falls, ID. Contact: Gregg Smith, E-mail: Gsmithbeer@aol.com, Web: NorthAmericanBrewers.org

June 3

2006 BUZZ Off West Chester, PA. Contact: Christopher Clair, Phone: 610-363-3812, E-mail: buzzclub@verizon.net, Web: hbd.org/buzz

June 3

DEA 2006 Greenville, NC. Contact: Brian Mentzer, Phone: 252-321-1965, E-mail: stinkeeee@yahoo.com Web: www.downeastalers.com

June 3

12th Annual Boneyard Brew-Off Champaign, IL. Contact: Joshi Fullop, Phone: 217-352-8417, E-mail: joshifullop@yahoo.com, Web: www.uiuc.edu/ro/BUZZ/brewoff.html

June 3

JRHB Dominion Cup Richmond, VA. Contact: James Elliott, Phone: 804-301-4301, E-mail: woodyelliott@CycleVa.com, Web: www.jrhomebrewers.org

June 4

11th Annual Big Batch Brew Bash Houston, TX. Contact: Donald Sajda, Phone: 281-351-7541, E-mail: rodon@flash.net, Web: www.thekgb.org

June 8

EHG 2006 Aurora Brewing Challenge Edmonton, AB. Contact: Arnold Moerth, Phone: 780-451-9117, E-mail: armoerth@telusplanet.net, Web: www.ehg.ca

June 10

San Joaquin Fair Homebrew Competition Stockton, CA. Contact: Rick Stanton, Phone: 209-957-2764, E-mail: ruudrick@aol.com, Web: www.brewangels.com/

June 16

7th Annual New York State Fair Home Brew Competition Syracuse, NY. Contact: John Barnes, Phone: 315-673-4334, E-mail: jabarnes1@aol.com, Web: www.nysfair.org/statefair OR www.hbd.org/scbc/

June 22-23

28th Annual AHA National Homebrew Competition 2nd Round Contact: Janis Gross, Phone: 888-822-6273 x 134, E-mail: janis@brewersassociation.org, Web: www.beertown.org/events/nhc

This year's Best of Show winner was a 24B Semi-Sweet Traditional Mead called McCollum Mead, made by the team of Howard Curran and Preston Hoover. This recipe was brewed with orange blossom honey from an apiarist (that's beekeeper

2006 INTERNATIONAL MEAD FESTIVAL

HOME COMPETITION RESULTS

February 10, Boulder, Colo.
www.meadfest.com

Category 24A: Dry Mead (11 entries)

1. Angel Price, Washington, D.C., Old Man Mead
2. John Sather, Orlando, Fla.
3. Trevor LaRene, Green Bay, Wis.

Category 24B: Semisweet Mead (23 entries)

1. Jeffery Swarenjin, Tulsa, Okla., Old Tippecanoe
2. Roger McIntire, Willow Park, Texas, North Chase Dark Yopon
3. Davis Robinson, Chandler, Ariz., Pecan Honey Mead

Category 24C: Sweet Mead (27 entries)

1. Chris Dunne, Denver, Colo., B.B. Special Sage
2. Jeffery Swarenjin, Tulsa, Okla., Abigail's Orange Blossom Special
3. Lloyd Snyder, White Hall, Md.

Category 25A: Cyser (15 entries)

1. Ben and Becky Starr, Durham, N.C., Starrlight Mulled Apple Cyser (Best of Show)
2. Matthew Dickeson, Alexandria, Va., Happily Appley Mead
3. Ed Walkowski, Dalton, Pa., Applejack Cyser

Category 25B: Pymet (10 entries)

1. Kathy Thompson, Lafayette, Colo.
2. Ed deJager, Longmont, Colo., Champagne Pymet
3. Jason Ditsworth, Anchorage, Alaska, Sock Dropper Pymet

Category 25C: Other Fruit Melomel (68 entries)

1. Raven and Midian Niles, Coralville, Iowa
2. Curt and Kathy Stock, St. Paul, Minn., All About Rhubarb
3. Ed Walkowski, Dalton, Pa., Black Current Melomel

Category 26A: Metheglin (23 entries)

1. Michael Kiker, Anchorage, Alaska, Speicy Spicye
2. Angel Price, Washington, D.C., Freya Mead
3. Roger Gibson, Liberty, Mo., Jamaica Mead

Category 26B: Braggot (7 entries)

1. Kevin deLange, Aurora, Colo., Shagl Braggot
2. Glenn and Dani Exline, Rockledge, Fla., St. Bernardus Strong Dark Braggot
3. Dennis Frank, Westminster, Colo., Braggot

Category 26C: Open (28 entries)

1. Roger McIntire, Willow Park, Texas, North Chase Waahhhooooeee
2. Richard Krahl, Thornton, Colo., St. Nick's Holiday Mead
3. Beryl Ouimette, Downers Grove, Ill., Taelikkus

to the entomologically challenged) right down the road. Her bees also produce a citrus honey, mostly gathered from grapefruit flower nectar, and a gallberry honey from a plentiful local wildflower.

For technique, the pair chooses not to heat their must, "to preserve the aroma, body and flavor," Curran says. Their meticulous attention to sanitation prevents any problems with contamination. They almost always pitch a large yeast starter for meads, and they allow three days for proper buildup of yeast cells before anaerobic fermentation ensues. Curran also insists on fermenting in a closet his wife sacrificed for the cause, which may be one of the secrets to this mead's success. Hats off to the closet meadmakers!

Amahl Turczyn Scheppach is a former associate editor of Zymurgy and an amateur beekeeper.

AHA SPECIAL EVENTS

April 22

AHA Membership Rally—Brooklyn Brewery Brooklyn, NY. Contact: Kathryn Porter, Phone: 888-822-6273 x 123, E-mail: Kathryn@brewersassociation.org, Web: www.beertown.org/homebrewing/rally.html

April 29

AHA Membership Rally—Deschutes Brewery Bend, OR. Participating Breweries: Silver Moon, Cascade Lakes, Bend Brewing and McMenamin's Old St. Francis School. Contact: Kathryn Porter, Phone: 888-822-6273 x 123, E-mail: Kathryn@brewersassociation.org, Web: www.beertown.org/homebrewing/rally.html

May 6

Big Brew National Homebrew Day Your Brewery. Contact: Kathryn Porter, Phone: 888-822-6273 x 123, E-mail: Kathryn@brewersassociation.org, Web: www.beertown.org

June 21-24

AHA National Homebrewers Conference Orlando, FL. Contact: Janis Gross, Phone: 888-822-6273, E-mail: Janis@brewersassociation.org, Web: www.beertown.org/events/hbc/index.html

TBA

AHA Membership Rally—Goose Island Beer Co Chicago, IL. Contact: Kathryn Porter, Phone: 888-822-6273 x 123, E-mail: Kathryn@brewersassociation.org, Web: www.beertown.org/homebrewing/rally.html

TIPS FOR MAKING GREAT MEADS

- Cleanliness, cleanliness, cleanliness!
- Measure all ingredients.
- Adjust the pH of your must to 4.0-5.0. Do this before pitching the yeast.
- Use yeast nutrients.
- Use a starter.
- Loosely cover the carboy or bucket for the first three days.
- Keep records no matter how boring it seems.
- Label your bottles, unless you like surprises.
- Be patient. Time can make a good mead something special. (This BOS mead is two years old.)

Trouble finding that one ingredient?

Belgian Candi Sugar, Sweet Gale, Heather Tips, Peat Smoked Malt, Cardamom Seed & More

www.bacchus-barleycorn.com



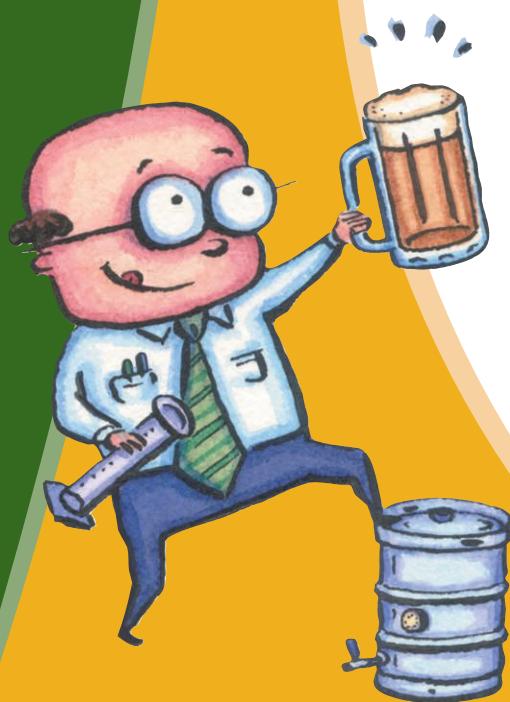
Fermentation Specialist

913.962.2501 • Fax 913.962.0008
6633 Nieman Road • Shawnee, KS 66203

We have the easy-to-find stuff too!

Reader Advisory: Warning!

These pages are rated XG (eXtra Geeky) by the Bureau of Magazine Muckymucks. Items in this section may contain raw data, graphic functions, full statistics and undiluted biochemistry. Keep away from poets, squeamish novices and others who may find the joyously technical nature of this prose to be mindbendingly conceptual or socially offensive. Also, because of the complex nature of brewing science, there is no guarantee that you will live longer, brew better or win any awards in the next homebrew competition based upon the conclusions presented here.



Fermentation processes involve complex interactions of biological, chemical and physical factors. Wort temperature, wort pH, yeast nutrient availability to the yeast cell, dissolved oxygen content and other factors all contribute to the fermentation rate and extent of fermentation of sugars by yeast.

The extent of fermentation is easily determined by measuring the percentage of the available sugars that have been metabolized by the yeast at the conclusion of the fermentation process. The extent of fermentation of sugars by yeast is most often described as the degree of attenuation associated with the yeast. Typical yeast attenuation ranges are 65 to 80 percent¹. Knowledge of yeast attenuation is important to the brewer because it describes the amount of residual sugars that will remain in the fermented beer. A larger amount of residual sugars are desired in some beer styles (e.g. doppelbocks) while fewer residual sugars are desired in other styles (e.g. American lagers).

The yeast's degree of attenuation can be thought of as an analog to a statement of chemical thermodynamic equilibrium: it tells you "how far you can go" with respect to the biochemical reaction of yeast converting fermentable sugars into ethanol and carbon dioxide. Attenuation does not, however, address the rate at which the yeast cells convert fermentable sugars into ethanol and carbon dioxide. To describe the rate kinetics associated with our favorite biochemical reaction, it is necessary to understand some of the details involved with yeast metabolic activity.

Individual yeast cells carry out their metabolic activity with virtually no regard for the activity of neighboring cells. Each cell takes in nutrients and reproduces itself at a rate that is, for most practical considerations, independent of what any other nearby yeast cell may be doing. The individual yeast cell's metabolic activity is "unsynchronized" with any of its neighbors.

Since the total number of individual yeast cells within a fermentation vessel is very large, it makes sense to consider not just the functioning of a single cell, but rather the overall functioning of the entire collection of yeast cells within the vessel.

By making the assumption that metabolic properties of a large number of individual cells can be thought of as individual, continuous functions, and that the specific activity of each individual cell can be combined together so that the properties of the group of cells are taken in aggregate, we can then treat the overall fermentation kinetics of the group of cells as a continuous function² (mathematically speaking).

To model the kinetics of a fermentation process, a mass balance of the system is required. The mass balance for an unsynchronized batch fermentation is given² by:

$$\frac{dX}{dt} = \mu X - K_d X \quad [\text{Equation 1}]$$

and

$$\frac{dS}{dt} = -\frac{\mu X}{Y} \quad [\text{Equation 2}]$$

with

μ = a function of S = $f(S)$

Where:

dX/dt = rate of change of yeast concentration (kg/m^3)/s

μ = specific yeast growth rate coefficient (s^{-1})

X = yeast concentration (kg/m^3)

K_d = yeast death-rate coefficient (s^{-1}), usually = 0 for homebrewing situations

dS/dt = rate of change of substrate concentration (kg/m^3)/s

S = substrate ("yeast food") concentration (kg/m^3)

Y = yield coefficient (kg dry yeast produced/kg "food" used to make yeast)

A substrate is defined as a reactant that is taking place in the biochemical reaction (e.g dissolved, fermentable sugars). There are numerous functional relationships between μ and S that have been proposed, but one of the most universally accepted relationships for fermentation kinetics is given by the Monod equation²:

$$\mu = \frac{\mu_{\max} S}{K_s + S} \quad [\text{Equation 3}]$$

Where:

μ = specific yeast growth rate coefficient (s^{-1})

μ_{\max} = maximum specific yeast growth rate coefficient (s^{-1})

S = concentration of rate-limiting substrate (kg/m^3)

K_s = Monod coefficient (kg/m^3)

These equations can be combined to give⁴:

$$\frac{dX}{dt} = \mu X = \frac{\mu_{\max} S X}{K_s + S} \quad [\text{Equation 4}]$$

and

$$-\frac{dS}{dt} = \frac{\mu_{\max} S X}{(K_s + S) Y} \quad [\text{Equation 5}]$$

The amount of yeast generated during the fermentation process can be described⁴ as:

$$X_t = X_0 + Y(S_0 - S_t) \quad [\text{Equation 6}]$$

Where:

X_t = amount of yeast present at time t

X_0 = amount of yeast present at time t = 0

Y = yield coefficient (kg dry yeast produced/kg "food" used to make yeast)

S_0 = substrate ("yeast food") concentration (kg/m^3) at time t = 0

S_t = substrate ("yeast food") concentration (kg/m^3) at time t

Equations 5 and 6 can be combined to eliminate X_t and can be integrated⁴ to obtain the integrated Monod equation for a growth substrate:

$$t = \frac{1}{\mu_{\max}} \left[\left(\frac{K_s}{X_0 + Y S_0} + \frac{1}{Y} \right) \ln(X_0 + Y(S_0 - S_t)) + \left(\frac{K_s}{X_0 + Y S_0} \right) \ln\left(\frac{S_0}{X_0 + Y S_0}\right) - \frac{1}{Y} \ln(X_0) \right] \quad [\text{Equation 7}]$$

Equation 7 describes the amount of time required to reduce the concentration of fermentable sugars (the substrate) initially in the wort at time t = 0 from S_0 (initial sugar concentration) to S_t (sugar concentration at time t) given the specific initial conditions and coefficients associated with the fermentation system. Based on equation 7, one thing should be apparent: the fermentation process is complex!

Fermentation Phases

Yeast cells fermenting wort progress through a series of stages as they carry out their work. The stages are listed in Table 1.

The lag phase can be thought of as an "assimilation" phase for the yeast cells; they are becoming acclimated to the wort and are absorbing nutrients and compounds in preparation for reproduction.

The log or exponential phase is a period of unrestrained reproduction. Yeast cell division is occurring at the maximum rate

possible within the wort (cell division rate is exponential). The reproduction rate is limited only by the yeast cell's own metabolic rate. Yeast biomass concentration during the log phase is given³ by:

$$X = X_0 e^{\mu(t-t_0)} \quad [\text{Equation 8}]$$

The increase of concentration of yeast cells within the wort during the log phase looks something like the plot³ shown in Figure 1.

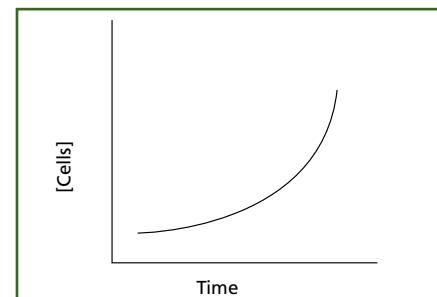


Figure 1: Yeast Cell Concentration Increase During Exponential Growth Phase

The post-log phase is characterized by a diminished rate of reproduction by the yeast cells. During this phase, the concentration of fermentable sugars has been lowered by the yeast activity during the log phase. The rate of yeast cell reproduction is becoming limited by the decreased concentration of fermentable sugars and by competition with other yeast cells. There is no longer an "infinite supply" of food for the yeast.

The stationary phase is characterized by the cessation of reproduction of the

TABLE I: STAGES OF FERMENTATION

Lag phase	Yeast cell growth is slow. Cells adapt to the new environment and take in dissolved oxygen for use in building cell walls.
Log or exponential phase	Yeast cell growth reaches its maximum rate. The cell numbers increase exponentially.
Post-log phase	Yeast cells continue growing but at a rate less than maximum.
Stationary phase	Yeast cell numbers no longer increase. Cells may continue metabolizing.
Death/Dormant phase	Cell death becomes obvious. Cell growth has either stopped or is so slow that the rate of cell death exceeds the rate of cell growth.

yeast cells. There is no longer a sufficient concentration of fermentable sugars available for cellular division to occur.

The yeast cells do continue to metabolize sugars during this phase, but they do not reproduce.

The death phase could also be described as the "dormant phase." Yeast growth stops and metabolic activity slows to a



TABLE 2: FACTORS AFFECTING YEAST DURING FERMENTATION AND EFFECTS ON FLAVOR OF FINISHED BEER

Factor	Effect on Yeast During Fermentation	Effect on Flavor & Quality of Beer
Yeast Strain	N/A	Different yeast strains produce different flavor compounds. Select strain appropriate for desired beer style.
Yeast Condition at Time of Pitching	Healthy Yeast: Short lag phase.	Optimal for good beer.
	Unhealthy Yeast: Longer than desirable lag phase.	1) Off-flavor production more likely. 2) Potential for contamination increased.
Amount of Yeast Initially Pitched (Pitching Rate)	High Initial Cell Count: Yeast ferment wort more quickly	Almost always desirable for homebrewers.
	Low Initial Cell Count: 1) Yeast ferment wort more slowly (increased chance of stuck fermentation). 2) Decreased attenuation.	1) Fusel alcohols, esters and diacetyl production increased. 2) Residual sweetness possibly higher than desired. 3) Potentially higher sulfur dioxide levels.
Dissolved Oxygen Content (Wort Aeration)	High Initial Dissolved Oxygen Content: 1) Short lag phase. 2) High yeast viability.	Almost always desirable for homebrewers.
	Low Initial Dissolved Oxygen Content: 1) Longer than desirable lag phase. 2) Low yeast viability	Fusel alcohols, esters, diketone and acetaldehyde production increases.
Wort Composition (Micronutrient Availability)	Influences speed of fermentation. Readily available micronutrients allow for faster fermentation; faster is better.	Off-flavors more likely if fermentation is slow.
Wort pH	Higher pH increases organic acid formation	Sour flavor.
Wort Temperature During Fermentation	Too High for Yeast Strain: Rapid fermentation due to increased metabolic rate. Higher metabolic rate leads to increased production of compounds other than ethanol and CO ₂ .	Increased amounts of fusel alcohols, esters, lactones, organic acids, sulfur compounds and diacetyl.
	Optimal Range for Yeast Strain: Ideal fermentation condition.	Always desirable.
	Too Low for Yeast Strain: Slow, incomplete or no fermentation	1) Poor attenuation. 2) Residual sweetness possibly higher than desired.
Flocculation Characteristics of Yeast Strain	Highly Flocculent Yeast Strain: Premature settling possible. Decreased attenuation possible.	1) Clear beer. 2) Higher residual sweetness. 3) Higher diacetyl level. 4) Fuller body possible.
	Less Flocculent Yeast Strain: Yeast remain in suspension longer. Increased attenuation.	1) Potentially hazy beer. 2) Lower residual sweetness. 3) Drier beer. 4) Thinner body possible. 5) "Yeasty" flavor possible.

halt. Yeast flocculates and settles to the bottom of the fermentation vessel.

The overall yeast cell concentration through the various fermentation phases looks something like the plot³ shown in Figure 2:

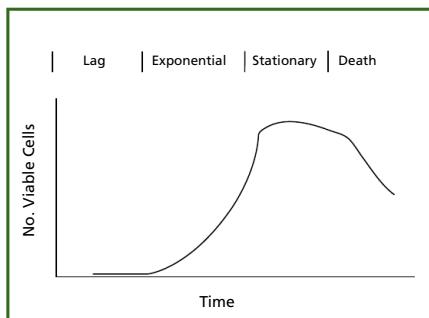


Figure 2: Yeast Cell Concentration Through Fermentation Phases

Conclusion

So how do we use this information to brew better beer? To understand the fermentation process, the brewer must understand the factors that affect fermentation rate characteristics and how those factors impact the flavor profile of the beer. Table 2 summarizes these important factors³. Understanding the physical and chemical conditions that optimize the performance of the yeast is critical for brewing good beer.

To ensure success:

1. Select a yeast strain that is appropriate for the desired beer style.
2. Use fresh, healthy yeast.
3. Pitch as large a quantity of yeast as is practical.
4. Adequately aerate wort prior to pitching yeast.
5. Ensure that wort contains adequate yeast nutrients.
6. Ferment beer within a temperature range appropriate for the yeast strain.

Chris Bible is a chemical engineer (B.S., M.S.) currently working in the engineered materials division of J.M. Huber Corporation. He lives in Knoxville, Tenn. with his wife and son and has been homebrewing for more than seven years. Chris especially enjoys making and drinking stouts and porters.

References

1. Rabin, Dan and Carl Forget. *The Dictionary of Beer & Brewing*, 2nd Edition. Brewers Publications, 1998, p.23.
2. Perry, Robert H. and Don W. Green. *Perry's Chemical Engineer's Handbook*, 7th Edition. McGraw-Hill, 1997, p.24-16 thru 24-18.
3. www.np.edu.sg/~dept-bio/biochemical_engineering/fermentation_tutorial/fermentation_kinetics.htm
4. <http://aem.asm.org/cgi/content/full/64/6/2044>
5. Hough, J.S. et.al. *Malting and Brewing Science Volume 2: Hopped Wort and Beer*. Aspen, 1999.

Related Reading

1. Wang, D., et.al. "Fermentation Kinetics of Different Sugars by Apple Wine Yeast *Saccharomyces cerevisiae*." *Journal of the Institute of Brewing*. 2004: 110(4), 340-346.

Attention AHA MEMBERS

Update your info
ONLINE ←

CHANGE WITH EASE YOUR
MAILING ADDRESS • EMAIL • PHONE
AHA TECHTALK SUBSCRIPTION

Find out your expiration date!
... and more to come.

To login you'll need your member number located on both your membership card and your Zymurgy magazine mailing label.

Brewers Association
beertown.org

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org

BA BREWERS ASSOCIATION

Absolutely Everything! For Home Brewing

HUGE Website –
www.morebeer.com



Free Shipping On Orders Over \$59!

Newly redesigned website! *Absolutely Everything!* for Home Brewing and Beer Dispensing. Over 2500 products with photos, in-depth descriptions, and tons of how-to information. Weekly product releases, web-only specials, FAQ, and much, much more.

LIFE IS FULL OF TOUGH CHOICES, THESE ARE THE FUN ONES...

With 10 base frames and up to 20 options to choose from, any brewing dream can be realized!



1-800-528-4056 • Request Our Free 87 pg Color Catalog • www.morebeer.com

Please Call For Wholesale Inquiries

YOUR SOURCE FOR HOMEBREW SUPPLIES

To list here and on www.beertown.org,
call Chris Pryor at 303.447.0816 ext. 143 or Linda Starck at 303.447.0816 ext. 109.

Alabama

The Wine Smith
6800 A Moffett Road (US Hwy 98)
Mobile, AL 36618
(251) 645-5554
FAX (251) 645-6446
winesmith@BellSouth.net
www.thewinesmith.biz
A Complete line of brewing ingredients and fermentation, bottling and kegging supplies.

Werner's Trading Company
1115 4th Street SW
Cullman, AL 35055
(800) 965-8796
FAX (256) 734-5687
rob@wernerstradingco.com
www.wernerstradingco.com
The unusual store—beer, wine supplies, grills, spices, bikes, Orvis, knives.

Arizona

Brew Your Own Brew, LLC
2564 North Campbell Ave. #106
Tucson, AZ 85719
(520) 322-5049;
Toll free (888) 322-5049
www.brewyourownbrew.com

Homebrewers Outpost & Mail Order Co.
801 South Milton Road
Flagstaff, AZ 86001
(928) 774-2499;
(800) 450-9535
FAX (928) 774-8765
outpost@homebrewers.com
www.homebrewers.com

What Ale's Ya
6363 West Bell Road
Glendale, AZ 85308
(623) 486-8016
way2brew@mindspring.com

Arkansas

Fermentables Homebrew & Winemakers Supply
3915 Crutcher
North Little Rock, AR 72118
(501) 758-6261
ferment@fermentables.com
www.fermentables.com
Fermentables offers an extensive line of beer, wine and cheese making supplies.

California

Beer, Beer & More Beer - Northern California
975 Detroit Avenue, Unit D
Concord, CA 94518
(800) 600-0033
jp@morebeer.com
www.morebeer.com

Beer, Beer & More Beer - Southern California
1506 Columbia Avenue #12
Riverside, CA 92507
(800) 62-BREWER
jp@morebeer.com
www.morebeer.com

The Beverage Company, Beer, Wine & Cheesemaking Supply
2990 East Street
Anderson, CA 96007
(530) 365-4371; (800) 317-9963
maltbyeult@aol.com
www.winemakingbrewingco.com
Over 2000 items of interest to brewers and winemakers!

The Beverage People
840 Piner Rd. #14
Santa Rosa, CA 95403
(707) 544-2520; (800) 544-1867
FAX (707) 544-5729
www.thebeveragepeople.com

Brewers Discount
8565 Twin Trails Dr.
Antelope, CA 95843
(916) 723-8859;
(800) 901-8859
FAX (916) 723-8859
sales@brewersdiscount.com
www.brewersdiscount.com

Even You Can Brew

3402 N Blackstone, Suite 124
Fresno, CA 93726
(559) 681-8672
FAX (559) 274-0754
service@evenyoucanbrew.com
www.evenyoucanbrew.com
Located inside Hardwick's Brier Shop at the Manchester Center.

Hi-Time Wine Cellars

250 Ogle Street
Costa Mesa, CA 92627
(800) 331-3005; (949) 650-8463
FAX (949) 631-6863
hitimeclrs@aol.com
www.hitimewine.net
Hi-Time carries 1,000-plus beers (craft beers & imports), "Shrine Of The Brew God" homebrew kits and White Labs yeasts as well as wine, spirits and cigars.

Hop Tech

6398 Dougherty Rd. Ste 7
Dublin, CA 94568
(800) 379-4677; (800)-DRY-HOPS
FAX (925) 875-0248
orders@hoptech.com
www.hoptech.com

Over 1000 items of interest to homebrewers and winemakers!
Hops, Grains, Yeasts, Root Beer, Liqueurs, Wine Kits & Supplies. "Home Brew" A Hobby You Can Drink.

HydroBrew

1319 South Coast Highway
Oceanside, CA 92054
(760) 966-1885
FAX (760) 966-1886
hydrobrew@sbcglobal.net
www.hydrobrew.com
Homebrewing and hydroponics supplies—Serving the San Diego area.

Morning Glory Fermentation Supply

6601-C Merchandise Way
Diamond Springs, CA 95619
(866) 622-9660
FAX (866) 622-3124
sales@morninggloryfermentation.com
www.morninggloryfermentation.com
Great Selection. Awesome service. Secure online ordering.

Napa Fermentation Supplies

575 3rd St., Blg. A
(Inside Town & Country Fairgrounds)
P.O. Box 5839
Napa, CA 94559
(707) 255-6372;
FAX (707) 255-6462
wineyes@aol.com
www.napafermentation.com
Serving all of your homebrew needs since 1983!

Original Home Brew Outlet

5528 Auburn Blvd., #1
Sacramento, CA 95841
(916) 348-6322
FAX (916) 348-0453
jjjaxon@cwnet.com
www.go.to/homebrew_outlet/

O'Shea Brewing Company

28142 Camino Capistrano
Laguna Niguel, CA 92677
(949) 364-4440
osheabrewing@sbcglobal.net
www.osheabrewing.com
Southern California's largest and oldest homebrew store.

Seven Bridges Co-op Organic Homebrew Supplies

325A River Street
Santa Cruz, CA 95060
(800) 768-4409
FAX (831) 466-9844
7bridges@breworganic.com
www.breworganic.com
Complete selection of organically-grown brewing ingredients. Supplies and equipment too! Secure online ordering.

Stein Fillers

4160 Norse Way
Long Beach, CA 90808
(562) 425-0588
brew@steinfillers.com
www.steinfillers.com

William's Brewing

2594 Nicholson Street
San Leandro, CA 94577
(800) 759-6025
service@Williamsbrewing.com
www.Williamsbrewing.com

Colorado

Beer and Wine at Home

1325 W. 121st Ave.
Westminster, CO 80234
(720) 872-9463
FAX (720) 872-1234
bob@beerathome.com
www.beerathome.com

Beer at Home

4393 S. Broadway
Englewood, CO 80110
(303) 789-3676; (800) 789-3677
FAX (303) 781-2388
beer@beerathome.com
www.beerathome.com

The Brew Hut

15108 East Hampden Ave.
Aurora, CO 80014
(303) 680-8898; (800) 730-9336
www.thebrewhut.com
Your one-stop brew shop. Beer, Wine, Mead and Soda. We have it all!

Hops and Berries

125 Remington St
Ft. Collins, CO 80524
(970) 493-2484
hopsandberries@gmail.com
www.hopsandberries.com
Home Brew and Wine Making Supplies in Fort Collins!

Lil Ole Winemaker

516 Main St.
Grand Junction, CO 81501
(970) 242-3754; (888) 302-7676

My Home Brew Shop & Brew on Premise

5923 N. Academy
Colorado Springs, CO 80918
(719) 528-1651
info@myhomebrew.com
www.myhomebrew.com
Your complete source for Brewing Beer and Wine! We offer both On-Premise Beer and Wine making!

Stomp Them Grapes

2563 15th Street 101
Denver, CO 80211-3944
(303) 433-6552; (888) 99-STOMP
FAX (303) 433-6554

Connecticut

Beer & Wine Makers

Warehouse
290 Murphy Road
Hartford, CT 06114
(860) 247-2919
FAX (860) 247-2969
bwmwct@cs.com
www.bwmwct.com

Areas largest selection of beer and wine making supplies. Grain crushing and classes.

Maltose Express

887 Main St. (Rte 25)
Monroe, CT 06468
(203) 452-7332;
(800) MALTOSE
FAX (203) 445-1589
sales@maltose.com
www.maltose.com
Connecticut's largest homebrew & winemaking supply store owned by the authors of *Clonebrews & Beer Captured*. Buy pre-made kits for all 300 recipes in Szamatulski's books.

Florida

Heart's Homebrew

6190 Edgewater Dr.
Orlando, FL 32810
(800) 392-8322; (407) 298-4103
FAX (407) 298-4195
www.Heartshomebrew.com

Homebrew Den

1350 E. Tennessee St. #B-3
Tallahassee, FL 32308
(800) 923-BREW
FAX (850) 219-0910
www.HomebrewDen.com
Info@HomebrewDen.com
Providing supplies, equipment and advice for making beer, wine, mead and cider for over 10 years.

Just Brew It

4545-1 Shirley Ave.
Jacksonville, FL 32210
(904) 381-1983
info@justbrewitjax.com
www.justbrewitjax.com
Conveniently located in the Riverside Village Shopping Center. Please see Web page for store hours.

Sunset Suds, Inc.

P.O. Box 1444
Crawfordsville, FL 32326
(850) 926-3204
FAX (850) 926-3204
headquarters@sunssetsuds.com
www.sunsetsuds.com

Georgia

Beer Necessities

9850 Nesbit Ferry Road #9
Alpharetta, GA 30022
(770) 645-1777
FAX (770) 945-1006
beerne@aol.com
www.BeerNecessities.com
www.brewvan.com

Idaho

Brew Connoisseurs (Brew Con)

3894 W State Ave.
Boise, ID 83706
(208) 344-5141
FAX (208) 344-5141
kc83634@aol.com
www.brewcon.com

Don't settle for less, brew the best!

Illinois

Brew & Grow

1824 N. Beasley Ct.
Chicago, IL 60622
(773) 395-1500
www.altgarden.com
Check out our new store in Rockford, IL (815) 874-5700

Brew & Grow

2379 Bode Rd.
Schaumburg, IL 60194
(847) 885-8282
www.altgarden.com
Check out our new store in Rockford, IL (815) 874-5700

The Brewer's Coop

30W114 Butterfield Rd.
Warrenville, IL 60555
(630) 393-BEER
FAX (630) 393-2323
info@thebrewerscoop.com
www.TheBrewersCoop.com

Chicagoland Winemakers Inc.

689 W. North Ave.
Elmhurst, IL 60126-2132
(630) 834-0507; (800) 226-BREW
FAX (630) 834-0591
cwinemaker@aol.com
www.cwinemaker.com

Fox Valley Homebrew & Winery Supplies

58 E. Galena
Aurora, IL 60505
(630) 892-0742
www.foxvalleybrew.com
Full line of Quality Beer & Wine Making Supplies. Great Prices & Personalized Service

Home Brew Shop

225 W. Main St.
St. Charles, IL 60174
(630) 377-1338
FAX (630) 377-3913
www.homebrewshopltd.com
Full line of kegging equipment. Varietal honey.

Somethings Brew'n' Homebrew and Winemaking Supplies

401 E Main St.
Galesburg, IL 61401
(309) 341-4118
somethingsbrewn@seminarystreet.com
www.somethingsbrewn.com
Midwestern Illinois' most complete beer and winemaking shop.

Indiana

Butler Winery, Inc.

1022 N. College Ave.
Bloomington, IN 47404
(812) 339-7233
vineyard@butlerwinery.com
www.butlerwinery.com
Southern Indiana's largest selection of homebrewing and winemaking supplies. Secure shopping online at www.butlerwinery.com

Great Fermentations of Indiana

853 E. 65th St.
Indianapolis, IN 46240
(317) 257-9463
anita@greatfermentations.com
www.greatfermentations.com

Quality Wine and Ale Supply

Store: 108 S. Elkhart Ave.
Mail: 530 E. Lexington Ave., Ste. 115
Elkhart, IN 46516
(574) 295-9975
info@HomeBrewIt.com
www.HomeBrewIt.com
Wine and Beer Making Supplies for Home Brewers and Vintners.

Kansas

Bacchus & Barleycorn Ltd.
6633 Nieman Rd.
Shawnee, KS 66203
(913) 962-2501
FAX (913) 962-0008
bacchus@bacchus-barleycorn.com
www.bacchus-barleycorn.com

Homebrew Pro Shoppe, Inc.
2059 E. Santa Fe
Olathe, KS 66062
(913) 768-1090; (866) BYO-BREW
Charlie@brewcat.com
www.brewcat.com
For all your brewing equipment and supply needs!

Maryland

The Flying Barrel (BOP)
103 South Carroll St.
Frederick, MD 21701
(301) 663-4491
FAX (301) 663-6195
mfrank2923@aol.com
www.flyingbarrel.com
Maryland's first Brew On Premise with a large selection of homebrew, mead and winemaking supplies.

Massachusetts

Beer and Wine Hobby
155T New Boston St.
Woburn, MA 01801
(781) 933-8818;
(800) 523-5423
FAX (781) 933-1359
shop@beer-wine.com
www.beer-wine.com

Modern Homebrew Emporium
2304 Massachusetts Ave.
Cambridge, MA 02140
(617) 498-0444
www.modernbrewer.com

NFG Homebrew Supplies
72 Summer Street
Leominster, MA 01453
(978) 840-1955;
(866) 559-1955
nfgbrew@aol.com
www.nfghomebrew.com
Celebrating 11 years in business! Great prices, personalized service! Secure online ordering.

Strange Brew Beer & Winemaking Supplies

331 Boston Post Road E
(Route 20)
Marlboro, MA 01752
(508) 460-5050; (877) 460-5050
888-BREWING; (888) 273-9464
dash@Home-Brew.com
www.Home-Brew.com

Secure online ordering. We put the Dash back in Home-Brew!

West Boylston

Homebrew Emporium
Causeway Mall, Rt. 12
West Boylston, MA 01583
(508) 835-3374; 1-877-315-BREW
www.wbhomebrew.com

Michigan

Adventures in Homebrewing
23439 Ford Road
Dearborn, MI 48128
(313) 277-BREW (2739)
FAX (313) 277-2728
www.homebrewing.org

Cap 'n' Cork Homebrew Supply

16812 21 Mile Road
Macomb, MI 48044
(586) 286-5202
FAX (586) 286-5133
cap_n_cork@netzero.net
www.capncorkhomebrew.com
We carry a full selection of Beer and Winemaking Equipment!

Kuhnhenn Brewing Co.

5919 Chicago Rd.
Warren, MI 48092
(586) 264-2351
sales@brewingworld.com
www.brewingworld.com
Brew on Premise, Microbrewery, Winery, Homebrewing Supplies, Meadery.

The Red Salamander

205 N. Bridge St.
Grand Ledge, MI 48837
(517) 627-2012
FAX: (517) 627-3167

Siciliano's Market

2840 Lake Michigan Dr. NW
Grand Rapids, MI 49504
(616) 453-9674;
(800) 418-7270
FAX (616) 453-9687
sici-2840@msn.com
www.sicilianosmkt.com
The largest inventory of homebrew supplies in western Michigan!

Things Beer

1093 Highview Drive
Webberville, MI 48892
(800) 765-9435
(517) 521-2337
homebrew@thingsbeer.com
www.thingsbeer.com

Missouri

Creative Spirits
4386 N. Essex Ave.
Springfield, MO 65803
(417) 833-4145
FAX (417) 833-8949
spirits@creativespirits.com
www.creativespirits.com
All your beer and wine supplies at low prices with quick service.

Homebrew Pro Shoppe, Inc.

531 SE Melody Lane
(MO 291 North)
Lee's Summit, MO 84063
(816) 524-0808; (866) BYO-BREW
Charlie@brewcat.com
www.brewcat.com
For all your brewing equipment and supply needs!

Home Brew Supply LLC

3508 S. 22nd St.
St. Joseph, MO 64503
(816) 233-9688;
(800) 285-4695
info@thehomebrewstore.com
www.thehomebrewstore.com
Everything you need for brewing and vinting. Secure online ordering and fast, friendly service.

The Home Brewery

205 W. Bain
P.O. Box 730
Ozark, MO 65721
(800) 321-BREW (2739)
(417) 581-0963
FAX (417) 485-4107
brewery@homebrewery.com
www.homebrewery.com
Since 1984, fast, friendly service and great prices for all your fermentation needs. Secure online ordering.

St. Louis Wine & Beermaking

251 Lamp & Lantern Village
St. Louis, MO 63017
(636) 230-8277;
(888) 622-WINE
FAX (636) 527-5413
www.wineandbeermaking.com
info@wineandbeermaking.com
The complete source for beer, wine and mead makers!

Nebraska

Cornhusker Beverage
8510 'K' Street
Omaha, NE 68127
(402) 331-5404
FAX (402) 331-5642
info@cornhuskerbeverage.com
www.homebrewkits.net
Fast, friendly, family owned business for 5 generations. We know how to homebrew!

Fermenter's Supply & Equipment

8410 'K' Plaza, Suite 10
Omaha, NE 68127
(402) 593-9171
FAX (402) 593-9942
www.fermentersupply.com
Beer & winemaking supplies since 1971. Visit our store or www.fermentersupply.com.

Nevada

Nevada Brew & Wine Supply LLC
4800 S Maryland Pkwy Unit J
Las Vegas, NV 89119
(702) 940-7817
FAX (702) 966-2901
info@nevadabrew.com
www.nevadabrew.com
Your full service beer, wine and coffee supply shop in southern Nevada.

New Jersey

Beercrafters
110A Greentree Rd.
Turnersville, NJ 08012
856-2-BREW-IT
drbarley@aol.com
www.Beercrafters.com
NJ's Leader in Home Wine & Beer Supplies.

The Brewer's Apprentice

179 South Street
Freehold, NJ 07728
(732) 863-9411
FAX (732) 280-3049
info@brewapp.com
www.brewapp.com
Where you're the brewer! New Jersey's only brew-on-premises. Fully stocked homebrew supply store.

New York

E.J. Wren Homebrewer, Inc.

Ponderosa Plaza
Old Liverpool Rd.
Liverpool, NY 13088
(315) 457-2282;
(800) 724-6875
ejwren@twcny.rr.com
www.ejwren.com

Largest Homebrew Shop in Central New York!

Hennessey Homebrew

Emporium
470 N. Greenbush Rd.
Rensselaer, NY 12144
(800) 462-7397
FAX (518) 283-1893
rogersav@aol.com
www.beerbrew.com

Homebrew Too—Hydroponic Garden Centers

146-49 Horace Harding Expressway
"Service Road of L.I.E"
Flushing, NY 11367
(718) 762-8880
FAX (718) 762-6596
 Open 7 days a week.

Niagara Tradition Homebrew

1296 Sheridan Drive
Buffalo, NY 14217
(716) 877-8767;
(800) 283-4418
FAX (716) 877-6274
ntbrew@localnet.com
www.nthomebrew.com

Low-cost UPS shipping daily from the region's largest in-stock inventory. Convenient and secure online shopping. Knowledgeable staff.

Party Creations

345 Rokeby Road
Red Hook, NY 12571
(845) 758-0661
FAX (845) 758-0661
franconi@ulster.net
www.partycreations.net
 Your complete source for beer and winemaking supplies and help when you need it.

North Carolina

Alternative Beverage

114 Freeland Lane Suite E
Charlotte, NC 28217
(704) 527-2337;
(800) 365-BREW
ABsales@ebrew.com
www.ebrew.com
 Now operating in 7,000 sq ft to give quicker service, more products & fewer back orders. New catalog! The BEST and getting better.

Asheville Brewers Supply

2 Wall St. #101
Asheville, NC 28801
(828) 285-0515
FAX (828) 285-0515
allpoints1@mindspring.com
www.ashevillebrewers.com

The Durham Brewmaster Store

2212 S. Miami Blvd
Durham, NC 27703
(919) 430-0662
www.BrewMasterStore.com
 Beer and Wine making equipment and supplies.

Homebrew Adventures

526 Griffith Road
Charlotte, NC 28217
(888) 785-7766
FAX (704) 521-1475
ale@hombrew.com
www.homebrew.com
 Please visit our online forum, The Brewboard at <http://forums.homebrew.com>

Ohio

Grape and Granary

915 Home Ave.
Akron, OH 44310
(330) 633-7223
FAX (330) 633-6794
info@grapeandgranary.com
www.grapeandgranary.com
 Wide selection of supplies. Extract and all-grain kits. Secure online ordering. Fast shipping.

Leener's Brew Works

142 E. Aurora Rd.
Northfield, OH 44067
(800) 543-3697
FAX (330) 467-2972
makebeer@leeners.com
www.leeners.com

Listermann Brewer & Vintner Supply

1621 Dana Avenue
Cincinnati, OH 45207
(513) 731-1130
FAX (513) 731-3938
dan@listermann.com
www.listermann.com

Main Squeeze

229 Xenia Ave
Yellow Springs, OH 45387
(937) 767-1607; (937) 767-1679
mainsqueezes@yahoo.com
www.mainsqueezeonline.com
 A full service Brewing Supply store and fresh juice/smoothie bar.

The Pumphouse

336 Elm St.
Struthers, OH 44471
(330) 755-3642; (800) 947-8677
pumphouse@excite.com
www.thepumphouse.cjb.net
 Beer and winemaking supplies & more!

Winemakers Shop

3517 N High St.
Columbus, OH 43214
(614) 263-1744
FAX (614) 263-1744
www.winemakersshop.com
 Serving Beer and Winemakers since 1974.

Oklahoma

The Brew Shop

2205 W Main St.
Norman, OK 73069
(405) 364-BEER
brewshop@swbell.net
www.thebrewshopokc.com
 Complete line of grain, hops, yeast, beer and wine kits. We'll ship anywhere!

The Brew Shop

3624 N. Pennsylvania
Oklahoma City, OK 73112
(405) 528-5193
brewshop@swbell.net
www.thebrewshopokc.com
 Complete line of grain, hops, yeast, beer and wine kits. We'll ship anywhere!

High Gravity

7165 S Memorial Dr.
Tulsa, OK 74133
(918) 461-2605
FAX (918) 461-2605
store@highgravitybrew.com
www.highgravitybrew.com

Oregon

Corvallis Brewing Supply

119 SW 4th St.
Corvallis, OR 97333
(541) 758-1674
FAX (541) 754-6656
joel@brewbeer.cc
www.brewbeer.cc

Fast, friendly service for home enthusiasts of beer, wine, soda and cheesemaking. Online shopping cart and low cost UPS shipping.

FH Steinbart and Co

234 SE 12th Ave
Portland, OR 97214
(503) 232-8793
FAX (503) 238-1649
george@steinbart.com
www.steinbart.com

Established in 1918, we carry a complete line of wine and beer making supplies.

Pennsylvania

Country Wines

3333 Babcock Blvd.
Pittsburgh, PA 15237-2421
(412) 366-0151;
(866) 880-7404
FAX (412) 366-9809
info@countrywines.com
www.countrywines.com
 Since 1972, supplies for the brewer and winemaker.

Keystone Homebrew Supply

779 Bethlehem Pike
Montgomeryville, PA 18936
(215) 855-0100
info@keystonehomebrew.com
www.keystonehomebrew.com
 Where winning brewers find quality ingredients and expert advice! Second location to serve you better.

Keystone Homebrew Supply

599 Main Street
Bethlehem, PA 18018
(610) 997-0911
sales@keystonehomebrew.com
www.keystonehomebrew.com
 Where winning brewers find quality ingredients and expert advice!

Wine, Barley & Hops

Homebrew Supply
248 Bustleton Pike
Feasterville, PA 19053
(215) 322-4780
FAX (215) 322-4781
www.winebarleyandhops.com
 Your source for premium beer and wine making supplies.

Pennsylvania

Wine & Beer Emporium
 101 Ridge Road Unit 27
 Chadds Ford, PA 19317
 (610) 558-2337
 FAX (610) 558-0410
 winebeemporium@aol.com
 www.winebeemporium.com
 All your home beer and wine making supplies, fine cigars and much more.

South Carolina

Bet-Mar Liquid Hobby Shop
 736-F Saint Andrews Rd.
 Columbia, SC 29210
 (800) 882-7713;
 (803) 798-2033
 info@liquidhobby.com
 www.liquidhobby.com
 Unmatched value, service & quality since 1968!

Tennessee

All Seasons Gardening & Brewing Supply
 3900 Hillsboro Pike, Suite 16
 Nashville, TN 37215
 (615) 385-0300;
 (800) 790-2188
 FAX (615) 385-0373
 hydroplant@earthlink.net
 www.allseasonsnashville.com
 Large selection of homebrewing and wine making supplies. Visit our store or shop online.

Texas

Austin Homebrew Supply
 8023 B Burnet Rd.
 Austin, TX 78757
 (800) 890-BREW
 www.AustinHomebrew.com
 Free shipping on orders over \$60!

The Brew Stop

16460 Kuykendahl #140
 Houston, TX 77068
 (281) 397-9411
 FAX (281) 397-8482
 www.brewstop.com

DeFalco's Home Wine & Beer Supplies

8715 Stella Link
 Houston, TX 77025
 (713) 668-9440
 FAX (713) 668-8856
 sales@defalcos.com
 www.defalcos.com
 Providing the best wine & beer making supplies & equipment since 1971! Check us out on the Web: www.defalcos.com.

Foreman's "The Home Brewery"

3800 Colleyville Blvd
 P.O. Box 308
 Colleyville, TX 76034
 (817) 281-7252; (800) 817-7369
 FAX (817) 581-4335
 gregforeman@attglobal.net
 www.homebrewerysupply.com
 Best selection of beer, wine and mead supplies in north Texas!

The Winemaker Shop

3006 SE Loop 820
 Fort Worth, TX 76140
 (817) 568-4700;
 (800) 482-7397
 FAX (817) 568-4740
 Brew@winemakershop.com
 www.winemakershop.com
 Proudly serving the home wine and beer enthusiast since 1971!

Utah

The Beer Nut Inc.
 1200 South State
 Salt Lake City, UT 84111
 (801) 531-8182;
 (888) 825-4697
 FAX (801) 531-8605
 sales@beernut.com
 www.beernut.com
 The Beer Nut, Inc. is committed to help you brew the best beer possible.

Virginia

Vintage Cellar
 1340 S, Main St.
 Blacksburg, VA 24060-5526
 (800) 672-9463
 FAX (540) 552-6258
 sales@vintagecellar.com
 www.vintagecellar.com

The WeekEnd Brewer-Home Brew Supply (Richmond Area)
 4205 West Hundred Rd.
 Chester, VA 23831
 (804) 796-9760; (800) 320-1456
 FAX (804) 796-9561
 beerinfo@weekendbrewer.com
 www.weekendbrewer.com

Washington

Bader Beer & Wine Supply
 711 Grand Blvd.
 Vancouver, WA 98661
 (800) 596-3610
 FAX (360) 750-1552
 steve@baderbrewing.com
 www.baderbrewing.com
 Sign up for our E-newsletter at baderbrewing.com

The Beer Essentials

2624 S. 112th St. #E-1
 Lakewood, WA 98499
 (877) 557-BREW (2739)
 (253) 581-4288
 FAX (253) 581-3095
 order@thebeeressentials.com
 www.thebeeressentials.com
 Secure online ordering.

The Cellar Homebrew

14320 Greenwood Ave. N.
 Seattle, WA 98133
 (206) 365-7660; (800) 342-1871
 FAX (206) 365-7677
 staff@cellar-homebrew.com
 www.cellar-homebrew.com
 Your one-stop shop for all your wine cellar and homebrewing needs.

Larry's Brewing Supply

Retail and Wholesale
 7405 S. 212th St. #103
 Kent, WA 98032
 (800) 441-BREW
 www.larrysbrewing.com

Mountain Homebrew and Wine Supply

8520 122nd Ave NE #B-6
 Kirkland, WA 98033
 (425) 803-3996
 FAX (425) 803-3976
 info@Mountainhomebrew.com
 www.Mountainhomebrew.com
 The Northwest's premier homebrewing supply store! We have everything you need and more!

Northwest Brewers Supply

316 Commercial Ave.
 Anacortes, WA 98221
 (360) 293-0424
 brew@nwbrewers.com
 www.nwbrewers.com

Wisconsin

Brew City Supplies/ The Market Basket
 14835 W. Lisbon Rd.
 Brookfield, WI 53005-1510
 (262) 783-5233
 FAX (262) 783-5203
 lautertune@aol.com
 www.BrewCitySupplies.com
 Shop our secure online catalog for great selection, superior service, fast shipping and guaranteed lowest prices.

Homebrew Market, Inc.

1326 N. Meade St.
 Appleton, WI 54911
 (800)-261-BEER
 FAX (920) 733-4173
 www.Homebrewmarket.com
 Complete beer, wine and soda supply retail store and Internet outlet!

Point Brew Supply, LLC

3041-A Michigan Avenue
 Stevens Point, WI 54481
 (715) 342-9535
 marc@pointbrewsupply.com
 www.PointBrewSupply.com
 Sick of substituting ingredients to build a recipe? We have it all in stock!

The Purple Foot, Inc.

3167 S. 92nd St.
 Milwaukee, WI 53227
 (414) 327-2130
 FAX (414) 327-6682
 prplfoot@execpc.com

For listing information, call Chris Pryor at 303-447-0816 ext. 143 or Linda Starck at ext. 109.



ADVERTISERS INDEX

AHA Member Rally	38
www.beertown.org	
American Brewers Guild	10
www.abgbrew.com	
American Craft Beer Week	51
www.beertown.org	
American Homebrewers Association	57, Cover 3
www.beertown.org	
Bacchus and Barleycorn Ltd.	53
www.bacchus-barleycorn.com	
Beer, Beer, & More Beer	57
www.morebeer.com	
Beverage People, The	30
www.thebeveragepeople.com	
Big Brew	Cover 2
www.beertown.org	
Blichmann Engineering	13
www.BlichmannEngineering.com	
Boston Beer Company	7
www.SamuelAdams.com	
Breckenridge Brewery	27
www.breckenridgebrewery.com	
Crosby & Baker Ltd.	9
www.Crosby-Baker.com	
Cynmar	28
www.cynmar.com	
Danstar	21
www.Danstar.com	
Deschutes Brewery	31
www.deschutesbrewery.com	
Dogfish Head Craft Brewery	37
www.Dogfish.com	
GABF Pro-Am Competition	45
www.beertown.org	
Grape and Granary	15
www.grapeandgranary.com	
Harper Collins	44
www.HarperCollins.com	
Here's To Beer	Cover 4
www.Herestobeer.com	
Hobby Beverage Equipment	39
www.minibrew.com	
Home Brewery, The	44
www.homebrewery.com	
Homebrew Den	34
www.HomebrewDen.com	
How to Brew	39
www.beertown.org	
Kegkits.com	23
www.KegKits.com	
Larry's Brewing.....	45
www.larrysbrewing.com	

Advertising to the most passionate homebrewers anywhere!

To list here, call Chris Pryor at (303) 447-0816 ext. 143 or Linda Starck at (303) 447-0816 ext.109.

SUPPLIES

ROAST YOUR OWN COFFEE BEANS

For the best cup of coffee you have ever tasted, www.u-roast-em.com. Home roasting supplies, green coffee beans and more. 1-877-352-1200

SUPPLIES

MAKE QUALITY BEERS

The Cellar Homebrew, 14320 Greenwood Ave. N, Seattle, WA 98133. Supplying home beer & winemakers since 1971. Fast, Reliable Service (800) 342-1871; Secure Online Ordering www.cellar-homebrew.com

BREWERY GIFTS & APPAREL

Kodiak Island Brewing Company offers great gifts & apparel from The Rock at our new web-site www.KodiakBrewery.com (907)486-2537 (ALES)

St. Louis Wine & Beermaking

Serving Brewers and Vintners Since 1991

And We're Still Here For You

Secure On-Line Ordering

251 Lamp & Lantern Village
St. Louis, MO 63017
(888) 622-WINE • FAX (636) 527-5413
E-mail: info@wineandbeermaking.com
www.wineandbeermaking.com

The Complete Source for Beer, Wine & Meadmakers

FOXX
EQUIPMENT company

Quality Kegging Parts especially for the Home Brewer.

Visit foxxequipment.com to find a Home Brew Shop near you!

MC Bassett, LLC	29
www.McBassett.com	
Midwest Homebrew	36
www.midwestsupplies.com	
Muntons	1
www.Muntons.com	
National Homebrewers Conference	16,17
www.beertown.org	
Northern Brewer	26
www.northernbrewer.com	
Pub Discount Program	12,13,35
www.beertown.org	
Quality Wine and Ale	38
www.HomeBrewIt.com	

Quoin Industrial Inc.	37
www.partypig.com	
SABCO	15
www.Kegs.com	
Sierra Nevada Brewing Company	34
www.sierranevada.com	
William's Brewing	29
www.williamsbrewing.com	
Wyeast	43
www.wyeastlab.com	

*Cover 2 is the inside front cover. Cover 3 is the inside back cover. Cover 4 is the outside back cover.

AHA Members Heed the Call

You may not be aware of it, but members of the American Homebrewers Association play a crucial role in ensuring that beer enthusiasts across the country continue to have access to the best-quality locally brewed commercial craft beer.

In the second half of 2005, special interest groups in both California and Wisconsin introduced legislation that would have imposed serious restrictions on the ability of small craft brewers to get their beer to market. While the tactics varied, the results would have been equally disastrous for small brewers and beer lovers. There was a very real possibility that small breweries would have been forced to increase prices, scale back production, cease packaging operations or, in some cases, close down completely.

While the affected craft breweries came together to fight these proposals, homebrewers and beer enthusiasts also raised their voices in opposition. The American Homebrewers Association asked members in the affected states to contact their state legislators to let them know how these proposed laws would unfairly impact small craft brewing businesses and the consumers who enjoy their quality products. It didn't take long for the power of this organized and impassioned grassroots beer movement to impact the respective state capitols. Supporters of the California bill withdrew the legislation for the 2005 session, and a compromise agreeable to both brewers and wholesalers was reached in Wisconsin.

The role of AHA members in thwarting the potentially damaging legislation demonstrates the power of a passionate grassroots organization like the American Homebrewers Association. It also shows how important it is for homebrewers to be

**THE
FIGHT IS
NOT
OVER. BE
PREPARED
TO ACT!
YOUR STATE COULD
BE NEXT!**



connected to the brewing community through local clubs and the AHA.

American Homebrewers Association members can take pride that their actions and involvement have helped beer lovers in California and Wisconsin. However, the fight is not over. In the very near future, many more states will face similar threats. Be prepared to act! The legislative process can move quickly; bills can surface and be voted on within a matter of just a few days, so timing is critical. The Brewers Association and the AHA work closely with state brewers guilds to track potential threats from state legislatures. If you get an e-mail from the AHA requesting that you contact your state representatives about an upcoming issue, please act immediately and encourage other beer enthusiasts to do the same.

The support AHA members have demonstrated for professional craft brewers is a two-way street. Nearly all professional craft brewers in the United States were homebrewers first. They often provide space in their breweries for homebrew club meetings, speak at events like the AHA National Homebrewers Conference and judge several homebrew competitions. Craft breweries across the country

host AHA rallies and offer discounts to members through the Brewers Association Pub Discount Program.

When homebrewers struggled to legalize homebrewing in their states, craft brewers provided extensive assistance and financial support. Boston Beer Company generously donated \$20,000 in 1998 to aid the AHA's homebrew legalization efforts.

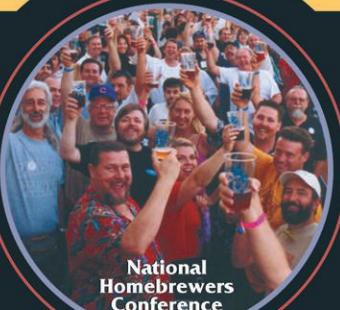
In return, homebrewers play a leading role in educating their peers about drinking better beer, which benefits professional craft brewers. At craft beer festivals around the country, you will find homebrewers volunteering to serve beer and help out in whatever way they can.

In the past, homebrewers acted to help legalize brewpubs in many states. A few years back, they were involved in a Florida campaign aimed at changing a law that restricted the size of bottles in which beer could be sold. Last year, homebrewers were involved in the Pop the Cap campaign that succeeded in changing a North Carolina law that restricted the level of alcohol in beer that could be sold in that state to just 6 percent ABV. Right now in Alabama, homebrewers are helping to support the Free the Hops campaign to do what Pop the Cap did for North Carolina (see www.freethelops.org to get involved).

In the future, homebrewers may face challenges to their rights to brew at home; it's good to know that professional craft brewers will be there to fight on our side!

On a daily basis, Gary Glass and Pete Johnson of the American Homebrewers Association and the Brewers Association fight for your right to drink quality beer.

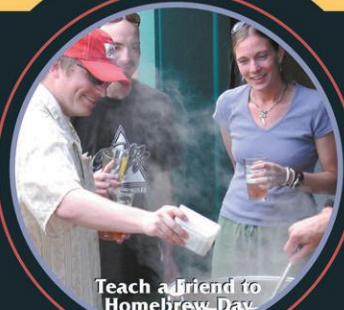
IS BEER YOUR PASSION?



National
Homebrewers
Conference



Join the
**American
Homebrewers
Association.**
Be a part of the
homebrewing
community.



Teach a friend to
Homebrew Day



Big Brew

JOIN THE **American Homebrewers Association**

★ **Zymurgy Magazine** ★ **AHA TechTalk Homebrewers Email Forum**

★ **Great American Beer Festival® Discounts**

★ **Pub Discounts** ★ **Beer and Brewing Book Discounts**

★ **Competition and Conference Discounts** ★ www.beertown.org ★ **And Much More!**



NOT READY TO JOIN?

FREE from the
Tap
eNewsletter

Keep in touch with the
BEER WORLD.

Enroll on
www.beertown.org

FREE GIFT WHEN YOU SIGN UP TODAY

	US	Int'l
<input type="checkbox"/> One Year Membership	\$38	\$44
<input type="checkbox"/> Two Year Membership	\$68	\$79
<input type="checkbox"/> Three Year Membership	\$97	\$112
<input type="checkbox"/> Joint AHA/BA Individual Membership	\$170	N/A

All payments must be in US Dollars.

US	Int'l
<input type="checkbox"/> Family Membership	\$43

AHA Family Membership entitles all of the brewers in your household to all of the great benefits of AHA Membership. Your household will share one subscription to Zymurgy and save on the cost of having multiple memberships. Include a list of your household members' names and email addresses.

US	Int'l
<input type="checkbox"/> Lifetime Membership	\$600

Lifetime Membership includes a FREE T-Shirt.
T-Shirt Size: _____

Name _____

Address _____

City/State _____ Zip _____

Telephone _____ Fax _____

Payment (in U.S. funds only) Check MasterCard Visa AmEx

Card Number _____ - _____ - _____ - _____ Expiration date _____

Name on Card (please print) _____

Signature _____

Make checks payable to: Brewers Association, P.O. Box 1510, Boulder, Colorado 80306-9929, USA

CALL NOW! TOLL FREE 1-888-U-CAN-BREW
or +1.303.447.0816 or visit www.beertown.org

ZYM06

American Homebrewers Association
A Division of the Brewers Association
www.beertown.org





Let There Be Beer.

IN EARLY 1933, BEFORE PROHIBITION COULD BE OFFICIALLY REPEALED, PRESIDENT ROOSEVELT SIGNED EMERGENCY LEGISLATION ESSENTIALLY DECLARING LET THERE BE BEER. IT WASN'T UNTIL DECEMBER THAT WINE AND HARD LIQUOR LEGALLY RETURNED. AFTER BEING DEPRIVED OF LEGAL ALCOHOL FOR 13 MISERABLE YEARS, THIRSTY AMERICANS NEEDED A BEVERAGE OF MODERATION.

FDR MUST HAVE KNOWN BEER IS ALWAYS THE BEST CHOICE TO ENCOURAGE ADULTS' RESPONSIBLE ENJOYMENT.



FOR EVERYTHING ABOUT BEER AND MORE, VISIT HERESTOBEER.COM