

FOR THE **HOMEBREWER & BEER LOVER**

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► The Journal of the American Homebrewers Association ◀

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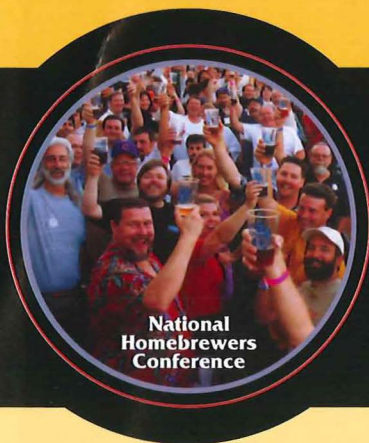


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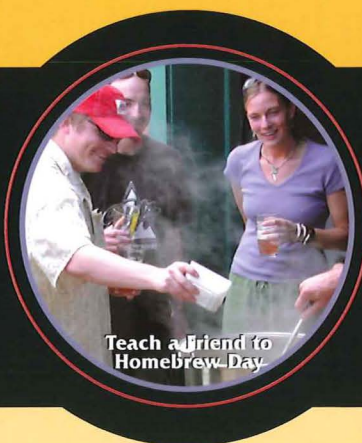
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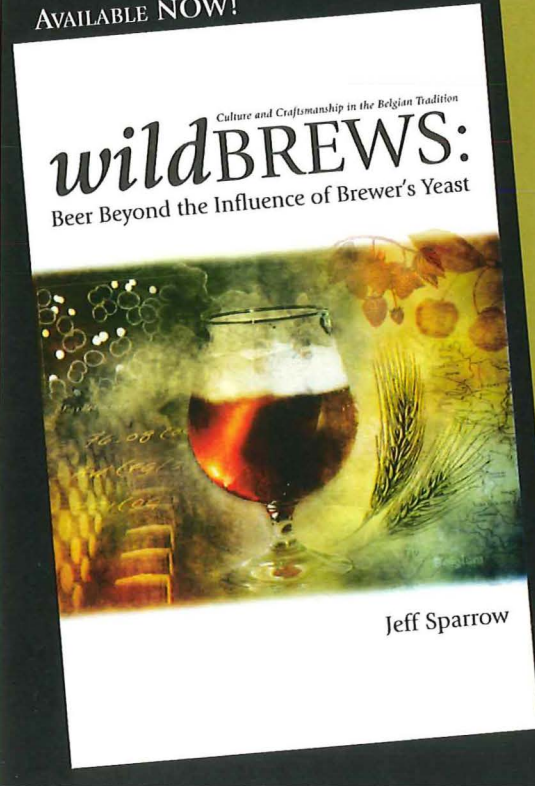
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A Sense of Community

By the time this magazine hits your hands, I should be savoring a nice pint of Denny Conn's Rye IPA brewed at a Big Brew Day gathering I attended May 7 at Alan and Paula Johnson's house in Deer Island, Ore.

It was about the umpteenth time Alan and Paula had invited me over to see Alan's 55-gallon brew system since we met at last year's National Homebrewers Conference in Las Vegas. Finally work and family schedules allowed—despite the need for an early exit before the brew was finished to attend my son's baseball game.

Pouring grain into the mashtun while Alan manned the paddle, it dawned on me that what has kept me involved in homebrewing for more than 17 years now is not merely the love of good beer. Heck, I can get all the world-class beer I want without any more effort than a drive to the Horse Brass Pub or any of the 30-plus brewpubs in the Portland area.

It's not a desire to save money on beer. With all of the gadgets and books and new pieces of equipment I "need" to buy on a regular basis, my homebrew hobby costs me almost as much as drinking local craft beer.

No, it's definitely the sense of community that can only be attained by brewing and sharing beer in a group like the throng that gathered at Alan and Paula's that day. Before I arrived, the only other people I had met from the group were Lee and Linda Harries—a couple from the nearby Tide Creek Brewers—and Ken Fisher of the Grateful Deaf Homebrew Club.

By the time I left, I had met several new people, from experienced brewers who were able to give me a tip or two, to first-timers there to soak in the scene and find

out what all this fuss about homebrewing is about.

I found writers for stories I had wanted for future issues of this magazine and made connections for more upgrades to my brew system.

And, yes, I got to drink some mighty fine homebrew, with the promise of more to follow. Besides the all-grain "neighborhood batch" of DC Rye IPA that was destined to be split up among several brewers, there was an extract batch of Positively Porter and a Brutal Bitter clone boiling away.

More brewers, friends and spouses were arriving with food, homebrew and stories to share. I hated to leave.

But duty called and that included putting the finishing touches on this issue.

And that reminded me of another reason why I love this hobby: Homebrewers have the most eclectic palates on the planet. In our third **Zymurgy** Best Commercial Beers in America poll, you readers have selected Alaskan Smoked Porter from Alaskan Brewing Company in Juneau Alaska, as your favorite beer available in the United States. This is a beer that comes out once a year, in limited distribution, yet beer lovers from Tampa to San Jose picked it among their top 20 favorite beers available in the country.

To fit some of the extra charts and stories into this issue, we had to put a couple of regular features on hiatus for one issue. But fear not, Try This at Home will be back in September, along with our expert panel's Commercial Calibration.

Cheers,
Jim Parker
Editor-in-Chief

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Alaskan Smoked Porter is the new champion in our annual Best Commercial Beers in America readers' poll. See all the results and try your hand at brewing some of your top picks.

20 | A Toast to Session Beers *By Fred Eckhardt and Jeff Renner*
Bigger isn't always better when it comes to beer, especially when you are planning a night out with friends. Lower alcohol "session beers," though often maligned in this country, can sometimes be a homebrewer's—and beer drinker's—best friend.

26 | Nothing Ordinary about these beers *By Jamil Zainasheff*
The names may not promise much excitement, but well-crafted ordinary bitters, milds and Scottish 60 shilling ales can pack plenty of flavor into an extraordinary lower-alcohol package.

32 | Wide World of Wheat *By Matt Jarvis*
Looking for a crisp, refreshing session beer that won't tax your palate? Try your hand at one of the many styles of wheat beer.

36 | Land of the Long White Cloud *By Amahl Turczyn-Scheppach*
New Zealand combines all the charm and culture of Great Britain with the natural beauty and rugged, unspoiled scenery of Hawaii's less populated islands. It also boasts a thriving beer culture with plenty of pubs and breweries.

Plus: Craft brewers pace industry growth



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>> GET THERE!

Oregon Brewers Festival

If you're already one of the oldest and biggest beer festivals in the country, what do you do for an encore?

You make it bigger by adding another day.

For its 18th anniversary, the Oregon Brewers Festival will expand to four days, July 28 to 31, at Tom McCall Waterfront Park in downtown Portland, Ore.

The festival, always held the last full weekend in July, features 72 breweries from across the United States, each pouring one beer for the sampling pleasure of more than 50,000 beer lovers from around the world.

Admission to the festival is free, but you must have an official tasting mug (\$4) to sample the beers. Beer tokens are \$1 each.

As usual, the festivities will not be confined to the festival grounds. A variety of other beery activities are planned including a beer and sausage fest July 23 at the Raccoon Lodge brewpub in Portland (www.raclodge.com); a beer and chocolate tasting with Fred Eckhardt July 26 at the Rogue Ales Distillery and Public House (www.rogue.com); the July 27 Oregon Brewers Guild Brewers Dinner (www.oregonbeer.org) at Waterfront Park; and the first Glen Hay Falconer Foundation BrewAm Golf Tournament (www.sasquatchbrewfest.org) July 28 at McMenamins Edgefield.

Oregon beers not featured in the festival will be available at several local pubs as part of the On the Edge Beer Festival.

For more information, call 503-297-3150 or click on www.oregonbrewfest.com.

July 1-31

American Beer Month Celebrate the Flavor & Diversity of American-Made Beer. Contact: Ray Daniels, Phone: 303-447-0816 x 125, Fax: 303-447-2825, E-mail: ray@brewersassociation.org, Web: www.americanbeer-month.com/index.php

July 8

Empire State Brewing & Music Festival Syracuse, NY. Contact: David Katleski, Phone: 315-256-7608, E-mail: dmkat@twcny.rr.com, Web: www.empirestate-brewingfestival.com

July 9

Indiana State Fair Brewers Cup Indianapolis, IN. Contact: Anita Johnson, Phone: 317-257-9463, E-mail: anita@greatfermentations.com, Web: www.brewerscup.org

July 15-17

Portland International Beer Festival Portland, OR. Phone: 206-937-1800, Web: www.portlandbeer.com

July 15-16

16th Annual Sagebrush Classic Bend, OR. Phone: 800-601-8123, E-mail: sagebrushclassic@comcast.com

July 16

Amador County Fair Foothill and Valley Black and Tan Invitational Jackson, CA. Contact: William F. Tarchala, Phone: 209-476-8491 or 209-223-1976, Fax: 209-476-0426, E-mail: sharkbrew@centralhouse.net, Web: www.brewangels.com



July 16-17

Greater Augusta Regional Chamber of Commerce Daylily & Wine Festival Fishersville, VA. Contact: Donna Elkins, Phone: 540-949-8203, Fax: 540-949-7740, E-mail: comdevelop@ntelos.net, Web: www.augustachamber.org

July 23

Santa Barbara Craft Beer Festival & Motor Classic Santa Barbara, CA. Contact: Amie Parrish, Phone: 805-569-5611, Web: www.elingspark.org

July 28-31

MBAA-District Eastern Canada Quebec City, Quebec. Contact: Jacques Desautels, E-mail: jacquesdesautels@hotmail.com

July 30-31

9th Annual Bluegrass and Beer Festival Keystone, CO. Phone: 970-496-4613, E-mail: josh@keystoneneighbourhood.com, Web: www.keystoneneighbourhood.com/bluegrass.html

July 30

4th Annual Music City Brewers Festival Nashville, TN. Phone: 615-664-2484

July 31

Commercial Beer Competition Pomona, CA. Phone: 714-609-9729, E-mail: lafair@calferm.org, Web: www.fairplex.com/beer

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

GREAT GADGET WHAT'S NEW FROM FERMENTIS

Safale Dry Yeast for Homebrewers

Fermentis has introduced its American ale yeast Safale US-56 in 11-gram (0.4-ounce) sachets for homebrewers.

Safale US-56 is a low-diacetyl, crisp yeast suited for brewing American-style ales. It is the same yeast Fermentis sells to professional brewers around the world. The 11-gram packet is sufficient to brew a 4- to 6-gallon batch.

Safale US-56 joins four other strains in homebrew-size packets:

- Safbrew S-33, an alcohol-tolerant strain able to produce beers up to 11.5-percent alcohol by volume and used for Belgian wheat and strong ales
- Safale S-04, a well-known English strain used for a variety of ales
- Safbrew T-58, known for its high esters and spicy, peppery flavor and high alcohol tolerance
- Saflager, a true German lager strain for use in all classic lager styles



Fermentis yeasts are distributed in the United States by Crosby and Baker. For more information, visit www.fermentis.com.

THE LIST

20

Top Beers on Internet Rating Sites

In honor of our third Zymurgy Best Commercial Beers in America poll, we offer the top 20 beers from RateBeer and Beer Advocate for comparison.

RateBeer

1. *Westvleteren 12*, Westvleteren, Belgium
2. *Three Floyds Dark Lord Russian Imperial Stout*, Muncie, Ind.
3. *Rochefort Trappistes*, Rochefort, Belgium
4. *AleSmith Speedway Stout*, San Diego, Calif.
5. *Three Floyds Dreadnaught Imperial IPA*, Munster, Ind.
6. *Nørrebro Bryghus North Bridge Extreme*, Copenhagen, Denmark
7. *Bells Expedition Stout*, Kalamazoo, Mich.
8. *Westvleteren Extra 8*, Westvleteren, Belgium
9. *Dogfish Head World Wide Stout*, Milton, Del.
10. *Stone Imperial Russian Stout*, San Marcos, Calif.

Full list available at www.ratebeer.com.

Beer Advocate

1. *Westvleteren 12*, Westvleteren, Belgium
2. *Three Floyds Dark Lord Russian Imperial Stout*, Munster, Ind.
3. *Westvleteren Extra 8*, Westvleteren, Belgium
4. *Kuhnhenn Raspberry Eisbock*, Warren, Mich.
5. *Thomas Hooker Liberator Doppelbock*, Hartford, Conn.
6. *Masala Mama IPA*, Minneapolis, Minn.
7. *Southampton Grand Cru*, Southampton, N.Y.
8. *Founders Breakfast Stout*, Grand Rapids, Mich.
9. *Stone Imperial Russian Stout*, San Marcos, Calif.
10. *Rochefort Trappistes*, Rochefort, Belgium

Full list available at www.beeradvocate.com.

BREW NEWS: Pelican Scores Trifecta Down Under

The Pelican Pub and Brewery of Pacific City, Ore. (www.pelicanbrewery.com) claimed three top prizes including Grand Champion Beer, Champion International Brewery and Champion Ale in the Australian International Beer Awards held in Melbourne, Australia.

Doryman's Dark Ale won a gold in the Dark Ales category, a best in class trophy, the Champion Ale award and finally the Grand Champion Beer trophy. Doryman's Dark Ale is an American-style brown ale with a deep red-brown color, an assertive but balanced floral and roasted aroma, and a clean, snappy finish balanced with subtle coffee and caramel notes.

"I'm absolutely thrilled and amazed to win such a huge award again!" said Darron Welch, head brewer of the Pelican Pub and Brewery. "For Doryman's Dark Ale to be chosen as the best beer among 885 international beers is an honor. To win Champion International Brewery on top of that, well, it just doesn't get much better."

"In Australia we call this a Trifecta," said director of judges Rob Grieg. This is the first time a brewery has won three major awards in one year!

The Pelican Pub & Brewery also won Grand Champion Beer at the AIBA in 2004 for India Pelican Ale. The craft brewer also makes Kiwanda Cream Ale, MacPelican's Scottish Ale, Tsunami Stout and a host of ever-changing seasonal beers. Past awards and honors for the Pelican Pub & Brewery include winning 10 medals at the Great American Beer Festival, four medals at the World Beer Cup, "Champion American Ale" at the Real Ale Festival, and "Small Brewpub of the Year" and "Brewer of the Year, Small Brewpub" at the 2000 Great American Beer Festival.

The Australian International Beer Awards is the third largest annual professional beer competition in the world. Held in Melbourne each year, the AIBA is Australia's most prestigious beer event. The beers are judged by professional brewers using strict controls to ensure impartiality and "blind" tasting. This year 111 breweries participated, sending 885 beers from 30 countries.

BEER QUOTE

"Bart, a woman is like a beer—they look good, they smell good and you'd step over your mother to get one."

—Homer Simpson



>> BEER JOKE

Strangers in a Pub

A guy walks into a Boston pub at lunchtime, noticing one other patron at the bar. He sits down next to him and says, "Hi, glad to see another man who enjoys a noontime pint."

The other guy turns around and says, "It sounds from your accent like you are from Ireland."

"Indeed I am," says the first guy. "Let me buy you a pint and we'll toast the auld sod."

He buys two pints and they down them in one mighty gulp.

"So," says the first Irishman. "What city are you from?"

"Dublin," says the second.

"Get out of town! I'm from Dublin, too. Let's drink a toast to Dublin."

The bartender pulls two more pints and they down them with a hearty "to Dublin!"

"So what school did you attend?" asks the second Irishman.

"St. Catherine's."

"No way! I went to St. Catherine's. Bartender, two more pints. A toast to St. Catherine's!"

After downing that pint the first Irishman asks, "What class were you in?"

"Class of '64."

"Faith and begorrah! I'm class of '64. Barkeep! Two more."

About the time the bartender returns with the pints and the two raise a rowdy toast, another customer walks in.

"What's happening today, Mac?" he asks the bartender.

"Just the usual," he says. "The O'Flaherty twins are getting soused again."

BREW NEWS: Suds in your Suds

Sacred Showers, a Sanger, Calif. company specializing in hand-crafted, cold-process soaps, has introduced a line of soaps made with beer.

Each Brewery Soap is made with a base of olive, coconut, palm and castor oils, and then different beers are added to provide color and aroma.

For instance, Brewski Shave, a shaving soap, is made with Young's Double Chocolate Stout. Delirious uses Delirium Tremens and Blueberry is made with Pioneer Brewing's BlueCreek Blueberry Ale.

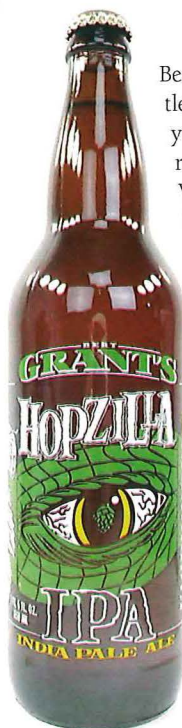
The company will even make custom soaps from beers of your choice.

For more information, visit www.sacredshowers.com.

>> YOU GOTTA DRINK THIS

Hopzilla India Pale Ale

Bert Grants Brewery, Yakima, Wash.



Bert Grant's Hopzilla is a refreshing IPA that radiates a little sunshine on our rainy Northwest spring. The hazy yellow-orange glow of this beer compliments the big citrus and fruity Cascade aroma that hits you in the face. With a strong bouquet, menacing bottle graphics, 90+ IBUs and a name like Hopzilla, you would expect to battle a weighty bitterness. However, Hopzilla is an easy drinking IPA with medium bitter character and mild malt sweetness kept in check by the big hop flavor. It's light and tasty with a velvety mouthfeel and just enough alcohol to be a lawn-mowing summer beverage. This beer is approachable by both the hop-head and newbie hopster alike.

Available in Arizona, California, Colorado, Kentucky, Massachusetts, Michigan, Nevada, New York, Ohio, Oregon and Washington.

Submitted by Patrick Miller, Portland, Ore.

If you've had a beer you just have to tell the world about, send your description, in 150 words or fewer, including where the beer is available to jim@brewersassociation.org or P.O. Box 1069, Gresham, OR 97030.

Support your Local Brewery

Dear *Zymurgy*,
Saint Arnold Brewing Company and the AHA recently held a very successful membership drive in Houston, Texas. By leveraging the brewery's good reputation, extensive e-mail list and free beer, the AHA garnered more than 50 new members in a single afternoon!

Brock Wagner, the brewery's founder, hosted the membership event on a quiet Sunday afternoon in late February. I worked with Brock to ensure that all the Houston area homebrew clubs were aware of the event and invited them all to set up a membership table where they could recruit unaffiliated brewers to join. Local homebrew shops also set up displays of their equipment and handed out sales literature. Brock got his brewers to come in for the afternoon and put on a brewing demonstration, making an altbier on the brewery's pilot rig and an "Atomic Fireball" mead back in the brewhouse.

Saint Arnold's also kicked in a special cask of Spring Bock, giving everyone a chance to sample something unique that is not available to the public.

Admission to the event was membership in the AHA. Once inside, your beer was free, since Saint Arnold cannot (by Texas state law) sell beer in the brewery. So the taps were open, the music playing and homebrewers from all over the region started talking (and drinking) beer. During the event, a small raffle was held giving away T-shirts, books, glasses and caps donated by the Brewers Association.

An event like this is simplicity itself. The major factor is having a very homebrewer-oriented brewery or brewpub that is willing to donate beer and a meeting place for your event. Ideally, it's as much about pro-

moting the brewery to beer lovers as it is promoting AHA membership.

The two go hand-in-hand. If a brewery has an extensive e-mail list, so much the better! It's the liaison's role to be sure all the local clubs know about the event and to line up forms, flyers and fixtures to support everyone involved. Make it clear that membership in the AHA will be required to gain admission. The AHA will provide you with a membership list to check against if anyone forgets their membership card. It's also useful to promote renewals at the event.

During the event, each local homebrew club had a chance to announce upcoming events and tell everyone about their club. I got up to talk about the National Homebrew Competition's Southern Regional as well as encourage everyone to take advantage of AHA discounts at our local pubs and to attend our national events, the Homebrewers Conference and Great American Beer Festival.

As the afternoon wound down, everyone remarked about what a good time they had and left clutching schedules for club meetings, new T-shirts and copies of *Zymurgy for Beginners*.

Bev Blackwood

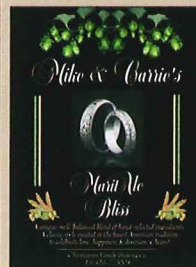
Bev,

Sounds like a great party and a great way to meet your fellow homebrewers. The American Homebrewers Association and Brewers Association are interested in helping other breweries and homebrew clubs set up similar events. If you have a local brewery that might be willing to host a membership party, contact Kate Porter at kate@brewersassociation.org.

—Ed.




FROM OUR READERS



As a tribute to their passion for beer and future brewing endeavors, Mike Christiansen made his wife Carrie a tap handle and matching beer bottle as a wedding day gift.



Members of ZZHOPS (Zion Zymurgist HOmebrew OPeratives Society), were out in force to support the runners of the Salt Lake City Marathon (Saturday, April 23) by cheering and providing a "Beer Aid Station." (photo courtesy of Frank Schmuck)

Send your letters to Dear *Zymurgy*, PO Box 1069, Gresham, OR 97030 or e-mail Jim@brewersassociation.org. Hey homebrewers! If you have a homebrew label that you would like to see in our magazine, send it to Kelli McPhail, Magazine Art Director, Brewers Association, PO Box 1679, Boulder CO 80306 or e-mail it to kelli@brewersassociation.org. 



www.trumer-international.com

“ This Trumer Pils you see in my hand was brewed at the recently opened Trumer Brauerei Berkeley, the American counterpart to the 400-year-old Trumer Brauerei in Salzburg, Austria. This new brewery replicates protocols at its sister brewery, down to the usage of identical proprietary yeast. Hops are selected from the same lots for both breweries as well, for the three hops additions made during the brew, with most of the aroma Hallertau Spalter. In addition, select hops are added at the last minutes of boiling. The colossal undertaking of replicating a centuries old brewing process was executed to maintain Trumer Pils' strict quality standards, ensuring that the Pilsner you drink here in America is fresh from the fermenting vessels.



Lars Larson, Trumer Brauerei Brewmaster.
Works a brewery, not a crowd.

Which brings me to the isomerization of hop components, concentration and sterilization of the liquid by boiling. The water used at the Trumer Brauerei Berkeley is analytically identical to the water used at Salzburg. After initial fermentation is completed, fresh wort is introduced into the tank of fermented Pils and a second fermentation commences...”

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The Summer Session

Summer sprang to life suddenly in Chicago this year. With 80-degree days popping up before the hops had even been trained on the trellis, I wondered what sort of heat we would endure in August. As always, salvation came by way of fresh beer.

Two beers I've had recently set me thinking about summer and my favorite topic: beer styles.

The first was a dry Irish stout at the Goose Island brewpub in Chicago. Posted as having 3.0-percent alcohol by volume, it combined great roasty flavor with easy drinkability. This refreshing departure from the "big and bigger" lineup of stouts you see these days filled a key spot in the always-diverse Goose menu. It did what so few American beers do these days: offer flavor in a low-alcohol brew.

The second beer that got my attention was a Berliner weisse at the Nodding Head brewpub in Philadelphia. It offered a mild malt flavor, evidenced most notably by a graininess late in the palate. Hopping was nearly nonexistent as suits the style with lactic tartness being foremost in the flavor. Best of all, it was light in body and low in alcohol.

The tartness of Berliner weisse gives it the refreshing character of lemonade. If the tartness is too much for you, the style is traditionally offered with either a raspberry or woodruff syrup that you can dose into the beer for balance. Nodding Head did this, accommodating requests to vary the amount of syrup added according to the tastes of the drinker. Even with a beer-soaked palate, I found the weisse with just a touch of *schuss* (syrup) made an appealing beer that I could enjoy for many pints in one setting.



FOR THE TERM "SESSION BEER" DENOTES NOT A STYLE, BUT A CATEGORY OF BEERS ACROSS MANY STYLES THAT DISPLAY REDUCED ALCOHOL CONTENT AND EASY DRINKABILITY.

It was, in short, a session beer.

In England, lower alcohol beers designed for volume consumption at any time of the year get pinned with the moniker of "session beer." Weighing in at less than 4-percent ABV—and usually less than 3.5 percent—they might be golden or dark, hoppy or malty, lager or ale. For the term "session beer" denotes not a style, but a category of beers across many styles that display reduced alcohol content and easy drinkability. These traits make them suitable for a session at the pub: a period of leisure hours spent chatting with friends, reading the paper and generally enjoying life over a number of pints.

Now "session beer" is not a style. But it is an essential class of beer that has become somewhat lost in America. Neither mem-

ory nor research yields a list of beers available in the United States with less than 3.5-percent alcohol by volume. Of course I'm ignoring "low alcohol" mass-market brands that usually strike me as incredibly insipid or tasting like unfermented wort. No, what I want is a brew with beer flavor and character that's also low in alcohol.

Classic session beers include English ordinary bitter, mild ale, Scottish 60 shilling ale and southern English brown ale in addition to Berliner weisse. You see beers labeled in these styles in America today, but for one reason or another, nearly all are made to a much higher gravity. And heaven forbid that a brewer should label a beer as being "low alcohol" or even "mild"—that's a commercial kiss of death.

So what's a homebrewer to do? Brew her or his own, of course!

You can find articles in this and past issues of *Zymurgy* and a host of good books to help you make the most of these beer styles, but you may also want to experiment with creating your own great session beer. It goes without saying that the original gravity of a session beer should be less than 1.040, maybe less than 1.035, but here are some other considerations for making a beer that will be tasty and easy to drink.

1. **Go easy on the hops.** Low alcohol means low gravity means less malt flavor to stand up to the bitterness. Great place to work on aroma hopping.
2. **Roasty toasty.** A great way to bring flavor to low gravity beer is with highly toasted or roasted malts. They add lots of flavor without much fermentable sugar.
3. **Spice it up.** Another way to add flavor without alcohol. This may be the place for



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the rosemary-black pepper beer I've wanted to make or maybe a way to play with saffron. Then of course there's adult ginger ale as an option, too.

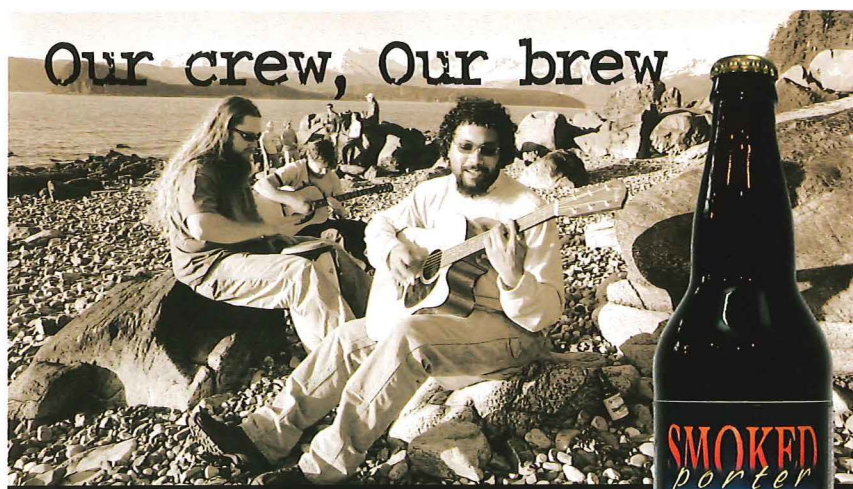
4. **Walk on the wild side.** Yeast selection and fermentation management can also contribute flavor without additional alcohol. How about a low-gravity weizen or abbey-style ale? And of course non-yeast fermenters like lactic acid bacteria can play a constructive role as well.

5. **Package for a party.** If you keg or own some large bottles (22-ounce, etc.), save space for your session beer—it is perfect for volume dispense whether you'll be drinking at home or headed to a backyard barbecue.

So brew on and save a session beer for me!

Cheers.

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



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Kegging with Corn Sugar

Dear Professor,

I am just getting into homebrewing and would like to use a keg for the finished beer. When you start to bottle your beer I understand that you prime the beer with corn sugar or dextrose for the CO₂ to form in the beer. Is it the same when you bottle to a keg or do you pressure up the keg to get the CO₂ into the beer? Also if you prime your beer with corn sugar or dextrose does it leave sediment on the bottom of the keg? My South African friend and I have been discussing this as he also is a connoisseur of fine beer and is thinking of doing some homebrewing.

Regards,
Richard Bailey
Chief Electrician
West Menang

Dear Richard,
It works great to use corn sugar or dextrose for kegs at about 40 percent of the rate you use for bottles.

In other words in America instead of using 3/4 cup of corn sugar for 5 U.S. gallons of bottles we use 1/3 cup of sugar for a 5-gallon keg.

Yes, there will be sediment at the bottom, but that is sucked out during the initial pint or two. If you let the beer clear before you keg, the sediment will be minimal.

Don't rig and drink,
The Professor, Hb.D.

An Awesome Feat

Dear Professor,
I have asked a few others but I figured whom better to ask than a founder of our hobby himself. How often have you heard of a perfect 50 being awarded in a homebrew competition?

I just found out that a New England style cider I made received a 50 from both judges at the Hudson Valley Homebrew Competition. No one in my club, the Niagara Association of Homebrewers, had ever heard of a 50 being awarded before.

Just wondering how big of a feat this really is.

Thanks for the feedback,
Daniel J. Gestwick
Williamsville, N.Y.

Dear Dan,
Stop wondering—that is no less than huge! That must have been one great cider!

I've awarded as much as 49 in my homebrew judging and I can vaguely recall being involved in awarding a 50 here and there, but it is very rare indeed. After all, what beer can be brewed to such perfection that the next beer you make won't be better?

Congratulations,
The Professor, Hb.D.

Bonn Bonn Kölsch

Dear Professor,
I brewed George Fix's Bonn Bonn Kölsch two weeks ago (the recipe in the Brewers Publications book on Kölsch). I only used 5 ounces of Carawheat because I thought it was a little too much to be using the recommended 3/4 pound called for in the recipe. I wish I could ask George, God rest his soul. Does anybody know firsthand if this is correct? Any insight would be appreciated.

Thanks,
Kevin Hodkiewicz.
Three Beers Brewing Co.
Stiles, Wis.

Kevin,

Dr. George Fix was a legendary brewer. We have so much to thank him for. I took a peek into Ray Daniels' book *Designing Great Beers*, a terrific resource for any questions you may have about beer styles. In his book he refers to the very well known retired Weihenstephan professor Ludwig Narziss, who goes on record stating that it is common to have between 10 and 20 percent wheat in Kölsch beers. So given that bit of information 3/4 of a pound is well within reason.

Bonn voyage,
The Professor, Hb.D.

Prime Time Boiling vs. Boiling for Culture

Dear Professor,
The directions for priming homebrew in *The New Complete Joy of Home Brewing*, page 31, mentions boiling 1-1/4 cup dry malt extract (DME) for five minutes before adding it to the fermented wort prior to bottling.

To make a yeast starter, several books and Web sites including Wyeast Laboratories at www.wyeastlab.com/education/edmyp.htm say to "...boil a pint of wort S.G. 1.020 to 30 using 3 to 4 tablespoons malt extract in 2 cups of water for 15 minutes. . ."

Why the difference in boiling times for DME? Does the longer boil achieve something or would five minutes suffice for both situations?

John Gram
Oregon Brew Crew

Yo John,
In brief, with yeast starters you want to maximize your sanitation. A longer boiling time reduces the risk of bacteria and wild yeasts surviving to muck up your yeast culture.

When priming a batch of already fermented beer it is still important to boil to reduce the risk of contamination and to achieve a safe level of sanitation, but extreme sanitation is not as important because the alcohol content and pH level of the fermented beer also help inhibit bacterial activity.

When in doubt boil a bit more,
The Professor, Hb.D.

Grapefruit, Hops, Cholesterol and Statins

Dear Professor,
I take a cholesterol-lowering statin and the warnings on the prescription bottle

echo my doctor's advice not to eat grapefruit or drink grapefruit juice while taking statins because of a chemical compound in grapefruit that inhibits an enzyme system (located in the small intestine) from metabolizing the statins properly.

A member of my local homebrew club told me that some of the same chemical compounds in grapefruit are also present in some of the more citrusy hops like Cascade. After a bit of research, I discovered that the chemical culprit in grapefruit is called 6,7-dihydroxybergamottin. Is that compound also present in Cascade, or any other hop for that matter? Please

tell me I don't have to cut down my Cascade vines! Thanks.

Henry W. Jones, IV (A Concerned Hophead)
Rochester, N.Y.

Dear Henry,
It took a while but world hop expert Professor Denis De Keukeleire at the University of Ghent in Belgium was able to track down this assessment from a colleague.

It has been discovered a while ago that grapefruit influences uptake of drugs including statins by interfering with the metabolism that occurs mainly in the liver by so-called cytochrome P (CYP) enzymes. There are a great number of these CYP enzymes and they are vital for efficient functioning of the human body. Thus, the bioavailability of drugs, i.e. the effective dose of the drug that causes a particular biological or therapeutic activity, is modulated by constituents in grapefruit. As a result, the body is exposed to either higher or lower doses depending on the nature of the specific drug and of the interfering CYP enzyme, hence effects are clearly out of control. It is advised not to consume grapefruit and perhaps also some other citrus fruits when taking drugs.

There is great scientific interest in identifying constituents in grapefruit that inhibit or activate CYP enzymes. One compound that has been found to exhibit inhibitory activity in this respect is, indeed, 6,7-dihydroxybergamottin, although it is quite clear that other compounds in grapefruit may be active as well. 6,7-dihydroxybergamottin has not been detected in citrusy hops like Cascade, although it is feasible that particular grapefruit compounds are also present in other fruits or plants. In any case, concentrations would certainly be too low to exert a significant effect. It seems as if the term "citrusy" is confounded with "citrus fruit." The composition of a citrus fruit like grapefruit must be greatly different from that of a citrusy hop and extension of grapefruit features to hops is scientifically not sound.

So better beer than grapefruit,
The Professor, Hb.D.

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

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by Jim Parker

Saison 'Style' Sparks Imagination

With many beers, when you hear the style name you have a very good idea what the beer will taste like. Not so with the Belgian saison.

These Belgian summer beers—*saison* means season—all share a distinctive yellow-orange color, moderate hoppiness and spicy character. But their strength and the intensity and type of spiciness are subject to the brewer's whim.

I've often thought a perfect name for a saison would be "Que Sera Saison"—the beer that will be what it will be. Saisons are among the Belgian and French ales that are the subject of the August American Homebrewers Association Club-Only Competition.

This farmhouse ale style originated in Wallonia, the French-speaking region of Belgium, where it was traditionally brewed at the end of spring to last through the summer season.

Like many regional specialty styles, saison nearly disappeared before beer writer Michael Jackson began writing about it, inspiring more Belgian brewers and American craft brewers and homebrewers to try their hand at the style. Today, saisons are brewed year-round in both Belgium and the United States.

The key components of any saison are a soft malt character, moderate to high bitterness, a spicy, fruity, sometimes sour flavor profile and a light to medium body. Moderate to high carbonation helps accentuate these characteristics.

The grain bill for saisons should lean heavily on Pilsener malt for a soft, light malt character. Wheat, oats and Vienna or Munich malt can add layers of complexity

THE KEY COMPONENTS OF ANY SAISON ARE A SOFT MALT CHARACTER, MODERATE TO HIGH BITTERNESS, A SPICY, FRUITY, SOMETIMES SOUR FLAVOR PROFILE AND A LIGHT TO MEDIUM BODY.

Saison

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

3.5 lb	(1.6 kg) Coopers Light Dry Malt Extract
1 can	Coopers Wheat Malt Extract
2.25 oz	(64 g) East Kent Goldings (60 min)
0.50 oz	(14 g) East Kent Goldings (15 min)
0.50 oz	(14 g) East Kent Goldings (2 min)
0.50 oz	(14 g) Saaz (2 min)
	Wyeast 3724 Belgian Saison Yeast or White Labs WLP565 Belgian Saison I Yeast
0.75 C	(180 ml measure) corn sugar for bottling

Original Specific Gravity: 1.055

Final Specific Gravity: 1.012

IBUs: 23

ABV: 5.7%



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Directions

Stir malt extract in 2 gallons of water and bring to a boil. Add 60 minute hops. After 45 minutes, add 15 minute hops. Boil another 13 minutes then add remaining hops. Pour into fermenter with enough cold water to make 5 gallons. Aerate and pitch yeast when temperature gets down to 75° F. Ferment at 75 to 90° F for one week. Rack to secondary and store at 65 to 75° F for four to six weeks. Prime with corn sugar and bottle.



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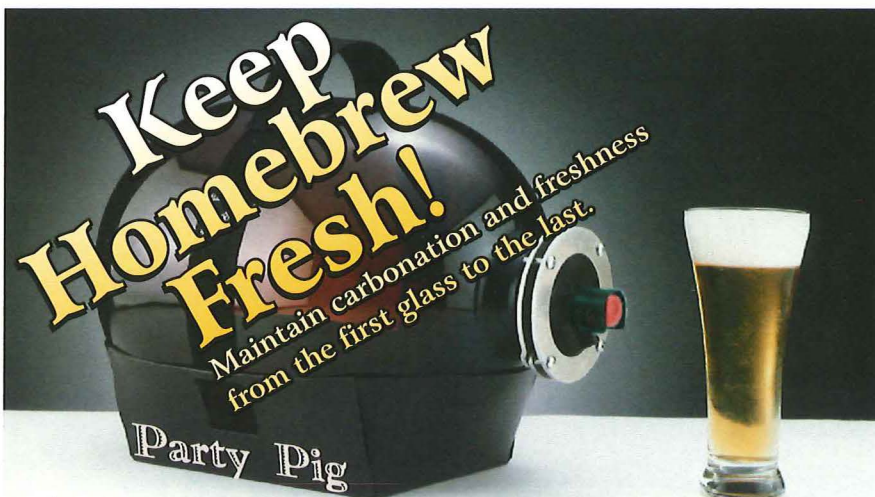
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as well as color. To achieve higher alcohol with a lighter body, you can use adjuncts such as candy sugar or honey. Although you are looking for moderate to high hop bitterness, you don't want the hop flavor to dominate the fruity, spicy character. So stick to noble hop varieties and make your largest hop additions at the beginning of the boil. As for spices, this is where your own creativity comes into play. Citrus peel, coriander, grains of paradise, raisins—nothing is out of bounds. Some of your spicy flavor and aroma can come from esters and phenols from your yeast, as well.

Saisons can also have a sour character, which can come from acidulated malt, a sour mash or even *Lactobacillus*. The intensity of this sour flavor can vary and usually increases with the strength of the beer.

Jim Parker is editor-in-chief of Zymurgy.



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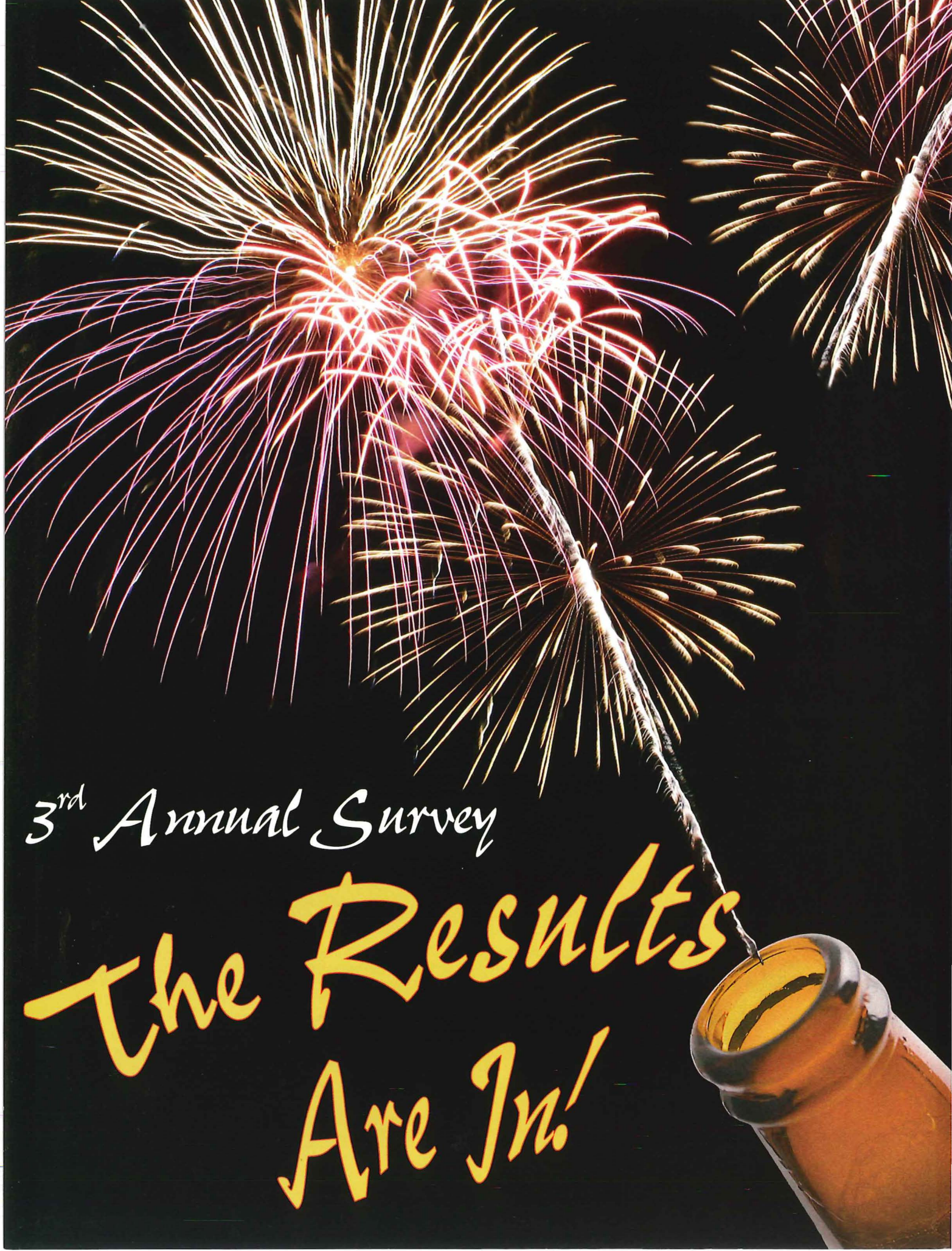
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3rd Annual Survey

*The Results
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Zymurgy's Best Commercial Beers in America



OK, so maybe it wasn't as dramatic as puffs of white smoke signaling a new pope. But there was a dramatic changing of the guard in Zymurgy's third Best Commercial Beers in America Poll with Alaskan Smoked Porter climbing from a tie for 14th to claim the top spot in this year's vote. Alaskan Smoked Porter unseated two-time defending champ Sierra Nevada Pale Ale, which fell into an eight-way tie for seventh in our annual listing of your favorite commercial beers available in the United States.

Each year, we ask you to send in your list of your 20 favorite beers. We know that as homebrewers, you have some of the most adventurous—and best—palates out there. The only rule is the beer has to be commercially available somewhere in the United States. It can be draft only, it can be available in bottles, it can even be available in cans. Of course that one proviso didn't keep one respondent from casting a vote for any homebrew.

In all, we received 573 votes for 371 different beers from a whopping 167 different breweries from across the United States and beyond. Beers on your ballots ranged from household names in the craft beer world to obscure brands from tiny brewpubs that make barely 100 barrels a year.

In a shift from last year's poll, a whopping 77 imports made the list with seven cracking the top 50. You can see a list of the top 50 beers on page 18.

The Top of the Hops

There were plenty of familiar names in the top beers, plus several newcomers. Anchor Steam climbed back into the runner-up spot that it held in our first

poll in 2003. Last year it dropped into a tie for 14th.

Perennial favorite Sierra Nevada Celebration Ale reclaimed the No. 3 spot after dropping into a tie for eighth last year.

After the top three beers, things bunch up pretty quickly.

Dogfish Head 90-Minute IPA and Stone Arrogant Bastard, neither of them a

stranger to the top of beer lovers' lists, shared the fourth slot in the poll with a newcomer, Spoutz Brewery's Shiner Bock.

Bear Republic's Racer 5 IPA zoomed onto the list joining a six-pack of hoppy beers and Guinness Stout in a eight-way tie for seventh. Joining those two beers in the No. 7 hole are Bell's Two-Hearted Ale, Russian River's Pliny the Elder, Stone IPA, Sierra Nevada Pale Ale and Victory Brewing's Prima Pils and Hop Devil IPA.



BREWERY RANKINGS (T Indicates tie)

These rankings are based on total votes received by each brewery's beers

1	Stone Brewing Co.	San Marcos, Calif.
T2	Sierra Nevada Brewing Co.	Chico, Calif.
T2	Rogue Ales	Newport, Ore.
T4	Victory Brewing Co.	Downington, Pa.
T4	Anchor Brewing Co.	San Francisco, Calif.
6	Dogfish Head Brewing Co.	Milton, Del.
T7	Kalamazoo Brewing Co.	Kalamazoo, Mich.
T7	Alaskan Brewing Co.	Juneau, Alaska
9	Boston Beer Company	Boston, Mass.
T10	Three Floyds Brewing Co.	Munster, Ind.
T10	New Glarus Brewing Co.	New Glarus, Wis.
T10	Alesmith Brewing Co.	San Diego, Calif.
13	Great Lakes Brewing Co.	Chicago, Ill.
14	Bear Republic Brewing Co.	Healdsburg, Calif.
T15	Fuller, Smith and Turner PLC	London, England
T15	North Coast Brewing Co.	Fort Bragg, Calif.
T15	Brewery Ommegang	Cooperstown, N.Y.
T15	New Belgium Brewing Co.	Fort Collins, Colo.
T15	Saint Arnold Brewing Co.	Houston, Texas
20	Russian River Brewing Co.	Santa Rosa, Calif.
21	Deschutes Brewery	Bend, Ore.
T22	Avery Brewing Co.	Boulder, Colo.
T22	Boulder Beer Co.	Boulder, Colo.
24	Unibroue	Chambly, Quebec
25	Flying Dog Brewing Co.	Denver, Colo.

There are enough beers clumped at No. 15 to staff a baseball team. Leading off is Samuel Adams Boston Lager, the lightest of the bunch. Next up is a pair of hoppy



TOP RANKED BEERS (T indicates tie)

- 1 Alaskan Smoked Porter
- 2 Anchor Steam
- 3 Sierra Nevada Celebration Ale
- T4 Stone Arrogant Bastard Ale
- T4 Shiner Bock
- T4 Dogfish Head 90 Minute IPA
- T7 Victory Prima Pils
- T7 Victory Hop Devil
- T7 Stone IPA
- T7 Sierra Nevada Pale Ale
- T7 Russian River Pliny the Elder
- T7 Guinness Stout
- T7 Bell's Two Hearted Ale
- T7 Bear Republic Racer 5 IPA
- T15 Victory Old Horizontal Barleywine
- T15 Three Floyds Alpha King
- T15 Sierra Nevada Bigfoot Barleywine
- T15 Samuel Smith Oatmeal Stout
- T15 Samuel Adams Boston Lager
- T15 New Glarus Belgian Red
- T15 Hair of the Dog Adam
- T15 Dogfish Head 60 Minute IPA
- T15 Alesmith Speedway Stout
- T24 Westvleteren 12
- T24 Unibroue La Fin du Monde
- T24 Three Floyds Dreadnaught
- T24 Stone Imperial Russian Stout
- T24 Stone Double Bastard
- T24 Samichlaus
- T24 Rogue Dead Guy Ale
- T24 Rogue Brutal Bitter
- T24 Red Hook ESB
- T24 Ommegang Hennepin
- T24 Odell Brewing 90 Shilling Ale
- T24 Northcoast Red Seal Ale
- T24 New Holland Mad Hatter
- T24 New Belgium Fat Tire Amber Ale
- T24 Duvel
- T24 Verhaeghe Duchess de Bourgogne
- T24 Brooklyn Black Chocolate Stout
- T24 Blue Moon Belgian White Ale
- T24 Big Sky Moose Drool Brown Ale
- T24 Bell's Expedition Stout
- T24 Bear Republic Hop Rod Rye
- T24 Schneider Aventinus
- T24 Anderson Valley Hop Ottin' IPA
- T24 Anchor Old Foghorn Barleywine-style Ale
- T24 Anchor Liberty Ale
- T24 Alesmith Yulesmith
- T24 Alaskan Amber

beers: Dogfish Head's 60-Minute IPA and Three Floyd's Alpha King. Samuel Smith adds a little malt to the team and New Glarus Belgian Red adds some tartness. The other four bruising brews are all heavyweights: Hair of the Dog Adam, Alesmith Speedway Stout, Victory Old Horizontal and Sierra Nevada Bigfoot.

The next grouping includes 27 beers, from perennial favorites Alaskan Amber and Redhook ESB to newcomers New Holland Mad Hatter, Odell 90 Shilling and Big Sky Moose Drool.

All in the Family

As in years past, we also kept track of which breweries received the most votes. This year's top vote getter is Stone Brewing. The San Marcos, Calif.-based brewer placed 10 beers on the list including four in the top 50. Stone tied for fifth in last year's poll.

SPIRIT OF HOMEBREW

- 1 **Hair of the Dog Brewing Co.**
Portland, Ore.
- 2 **Papago Brewing Co.**
Scottsdale, Ariz.
- 3 **Alesmith Brewing Co.**
San Diego, Calif.
- 4 **Stone Brewing Co.**
San Marcos, Calif.
- 5 **Rogue Ales**
Newport, Ore.

Last year's champ Sierra Nevada dropped to a tie for second with Rogue Ales, which topped all breweries with 13 beers on the list. Sierra Nevada proved once again that you don't need the biggest portfolio to get people's attention. The Chico, Calif.-based brewer once again placed only four beers in the poll, but

Dogfish Head 90-Minute IPA Clone

All-Grain Recipe

(based on 70 percent mash efficiency)

Ingredients

for 5 U.S. gallons (19 liters)

16.0 lb	(7.3 kg) Pale two-row malt
1.0 lb	(.45 kg) Munich malt
2.5 oz.	(70 g) Amarillo pellet hops, 8% alpha acid (90 min see notes)
0.75 oz	(21 g) Simcoe pellet hops, 13% alpha acid (90 min see notes)
0.5 oz	(14 g) Warrior pellet hops, 15% alpha acid (90 min see notes)
1.0 oz	(28 g) Amarillo whole hops, 8% alpha acid (dry hop)
0.5 oz	(14 g) Simcoe whole hops, 13% alpha acid (dry hop)
0.5 oz	(14 g) Glacier whole hops, 5.8% alpha acid (dry hop)
	Wyeast 1056 American Ale Yeast

Target Original Gravity: 1.086

Target Final Gravity: 1.016

ABV: 9.0

IBUs: 90

Boil time: 90 minutes

Directions

Single infusion mash at 150° F (66° C) for 60 minutes. Boil for 90 minutes. Combine all of your kettle hops into one bowl, weigh out 0.2 ounce (5.6 grams) of the hop mixture and add to the boil every five minutes for the duration of the boil.

Ferment at 72° F (22° C) until gravity reaches terminal. Rack into secondary and add dry hops for at least one week. Package and serve.

Extract Recipe:

Substitute 9.5 lb (4.3 kg) pale liquid malt extract for grains.



BEST PORTFOLIO (T indicates tie)

Ranked by number of beers named in the poll

1	Rogue Ales	13 beers
2	Stone	10 beers
3	Great Lakes	7 beers
T4	Victory	6 beers
T4	Samuel Adams	6 beers
T6	Three Floyds	5 beers
T6	Saint Arnold	5 beers
T6	New Glarus	5 beers
T6	New Belgium	5 beers
T6	Dogfish Head	5 beers
T6	Kalamazoo Brewing	5 beers
T6	Anchor Brewing	5 beers
T13	Spaten	4 beers
T13	Sierra Nevada	4 beers
T13	Paulaner	4 beers
T13	North Coast	4 beers
T13	Flying Dog	4 beers
T13	Capital Brewing	4 beers
T13	Anderson Valley	4 beers
T13	Avery Brewing	4 beers

each received several votes and landed in the top 50.

The West Coast's Anchor Brewing and East Coast Victory tied for fourth. Anchor placed five beers on the list and Victory six. Dogfish Head, which also had five beers on the list, claimed the sixth spot in terms of total votes.

Kalamazoo Brewing, maker of Bell's Beers, and Alaskan Brewing tied for seventh. Kalamazoo placed five beers on the list, while Alaskan counted on its two main brands, Smoked Porter and Alaskan Amber, for its votes.

You can find the top 20 breweries in terms of total votes on page 17 and the breweries with the most beers making the list on this page.

Foreign Affairs

The 77 import beers making the list are nearly double last year's total. Those beers come from 49 breweries.

Samuel Smith's Oatmeal Stout is the second-leading import beer, squeaking past Schneider's Weizenbock Aventinus, Duvel and Duchesse de Bourgogne, brewed by the Verhaeghe Brewery.

Other imports in the top 50 include Samichlaus (now brewed by Eggenberger), Unibroue's La Fin du Monde and Westvleteren 12.

Great Beers, Small Breweries

Once again, we tip our hats to those breweries that though small in production, score big with beer lovers. We determine the Spirit of Homebrew Award by taking a brewery's total votes and dividing it by the brewery's production.

Hair of the Dog Brewing of Portland, Ore. is this year's Spirit of Homebrew winner. Its flagship brand, Adam, continues to find favor with beer drinkers from coast to coast.

Papago Brewing of Scottsdale, Ariz.—a great tap house that also brews a selection of its own beers—is the runner-up with Alesmith Brewing close behind in third.

With many of the top beers repeating on the list year after year, it is getting more difficult to find beers that we haven't printed clone recipes for. (Alaskan Smoked Porter appeared in the July/August 2003 issue of *Zymurgy*.) But we did manage to put together two recipes for some more of your favorites. We invite you to give them a try and see how they compare.

Jim Parker is editor-in-chief of *Zymurgy*.

Alesmith Speedway Stout Clone

All-Grain Recipe

(based on 70-percent mash efficiency)

Ingredients

for 5 U.S. gallons (19 liters)

18.0 lb	(8.2 kg) Pale two-row malt
1.5 lb	(0.68 kg) 40L Crystal malt
1.0 lb	(0.45 kg) Chocolate malt (500L)
1.0 lb	(0.45 kg) Black barley malt
1.0 oz	(28 g) Nugget pellet hops, 13% alpha acid (60 min)
0.5 oz	(14 g) Liberty pellet hops, 4% alpha acid (30 min)
0.5 oz	(14 g) Liberty pellet hops, 4% alpha acid (15 min)
4.0 oz	(112 g) fresh coarse ground coffee (dry bean)
0.75 cup	dry malt extract for priming
	White Labs WLP 01
	American Ale Yeast

Target Original Gravity: 1.107

Target Final Gravity: 1.016

ABV: 12.0

IBU: 51

Boil Time: 90 minutes

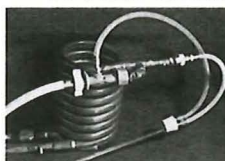
Directions

Single infusion mash at 152° F (67° C). Boil for 90 minutes. Ferment at 72° F (22° C) until terminal gravity. Rack into secondary and add coarse-ground coffee in nylon bag and let "dry bean" for at least a week. Alesmith bottle-conditions Speedway Stout, so prime with dry malt extract and bottle. Allow to condition for two weeks. Enjoy.

Extract recipe: Substitute 14.4 lb pale liquid malt extract for two-row and steep specialty grains.

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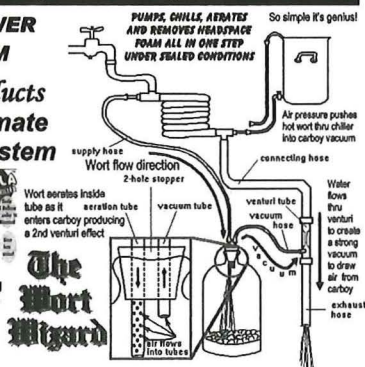


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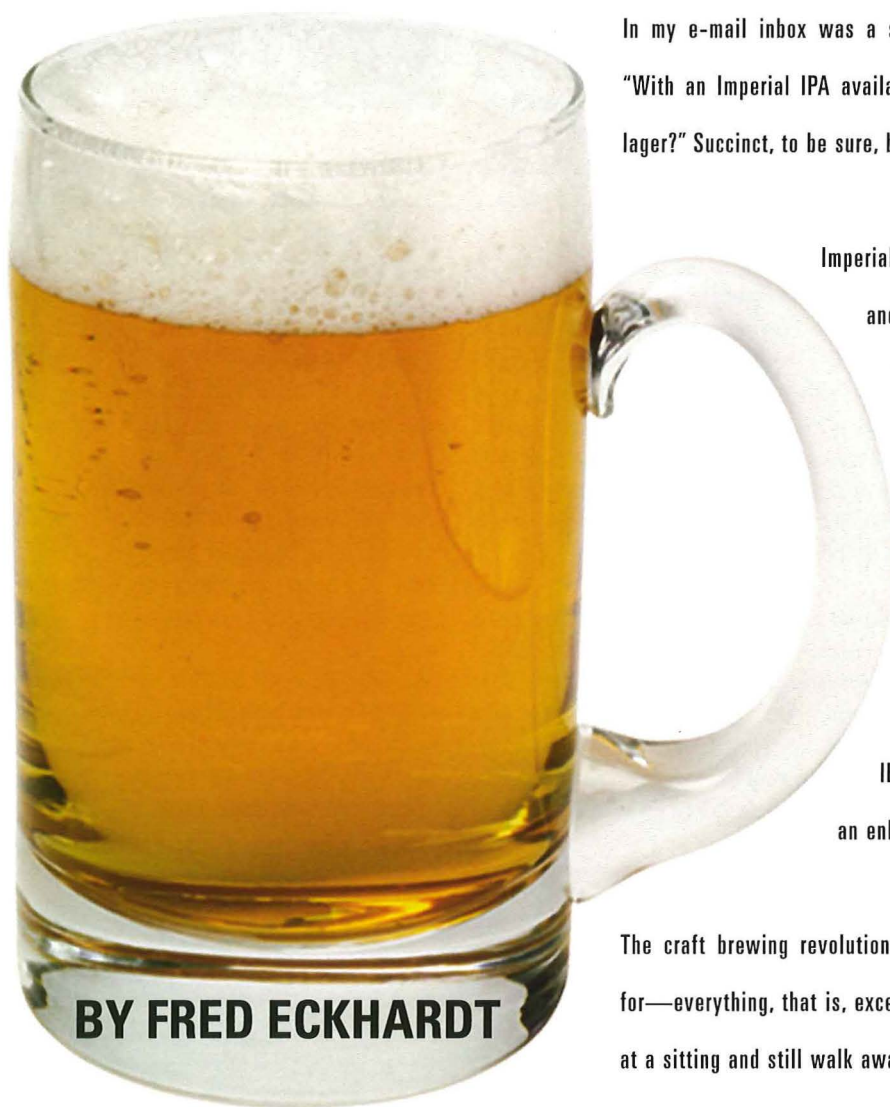




!N



DEFENSE OF SESSION BEERS



BY FRED ECKHARDT

In my e-mail inbox was a short note on a beer forum to which I subscribe: "With an Imperial IPA available [in a bar], who could possibly want a Vienna lager?" Succinct, to be sure, but not very practical.

Imperial brews are wonderful and available in such varieties and quantities as to make one believe that we are at the gates of the promised land. For the most part, "imperializing" a brew can be as simple as increasing the strength by doubling the grain bill or otherwise generating an alcohol content of 8 to 10 percent by volume. But in the case of some particular imperials one might also expect to find an exceedingly high hop content (70 to 140 IBU) as a substitute for some of the gravity, and/or as an enhancement for a standard style.

The craft brewing revolution has brought us everything we could have hoped for—everything, that is, except a beer of which we can have three or four pints at a sitting and still walk away.

The real problem, as I see it, is not whether we should enjoy these magnificent brews, but rather how will we get home after an evening of drinking them. A pint of imperial is fine, but what if one is spending an evening out with friends and will imbibe several pints over the course of two or three hours?

With the neo-Prohibitionists breathing down our necks, (MADD Mothers and such) and the religionists holding the fires of temperance to our feet, we are entering a period of outright persecution of drinkers. We need to protect ourselves and our industry.

One of my favorite old brewing texts describes the difference between “heavy” and “light” beer as 12.5° Plato (a density of 1.050). Less than 12.5-percent fermentables in the beer wort (OG) before adding yeast delivers “light,” while above that level gives us “heavy.” Light beer, therefore, has less than 5-percent alcohol by volume.

Color? Light beer can be very pale or as black as the blackest brew. In fact Guinness Draught is actually a light beer (a mild) at OG 10.3° Plato and 4.4-percent ABV. There’s no nationally available American beer quite like Guinness Draught, a nice dark, light beer found in a surprising number of American pubs. If you need a session beer with taste, try the



The craft brewing revolution has brought us everything we could have hoped for—everything, that is, except a beer of which we can have three or four pints at a sitting and still walk away.

A NAME FOR “SESSION BEER”?

How about “Citizen Beer” or “Family Beer”?

Guinness Draught; never mind that it isn’t brewed in Ireland these days, and don’t mistake Guinness Extra Stout for Guinness Draught either.

The sad fact is that most craft brews in this country are actually “heavy.” We have very few “light” craft beers. Even the beers we call “session” are usually up in the 5-percent range, brewed from an extract of 12° Plato or 1.048 or higher. In Europe, much of the beer is “light” by these standards. The English, in particular, have a great reputation for weak (by our standards) beer. German vollbier (“full” beer) is not all that strong either. Many Germans prefer the friendlier and weaker shankbier or kellerbier.

Weak Sissy Beers

We have become obsessed with the idea that light beer must be tasteless, exceedingly pale and with a caloric count near that of water. At the same time we are taught to believe that any beer with less than 5-percent ABV is weak sissy beer. Hence the malt liquor phenomenon: weak sissy beer with plenty of alcohol.

The so-called “3.2” beer was promulgated in April 1933 and intended to allow Americans the joy of beer during what became the last eight months of Prohibition. That designation was not popular (but it should have been) because there were still severe limits on what Americans

PROPOSED STYLE DEFINITIONS

Style Definition

(Great American Beer Festival®)
Hybrid/Mixed Styles

“Session Beer”

This beer can be made using either ale or lager yeast, and any malt or hop bill or style the brewer chooses. Some modest color depth would be desirable, in whatever style selected, but it should adhere to that style’s character. The beer should be brewed primarily to provide a good depth of well-balanced flavor for the drinker. Tasteless beers should not be tolerated.

Original Gravity (Plato): 1.030 to 1.060 (7.5 to 15° P)

Alcohol by Weight (volume): not over 3.6% (4.5)

Bitterness (IBU): may be at any level the brewer desires

Color SRM (EBC): 2 to 40+ (4 to 80+)

could drink in that time period. We wanted it all—beer, wine, hard liquor—and would settle for nothing less. The 3.2-percent alcohol by weight is actually 4-percent alcohol by volume. It was a good compromise for those eight months, but 13 years of Prohibition (actually 13 years, 10 months, 19 days, 17 hours and 32+ minutes)’ had changed the world for tired, boozeless Americans. The 3.2-beer would not carry the day for people like my stepfather, who not only wanted it all but was an active “pusher.” He regularly smuggled whiskey 60 miles down from Vancouver, Canada, to our hometown of Everett, Wash.

We have become acculturated to disdain 3.2 beer, which had been a great citizen beer in the years before Prohibition. Today, the 3.2 designation still brings scorn to the minds of Americans as it has come to mean inferior and wimpy. That name carries a heavy onus to all of us. Worse, whatever name we give such beer, be it “mild,” “low alcohol” or even “session” is cursed in our minds. This is the enduring legacy of Prohibition. We have the beer, but we need a name for it that doesn’t scare Americans witless at its mere mention.

The British, in particular, have a great appreciation of such beers. British milds and bitters will, for the most part, be delicious and very enjoyable. In our country,

Utah is the one state where beer in public houses is of 3.2-percent strength.

It is my belief that one of the reasons American "light" beer is so popular (probably even more popular than regular beer) is that Americans really do want a session beer; they just don't want to admit it to themselves or to the world. We really want low alcohol beer and are willing to suffer low-calorie, tasteless swill to get it. "Light" beer averages just under 4-percent ABV. Our people have been weaned on regular Bud/Miller at 4.7-percent ABV with almost no taste. Americans don't expect taste in their beer. We have come, in fact, to prefer tasteless beer—a nation of folks who actually don't like the taste of what passes for beer these days. I get this from young people all the time. They "love" Bud/Miller's (lack of) taste, and don't really want to change. They just want the effect—to hell with taste. When they're on the streets and want "strong" beer they choose cheap malt liquor, which is merely strong "light" beer.

Our craft brewing industry needs to educate people to the joys of taste, the fun of drinking beer and ale. Our whole society is rushing pell-mell down the paths of non-taste. We still have coffee that tastes like lightly flavored water and hamburgers with flavor enhancers to bring out the hamburger factor. There's Cheez Whiz with artificial cheese flavor and sugar-free soda pop that is more like flavored water than the wonderful flavors of yesteryear (root beer, ginger beer and vanilla soda from real spices and roots).

Did I mention bottled water? Bottled water is the ultimate in tasteless beverages. We buy a lot of it at something like \$40 a gallon, about the same price as good expensive craft beer. It is a rare city, indeed, whose water is so bad that one actually needs to buy the bottled stuff. And, yes, I am aware that our president has declared that arsenic in water is OK; but fortunately there's actually little of that out there.

Tastes Great, Less Filling

It is time to take a look at the "tasty" department of the light end of things. America does have some tasty session beers, and there are styles that are not to be taken lightly, even if they are light. All

of the following brews are of 5-percent ABV or less. Here in Oregon, one of my favorite low-caliber beers is Mt. Hood Hogsback Oatmeal Stout, with a boisterous 14.6 Plato or 1.058 gravity, but with only 4.3-percent ABV. Can you imagine how wonderful that beer tastes? All that body and barely noticeable alcohol content! Hog heaven for me, that's for sure.

American-style wheat and/or rye ale seems to be the standard of the light end of craft brewing. Averaging 9.5 to 12.5° Plato, these brews have become "training wheels" of the craft brewing industry, especially those cloudy examples of this type, which have not been filtered. Their alcohol content is 3.5- to 5-percent ABV and they are a mainstay of our industry in recruiting new craft beer enthusiasts. I remember in 1985 when the Widmer Brothers here in Portland brought out their summer seasonal as an unfiltered brew at the request of a local pub owner. Now here was a beer that had only a bit more taste than Budweiser, but when a person held a glass of it in hand, it announced to the world that he or she

had taken the giant step into the new beer revolution.

You could see that, because the beer was cloudy, not clear. The novice beer enthusiast was able to gain the benefits of a brave new world without suffering through the assertive taste of modern craft beer to get there. Moreover, the cloudy beer was an open invitation to take the next step: to actually try the same brewery's regular beer, which most did sooner or later.

Lager beers have long been most popular with Americans, and we make some fine session lagers-with-taste. Samuel Adams Boston Lager is one such example. This beer starts at the light-heavy line of 12.5° Plato (1.050) and ends with 4.4-percent ABV and about 165 calories (per 12 ounces). It is widely distributed across the country and quite delicious, with rich taste and definitely noticeable hops. Sam Adams also has a decent light beer (Samuel Adams Light Lager) with similar color (amber), only 124 calories, modest body (1.7-percent beer extract, triple that of the industrial lagers) and a modest 3.8-



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SESSION BEERS: EASY DRINKING YET SO INVITING

By Jeff Renner

American home and craft brewers make some of the world's finest beers. But one type seems in short supply: session beer, a tasty, low gravity beer that allows, even invites, the quaffing of several pints without getting you slammed.

I was recently asked by another brewer, "Just what is a session beer?" This is a great question, and one that deserves to be discussed, like all matters of great import, over a few pints. Lacking that opportunity, I'll make a quick stab at what a session beer should be for me.

If you were to do an Internet search for "session beer" paired with "Michael Jackson" or "Roger Protz," you'd get a feel for what I think a session beer should be, because this is a distinctively British term.

When two or more Brits gather in their local for a session, they expect everyone to stand a round, or two or three. If four of them get together, they might end up drinking multiples of fours—that's pints, each, at 568 milliliters.

So a session beer should be inviting, easy drinking, low in alcohol and non-satiating.

Miller Lite's slogan "Tastes great, less filling," is not a bad start, but light beer is not, to my mind, a session beer. It fails on the first criterion—it isn't inviting. An inviting beer leaves a lingering flavor that invites another swallow.

This is related to easy drinking. A session beer has enough flavor to enjoy but not so much to be distracting. Every once in a while, you should stop after a swallow and say to yourself, "Damn, this is a good beer." But you shouldn't be tempted to meditate on it. You've got important things to talk about with your mates besides beer, even though beer may be one of the topics.

It should be interesting enough to not be boringly tiresome, but not so strong in flavor to fatigue your palate, either. It shouldn't be served so cold that your taste buds are numbed.

A session beer should be moderate enough in body that it is not satiating, and should be low in carbonation so it doesn't fill you up with gas.

Easy drinking is not enough, though. I remember, albeit somewhat hazily, at a picnic a wonderful keg of Reissdorf Kölsch that was perilously easy to drink. However, by the end of the afternoon, I felt like someone had stolen the bones in my legs.

A session beer should be low enough in alcohol to encourage conversation but not tangle your tongue. You should be able to stand up at the table and say, "This is my round. What's yours?" and make it back from the bar holding four pints and not spill a drop on your shoes. Or at least not much. You should be able to still play a good game of darts or skittles or shove ha'penny.

At the end of the evening you should be able to walk home (it's a local, remember?) without falling into the canal. You should wake the next morning from a refreshing night's sleep feeling fine.

There is only one beer that fills all these criteria for me—British (or British-style) cask conditioned ordinary bitter. An ideal session beer for me would be a medium amber (for complexity) bitter of about 1.037 original gravity (~3.7 percent ABV), hopped in the low to mid 30s and preferably dry-hopped.

The Brits pack a lot of flavor into a beer like this. Part of this is in the brewing and part of it is that it has low carbonation and is served at cellar temperature.

There are a few other beers that fit into this category—British mild, Irish stout, Scottish 60/- or 70/- ale, or German schankbier. But as for me, I'm a bitter man.

Jeff Renner has been a homebrewer for more than 30 years and is a founding member of the Ann Arbor Brewers Guild.

percent alcohol! In a blind tasting with the parent beer, the Light comes off poorly as might be expected, but against the Bud/Coors/Miller mob it is great!

Anchor Steam Beer is a widely distributed, well-made American brew, and one of my all-time favorites. This is a beer style we have come to call California Common beer. Anchor Steam is the progenitor (and the only current example) of that type. It, too, starts at OG 12.5° Plato (1.050) and ends at 4.7-percent ABV. There's wonderful taste because the beer is a hybrid between lagers, which are cold fermented and aged, and ales. California Common beers are fermented by the same yeast, but at much warmer (65 to 68° F [18 to 20° C]) ale temperatures. These aging temperatures promote faster changes from the action of the yeast, yielding a somewhat more assertive taste profile. The taste profile is powered by a fairly heavy unfermentable sugar count (3.4 percent). The same brewery also has Anchor Small Beer at under 3.5-percent ABV.

Another good hybrid style is altbier. Widmer Alt starts out at 11.5° Plato (1.046) and ends with 4.5-percent ABV. In this case, the yeast is warm-temperature top-fermenting at the same temperatures as the common beer, then aged longer at colder temperatures. Both of the above brews have rich taste and a smooth palate. In each case the hop and malt factors are quite noticeable. These are fine session beers.

English-style bitters, and some special bitters and pale ales, also meet these requirements. One of my favorites is from Pyramid of Seattle, Wash., Portland, Ore. and Berkeley, Calif. Their Pyramid Pale Ale has always been a favorite of mine. Starting at 11° Plato (1.044) and finishing with a nice 4.4-percent ABV, this fine ale beer packs a wonderful taste bundle to titillate one's palate. In truth, what we really need is something even lighter, a brew more in the tradition of the great British milds.

If your local brewery does not have a session beer (less than 4.5-percent ABV) you must ask them: Why not? It is in their interest to have low caliber beer for those folks who'd like to drink the whole evening away, and not get smashed in the process.



STYLE DEFINITION (BJCP)

Aroma: There should be some hop aroma although it may range from robust to barely noticeable. Malt aromatics should be noticeable with mild to moderate fruitiness in keeping with the beer's basic style (which may be any the brewer wishes).

Appearance: Medium gold to deepest black, should present an attractive head formation on pouring, but in keeping with the beer's basic style.

Flavor: The beer should be brewed primarily to provide a good depth of well-balanced flavor for the drinker. Tasteless beers should not be tolerated. The flavor should follow the beer's basic style.

Mouthfeel: Medium light to medium body, carbonation in keeping with the beer's basic style.

Comments: The object here is to encourage and allow the drinker to continue drinking, while still remaining relatively sober and in control of his or her faculties for at least three to four glasses.

Ingredients: This beer can be made using either ale or lager yeast and any malt or hop bill or style the brewer chooses. The ingredients should be in character with the style selected by the brewer.

Vital Statistics:

OG: 1.030 to 1.060

IBUs: any level the brewer desires

FG: 1.034 or less as necessary

SRM: 2 to 40

ABV: 4.5% maximum

Commercial examples: Boddington's Pub Draught, Guinness Draught, Belhaven 60/, Gales Festival Mild, Mt. Hood Hogsback Oatmeal Stout, Wasatch Irish Stout, Wasatch Polygamy Porter, Squatters East Kent Brown, Lucky Labrador Hawthorn's Best Bitter, BJ's Ivan's Golden Ale.

Moreover, if your local brewery serves all of its beer in 16- to 22-ounce pounder glasses, that's not very helpful either. Talk to the management and persuade them to offer a 10- or 12-ounce glass for folks who want to keep their intake down. Small glasses will actually make more profit per barrel for the innkeeper. I remember drinking altbier in old Dusseldorf, with tiny, austere 8-ounce glasses. They had to be refilled quite often, but each refill would remind the drinker about watching his or her intake.

The British entries at last year's Great British Beer Festival were of great interest to me. Sadly, that country's young drinkers are busy transferring affections from their

own tasteful brews to the Bud/Coors/Miller group. Many of the pubs I visited had no draught milds at all, and those that did were likely to have the choice limited to only one brew.

The GBBF champion mild, Lee's GB Mild, at 3.5-percent ABV and 22 IBU was quite enjoyable, as was Gales Festival Mild, 4.8 percent. The bottle won gold, and was a superb beer, rich and full bodied, well balanced and dry. "Satiating" is what Michael Jackson called it. It has an excellent "come hither" effect, and I had the good fortune to start my beer and chocolate tutored tasting with the cask version. I found all of them quite enjoyable, as was the bitter category's gold medal Greene King IPA, at 3.6 percent and 26 IBU. It was a wonderful bitter and quite delicious, but certainly not an IPA by anybody's standards, even British, I would think. Yet the 26 IBU actually came across as pleasantly hoppy!

Both Jackson and Roger Protz (in tutored tastings) addressed the primary problem with present day British beer: brewers seek to make their beer ever more taste- and character-free (now where in the world did they get that idea? Imagine less flavor and character: surely not from Anheuser-Busch!) Protz told us they should "make the beer with more character." I second that idea, especially in the IPA department, of which many British brewers (and yes, drinkers) have no grasp whatsoever.

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Fred Eckhardt drinks most any beer he can get his hands on in Portland, Ore., but he shuns all 116 of the "lite" ilk.

Reference

¹ from 12:01, 16 January 1920 to 5 December 1933 at 5:32+ p.m. EST.

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the
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ORDINARY

Who would want anything ORDINARY? What **bold homebrewer** would want anything mild? The terms “ordinary” and “mild” seem counter to what the majority of homebrewers crave: something *flavorful* and *extraordinary*! Don’t let these labels deceive you. These British beers are flavorful, and when well brewed and properly served, they can be *extraordinary*.

By Jamil Zainasheff



Not surprisingly, the best food pairings for these styles is the kind of food one finds in a pub...Fish and chips, bangers and mash, and shepherd's pie are also fine pairings with bitter or mild.

were 8-percent alcohol 500 years ago have become 3 percent today.

Today, mild and ordinary bitter are typically a brewery's lowest alcohol and lowest gravity offerings. These styles usually are not bottled (or are bottled only in higher gravity versions) and are instead served on cask or draft.

The Styles

A beer doesn't have to have a lot of alcohol to have a lot of flavor. A proper pint of mild or bitter, while low in alcohol, is a complex and flavorful beer.

Mild can be broken into two subtypes, pale and dark. Mild always has some malt character in the aroma, a hint of toffee or caramel and no hop aroma. Pale mild is a light amber or dark golden color up to a light brown. Dark mild is a deep, ruby-highlighted brown, with a low, off-white to tan head. The flavor features rich caramel notes, a touch of roast (in dark mild), a malty backbone and a balancing hop bitterness that leaves the beer even, though it can be slightly sweet or slightly dry. While the flavor can have a huge range of malt and fermentation flavors, there is usually no hop flavor. Overall the beer is refreshing, flavorful and complex.

An ordinary bitter is usually drier and has more hop character than mild. Yet one brewery's mild might be hoppier than another brewery's bitter. In any case, bitter should be firmly bitter, but the bitterness should not completely overpower the malt and fruity esters. The bitterness is often very close to balanced with the malt, and the hop flavor and aroma remain restrained. Remember, these are session beers to be consumed in large quantities over the course of an evening, so balance is important. Hops, malt, fruity esters and caramel notes are all in balance and all are generally restrained.

History

Five hundred years ago, almost all British beers existed as both stale and mild ales. The word "mild" is one of the oldest terms used to describe English beer. From the earliest use of the term through the 18th century, "mild" referred to an entire class of ales. These beers were much bigger than today's mild (perhaps 1.080 or more) and they were served young and sweet with residual malt sugars. Any beer could be called mild as long as it lacked the sourness of aged beers, such as stale or stock ale. Publicans would blend various amounts of stale and mild beer for their customers, to balance the sweet with the sour.

While it was just a matter of time before all beers turned sour, there was no time limit on calling ale mild. If an ale remained sweet, it was still considered

mild. As brewing technology advanced and the use of hops became standard, long-term aging of beers and sourness began to disappear. Eventually the term "mild" took on a different meaning, referring to a beer with a slightly sweeter balance from low hop bitterness. Today the name refers to the style's malt focus and relative lack of hop bitterness.

Bitter is a very young style in comparison. Pale beers and the use of hops really took off in the 19th century, yet it wasn't until the 20th century that the term "bitter" became commonplace to describe a beer style.

Over time the strength of milds and bitters waned. Through market forces, increasing taxation and rationing during two World Wars, the starting gravity of mild and bitter fell further. Beers that

Dark Mild

Ingredients

for 5 U.S. gallons (19 liters)

5.0 lb	(2.27 kg) English Pale Malt
0.75 lb	(0.34 kg) Crystal 60L
0.50 lb	(0.23 kg) Crystal 120L
0.50 lb	(0.23 kg) Pale Chocolate Malt 200L
0.70 oz	(20 g) East Kent Goldings hops, 5% alpha acid (60 min)
	White Labs WLP002 English Ale

Target Original Gravity: 1.035
(8.87 Plato)

Approximate Final Gravity: 1.011
(2.72 Plato)

Anticipated SRM: 20

Anticipated IBU: 16

Wort Boil Time: 90 minutes

Directions

Single infusion mash at 154° F (68° C) using a thick mash of 1 quart mash water to 1 pound of grain. Ferment at 67° F (19° C) until yeast drops clear. Transfer to keg or cask, carbonate to 1.5 volumes and serve at 50° to 55° F (10° to 13° C).

Extract Brewing: Replace English Pale Malt with 3.6 lb (1.63 kg) Maris Otter liquid malt extract.

Recently breweries have been brewing variants of traditional bitters. Some brew a “summer bitter,” which lacks the caramel character of traditional bitter. Others experiment with American or European hops. Regardless of these changes, bitter is still all about an easy-drinking, balanced beer.

Keys to Brewing Milds, Bitters

You can brew both styles with the same base malt and hops. The differences in the styles stem from how you use those ingredients, and the addition of certain specialty grains. The basis for today's mild and bitter is well modified English pale ale malt. Use the highest quality pale ale malt you can get. If you can find a cultivar such as Maris Otter or Golden Promise that has been floor malted in the United Kingdom, so much the better. While you can use U.S. domestic two-row pale malt in a pinch, higher kilned pale ale malt (~2.5 L) provides the biscuit-like maltiness that is fundamental to these styles.

If you can find mild malt, you can use it as the base for your mild ales with good results. However, you'll need to adjust your specialty grains to compensate for the darker color of the malt (~5 L) and the increased toasted, nutty flavor.

These highly modified malts are perfectly suited to single infusion mashes, which is typical for all British beers. Mash-in thick, around one quart per pound of grist, and hold the mash at 152° F (67° C) for bitter and 154° F (68° C) for mild to create the highly dextrinous wort that is needed in these styles, as it results in a beer with more non-fermentable, complex sugars. It is these polysaccharides that result in enough residual gravity and body to keep the beer from being thin and watery.

If you're brewing with extract, try to get 100-percent Maris Otter pale ale malt extract, which is an excellent substitute for pale ale malt. If you can't get it through your local homebrew retailer, you can order it online from www.morebeer.com.

Mild

Pale mild can be very simple in terms of grain bill. Some commercial brewers use only pale ale malt and caramel coloring, but most homebrewers add crystal malt,

Ordinary Bitter

Ingredients

for 5 U.S. gallons (19 liters)

6.0 lb	(2.72 kg) English Pale Malt
0.5 lb	(0.23 kg) Crystal 120L
0.25 lb	(0.11 kg) Special Roast Malt
0.88 oz	(25 g) East Kent Goldings hops, 5% alpha acid (60 min)
0.50 oz	(14 g) East Kent Goldings hops, 5% alpha acid (30 min)
0.50 oz	(14 g) East Kent Goldings hops, 5% alpha acid (1 min)
0.25 oz	(7 g) East Kent Goldings hops, 5% alpha acid (dry hop)
	White Labs WLP002 English Ale

Target Original Gravity: 1.035
(8.87 Plato)

Approximate Final Gravity: 1.009
(2.36 Plato)

Anticipated SRM: 10.7

Anticipated IBU: 30

Wort Boil Time: 90 minutes

Directions

Single infusion mash at 152° F (67° C) using a thick mash of 1 quart mash water to 1 pound of grain. Ferment at 67° F (19° C) until yeast drops clear. Transfer to keg or cask and add 0.25 to 0.5 oz (7 to 14 g) East Kent Goldings hops. Carbonate to 1.5 volumes and serve at 50° to 55° F (10° to 13° C).

Extract Brewing: Replace English Pale Malt with 4.3 lb (1.95 kg) Maris Otter liquid malt extract.

Victory and other character grains to give the beer some caramel notes and malt complexity.

Dark mild has a grist similar to pale mild, plus at least one dark grain. The dark grain is not just for color, but for flavor as well. Brewers commonly use chocolate or black malt to give their dark mild a touch of roast flavor. The darker the grain you use, the more restraint required. Using lighter color roasted malt, such as pale chocolate (200L) allows you to use a larger portion of the grain, giving both color and a nice toasty, chocolate note, but without the excessive astringency that can be had with larger amounts of highly kilned grains.

While not common in the United States, commercial brewers in England often include some non-malt fermentable in their mild. This is usually some form of sugar, such as dark cane sugar or syrup. A small amount of black treacle can also add an interesting dimension to a dark mild. Lyle's syrups, imported from England, are a good choice and can be purchased at many homebrew retailers or online at www.britisshoppe.com or www.madeinbritainltd.com.

Both pale and dark mild are most often brewed with low alpha acid English hops. Good choices are East Kent Goldings or Fuggles. Challenger, Northdown and Willamette are interesting alternatives for experimentation. Hopping should be restrained and usually made with a single addition just for bittering.

Today, mild is commercially brewed throughout England with a wide range of water types, from soft to hard. Most water, if it tastes good from the tap, will make a fine mild. If you have particularly hard water, you might cut it with some distilled water or boil your water to precipitate some of the calcium carbonate.

Yeast selection provides a great deal of the complexity in flavor and aroma found in many milds. Fortunately, there are quite a few excellent yeast strains available, each providing characteristic yeast flavors and aromas appropriate to mild. In general, try to select British yeast that attenuates less than others (about 66 percent),

Pale Mild

Ingredients

for 5 U.S. gallons (19 liters)

5.5 lb	(2.49 kg) English Pale Malt
0.75 lb	(0.34 kg) Crystal 75L
0.25 lb	(0.11 kg) Crystal 120L
0.25 lb	(0.11 kg) Victory Malt 25L
0.80 oz	(23 g) East Kent Goldings
	hops, 5% alpha acid (60 min)
	White Labs WLP002
	English Ale

Target Original Gravity: 1.035

(8.87 Plato)

Approximate Final Gravity: 1.010

(2.45 Plato)

Anticipated SRM: 12.4

Anticipated IBU: 19.7

Wort Boil Time: 90 minutes

Directions

Single infusion mash at 154° F (68° C) using a thick mash of 1 quart mash water to 1 pound of grain. Ferment at 67° F (19° C) until yeast drops clear. Transfer to keg or cask, carbonate to 1.5 volumes and serve at 50° to 55° F (10° to 13° C).

Extract Brewing: Replace English Pale Malt with 3.9 lb (1.77 kg) Maris Otter liquid malt extract.

accentuates the malt rather than the hops and provides some fruity or woody esters, even with a cool fermentation. Some good choices are White Labs WLP002 English Ale, WLP005 British Ale or WLP017 Whitebread Ale; or Wyeast 1968 London ESB Ale, 1318 London Ale III or 1099 Whitbread Ale. If you prefer using dry yeast, DCL Safale S-04 produces decent results. Ferment between 65° F (18° C) and 70° F (21° C), ideally around 67° F (19° C), for all of these yeasts.

Ordinary Bitter

Brew ordinary bitter with a portion of dark crystal malt, in the range of 75 to 150L. The dark crystal provides both flavor and color for the beer and can be up to 10 percent of the grist without getting heavy. You can explore other character grains such as Munich, special roast or Victory to enhance the malty/toasty/biscuity character, but use restraint. Corn or cane sugar is also acceptable in brewing bitter, like most English beers, but keep the total amount to less than 10 percent of the fermentable sugars.

If you wish to try your hand at a summer bitter, use only English pale ale malt.

Good hop choices are the same as for mild: East Kent Goldings, Fuggles, Challenger, Northdown and Willamette.

Always use the best of the aroma and flavor hops available. If you want to experiment, brew your summer bitter with a good quality American or European aroma hop, such as Amarillo, Saaz or Hallertauer.

Much has been written about the water of Burton-upon-Trent as a key element in the development of India pale ale and, later, bitter. It is true that water with higher sulfate content does enhance the sharp, bitter aspect of a beer. If you have very soft water, you might consider adding some gypsum or Burton salts (about 0.5 teaspoon per 5 gallons). However, bitter is brewed today with a wide range of water types and most water makes good bitter, so use restraint in any salt additions.

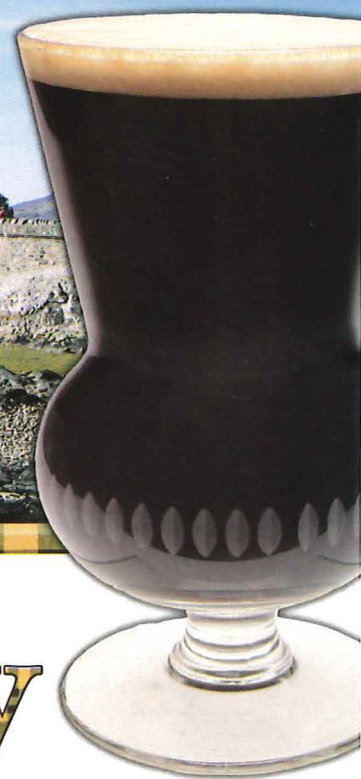
As in mild, yeast provides a great deal of the complex flavors and aromas found in bitter. When selecting yeast for bitter, choose an English yeast that attenuates more than the yeast for mild (about 70 percent). Of course, some yeasts will do quite well for both bitter and mild, but it is fun to explore the character of the different yeasts. Some good choices to explore are White Labs WLP002 English Ale, WLP005 British Ale, WLP013 London Ale, *(continued on page 50)*



Scottish Ale:

Clean and Malty

by Jamil Zainasheff



Scottish ales have their own lengthy history and, much like mild, these beers were significantly bigger beers in the past.

For example, a 60 shilling beer (60/-) in the early 19th century would have had a starting gravity of 1.080 or more. It is interesting that Scottish ales are still referred to by shillings, which today only indicates the relative strength of the beers to each other. Historically, the shillings value was the cost of the beer per barrel, including tax. As you can imagine, the beer and its price tended to change as taxes and the cost of ingredients increased or decreased.

Some consider the Scottish 60/- to be a form of pale mild. While it might seem similar, Scottish-style ale is maltier and cleaner than mild. The focus of Scottish ales is on a clean malt profile. From first sip to last, Scottish ale exhibits a gentle malty sweetness in both the aroma and flavor, accompanied by a low caramel note. Ideally, there are no fruity esters from fermentation and no hop flavor or aroma. Roast barley is often used in very small quantities for color mainly, but it tends to lend a very slight roast note to the beer overall. Any perception of earthy peat notes or possibly smoke phenols is subtle, if at all.

Brewing Scottish 60/-

Scottish ale brewers have two schools of thought. One camp brews using pale ale malt, a touch of black malt or roast barley for color, and heavy kettle caramelization. The other uses specialty malts such as crystal, honey and Munich to provide the characteristic malty, caramel flavors of Scottish ale. Smoked malt is not appropriate for this style and should not be included.

Either way, start with a well-modified English pale ale malt of the highest quality. You will want to mash-in thick, around 1 quart per pound of grist, and hold the mash at 158° F (70° C) to achieve a nice dextrinous wort.

Like mild and bitter, good hop choices are East Kent Goldings or Fuggles.

Scottish ale is traditionally brewed with fairly soft water, which enhances the soft maltiness of the beer. If you have particularly hard water, you might cut it with distilled water or boil your water to precipitate some of the calcium carbonate. I have moderately hard water, but I only adjust my water for proper mash pH when brewing any of these styles. If your water tastes good, it will make a fine Scottish ale.

Scottish 60/- (Caramelized)

Ingredients

for 5 U.S. gallons (19 liters)

6.0 lb	(2.72 kg) English Pale Malt (Golden Promise is ideal)
3.0 oz	(85 g) Roast Barley 575L
0.53 oz	(15 g) East Kent Goldings hops, 5% alpha acid (60 min) White Labs Edinburgh Ale WLP028 or Wyeast 1728 Scottish Ale Yeast

Target Original Gravity: 1.034 (8.45
Plato)

Approximate Final Gravity: 1.012 (2.99
Plato)

Anticipated SRM: 13.7

Anticipated IBU: 13.1

Wort Boil Time: 120 minutes

Directions

Single infusion mash at 158° F (70° C) using a thick mash of 1 quart mash water to 1 pound of grain. Boil the first 1 gallon of wort from the mash over high heat until reduced by 50 percent. The purpose is to create caramelization of the wort. You may need to add some water to end up at the correct starting gravity and volume. Ferment at 65° F (18° C) until yeast drops clear. Transfer to keg or cask, carbonate to 1.5 volumes and serve at 50 to 55° F (10 to 13° C).

Extract Brewing: Replace English Pale Malt with 2.8 lb (1.27 kg) Maris Otter liquid malt extract.

Yeast selection for Scottish ales is straightforward. Pick a clean fermenting yeast with moderate attenuation. Many brewers have success with White Labs Edinburgh Ale WLP028 and Wyeast 1728 Scottish Ale Yeast. However, since I use a lot of White Labs California Ale WLP001 for many other beer styles, I ferment my Scottish ales with it. It is a clean yeast, lacking most of the diacetyl and ester production of other yeasts, and with a cool, controlled fermentation, attenuation is moderate.

Ferment around 60° F (16° C) with the Edinburgh or Scottish yeast or 65° F (18° C) with the California Ale yeast. While Mild and Bitter count on the yeast to deliver additional dimensions to the character of the beer in the form of fruity and oak notes, Scottish ales are all about the maltiness.

Jamil Zainasheff was the 2004 Homebrewer of the Year in the AHA National Homebrew Competition. He is a newly elected member of the AHA Governing Committee and a member of QUAFF (Quality Ale and Fermentation Fraternity) in San Diego. 

Scottish 60/- (Specialty Grains)

This basic formula, brewed to varying strengths, has won two golds and two silvers in the final round of the NHC over the past three years.

Ingredients

for 5 U.S. gallons (19 liters)

4.0 lb	(1.81 kg) English Pale Malt (Golden Promise is ideal)
0.5 lb	(0.23 kg) Munich Malt
0.5 lb	(0.23 kg) Honey Malt
1.0 lb	(0.45 kg) Crystal 40L
0.5 lb	(0.23 kg) Crystal 120L
2.0 oz	(57 g) Pale Chocolate Malt 200L
0.53 oz	(15 g) East Kent Goldings hops, 5% alpha acid (60 min) White Labs WLP001 California Ale

Target Original Gravity: 1.034
(8.45 Plato)

Approximate Final Gravity: 1.012
(2.99 Plato)

Anticipated SRM: 15.4

Anticipated IBU: 13.1

Wort Boil Time: 90 minutes

Directions

Single infusion mash at 158° F (70° C) using a thick mash of 1 quart mash water to 1 pound of grain. Ferment at 65° F (18° C) until yeast drops clear. Transfer to keg or cask, carbonate to 1.5 volumes, and serve at 50 to 55° F (10 to 13° C).

Extract Brewing: Replace English Pale Malt with 2.8 lb (1.27 kg) Maris Otter liquid malt extract.



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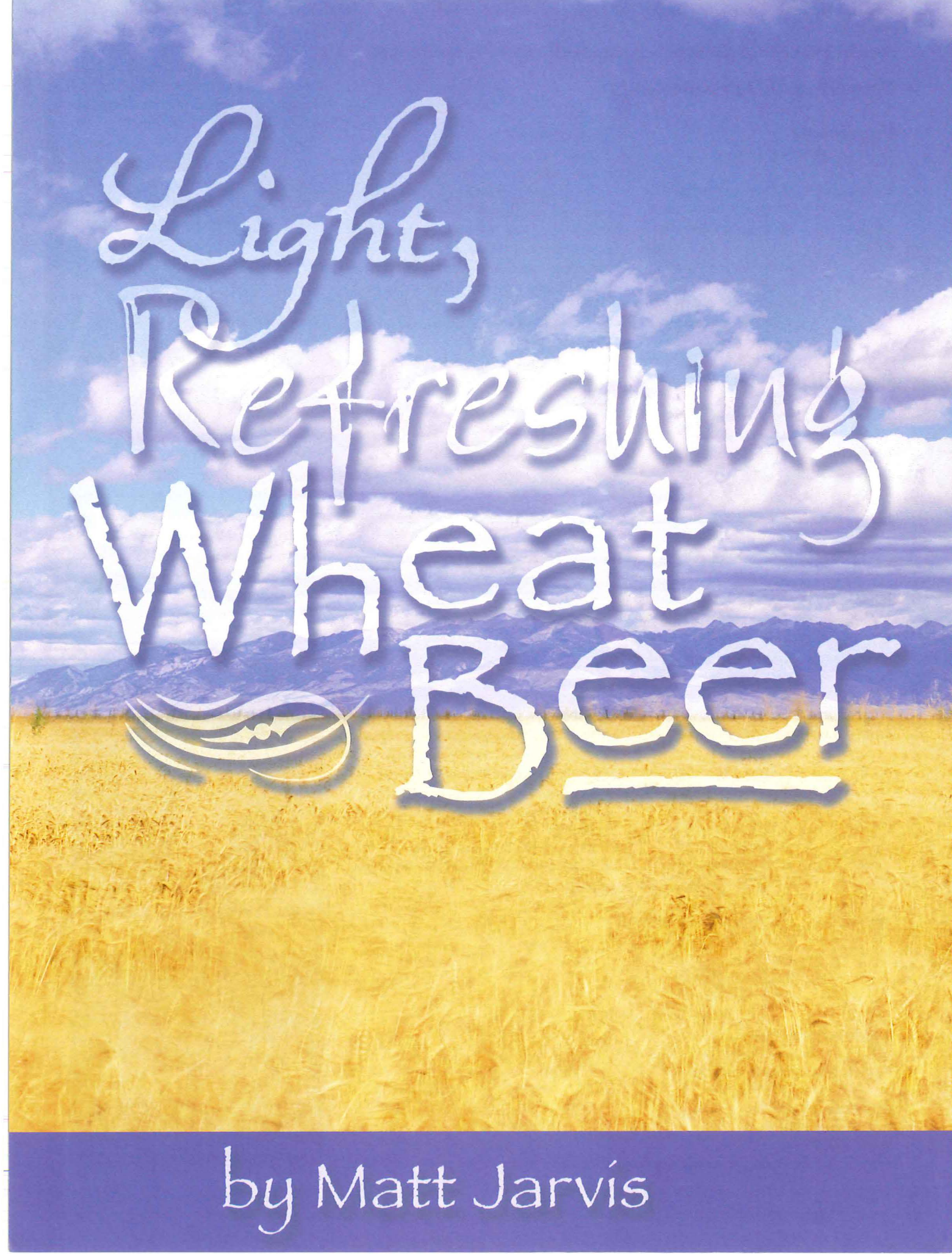
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Light, Refreshing Wheat Beer

by Matt Jarvis

Wheat beers enjoy a high standing in the realm of session beers, since they are almost universally light, refreshing and thirst quenching. As with most other session styles, a wheat beer won't tax your palate too much, nor make you ponder the nature of things. That makes it ideal for enjoying in great quantities.

Another nice thing about (session) wheat beer styles is that there are several types to choose from, such as smooth and light American wheat and German weizen. The dunkelweizen is darker and chewier and the Berliner weisse is more sour. And let's not forget one of my favorites—Belgian wit beer with a nice dose of coriander and other wonderful spices.

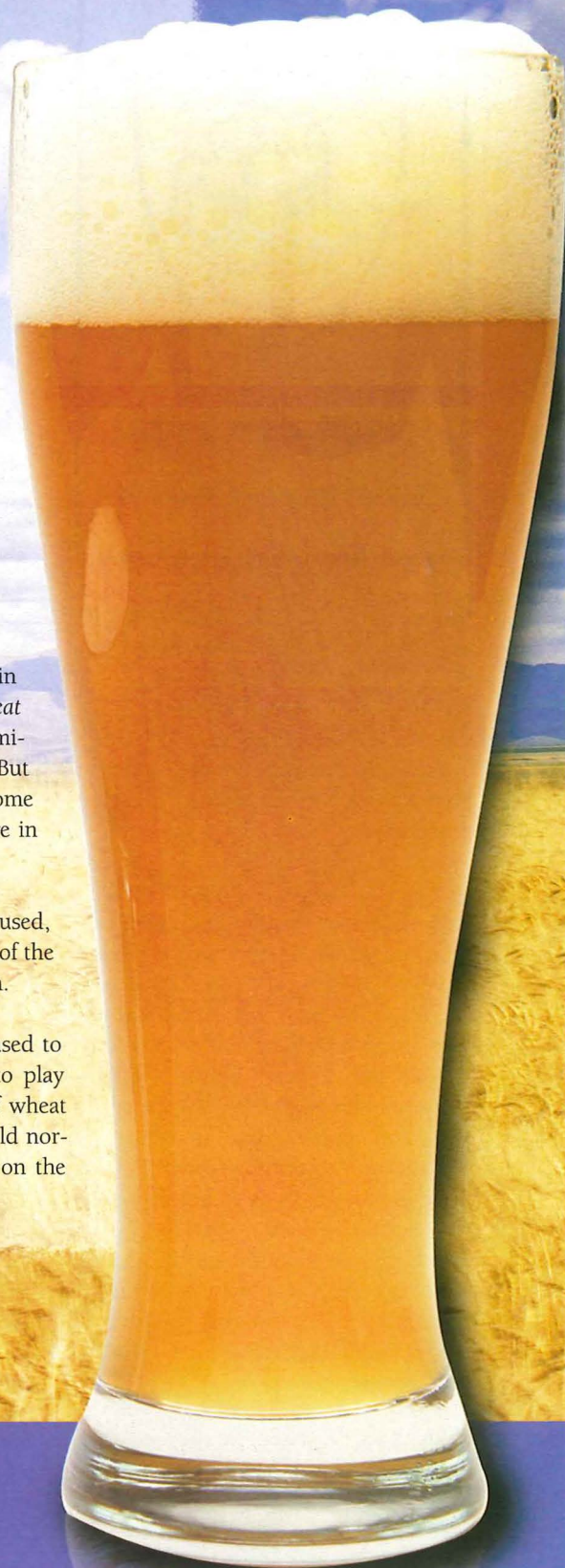
I'll focus mainly on American wheat in this article. Being fairly light and so very refreshing, wheat beers are a big hit during the summer barbecue season. I make it a point to put more wheat beers into my brewing rotation during mid to late spring so I can have a steady supply during these months. There's nothing quite like cleansing your palate with one of these beers after enjoying some barbecued chicken, ribs or even corn on the cob with all the fixin's.

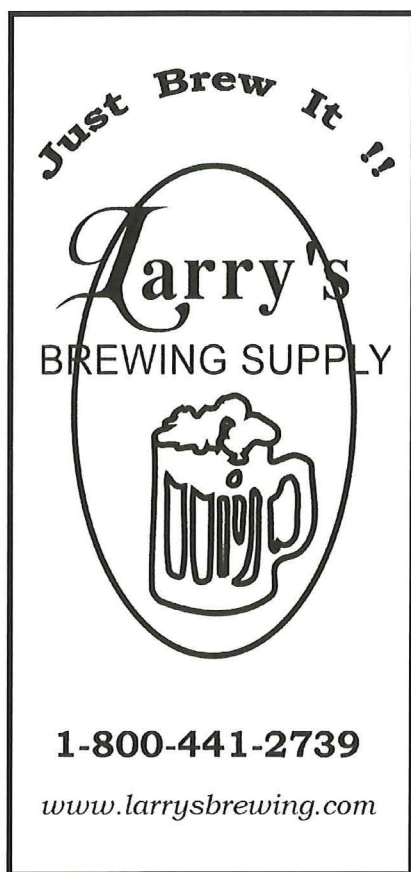
What's Up with Wheat?

Historically, wheat beers are generally considered to have originated in southern Germany. According to Ray Daniels in his book *Designing Great Beers*, weizen (weissbier) and Berliner weisse have been jockeying for dominance in that region since people started keeping track of such things. But don't forget about the Belgians—their wit (white) beer may have become obscured over time but seems to be enjoying a resurgence, especially here in the United States.

Why use wheat? Depending on the amount of the grist and type of wheat used, it can add a unique graininess or earthy character even in a lighter version of the style. Also wheat can help provide for better head formation and retention.

Wheat malt has smaller kernels and is without a husk, so if you aren't used to dealing with grains smaller than your usual base malt you may need to play around with the gap settings on your mill. Since I tend to make a lot of wheat beers I've found it convenient to set my gap just a bit smaller than I would normally want it for my pale or Pilsener malt but still allow a good crush on the smaller wheat kernels.





Not all forms of wheat (malted, unmalted, flaked, torried) used in brewing need to be crushed, but they all need to be mashed in order to convert the starches. If I'm using flaked grains, I usually add them to the other grains in my bucket so I don't forget to add them to the mash.

Keys to Brewing with Wheat

Depending on your equipment and brewing karma, using high proportions of wheat in your grist can present some challenges with a stuck runoff and possibly some scorching in the brew kettle if you use a false bottom. This is because of the higher percentage of proteins and gluten found in wheat that contributes to creating something of a paste in your mash or suspended gluten particles in the kettle. I've found rye to be a bigger problem though and haven't ever had problems with lautering or runoff, but I've also heard many horror stories from those folks that have had such problems.

Even with today's highly modified malts, some brewers prefer to do a step

Summer Wheat

Here is one of my all-time favorite American Wheat Beer recipes that I came up with a few years ago. This one is very popular during barbecue season. It's simple, easy and quite tasty.

Ingredients

for 10 U.S. gallons (38 liters)

8.5 lb	(3.9 kg) two-row pale malt
10.0 lb	(4.5 kg) Wheat malt
1.25 oz	(35.4 g) Cascade hops, 5.75% alpha acid (7.5 HBU) 60 min
0.75 oz	(21.3 g) Cascade hops, 5.75% alpha acid (4.5 HBU) 20 min
	Wyeast 1056 American Ale/Chico (but any yeast that attenuates well and has a clean, neutral finish should work well)

Original Gravity: 1.051

Final Gravity: 1.012

IBUs: 18-20

SRM: 3.5

Approx ABV: 5.2%

90 minute boil

Directions

If you are going to be using hulls, start pre-soaking them as you begin setting up. By the time you have your gear in place and strike liquor heated up the hulls should be ready.

Preheat mash tun if appropriate for your equipment. Aim for a strike temperature of 151° F (66° C) by adding about 5.5 gallons of water at 166° F (74° C) to the grist (and hulls if used). Stir well and adjust as necessary. Cover and mash for 60 minutes.

Begin runoff. I've made this recipe over a dozen times and have never experienced any runoff problems (and I rarely use hulls). Neither has anyone that I've given the recipe to. But if the beer gods aren't smiling on you and you get a stuck mash, then do those things that deal with this such as refloat the mash or add some more hulls, stir and try the runoff again.

Sparge with enough water at 170° F (77° C) to collect enough wort volume for a 90-minute boil. Sparging with about 8 gallons should give you a kettle volume of approximately 12 gallons.

Boil for 30 minutes and then add bittering hops. With 20 minutes left, add the flavor hops.

After quick cooling, aerate and pitch yeast. You will probably want to consider using a blowoff tube especially if you have a large or active yeast starter since wheat beer fermentations can be quite vigorous. It's because of this that I learned the old homebrewer's joke about mopping the kitchen ceiling. It happens.

Fermentation should be complete within a week. Transfer to keg or bottle and condition for two to three weeks. If you keg it you can be enjoying this beer within two weeks from brew day!

mash if they are using a lot of wheat. A typical program might be 146° F (63° C) for 30 minutes, 156° F (69° C) for another 30 minutes, then a mashout (or not) to the kettle.

Why a step mash? Good question. The idea is that doing both a beta and alpha rest will help to overcome so-called shortcomings with enzymatic conversion

from the high wheat portion of the grist. I've mashed with and without a step mash, and quite frankly, a single infusion seems to work just fine in most cases.

But, for what I thought was a rather protein/gluten rich bag of wheat malt, I once even threw in a gluten rest at 110° F (43° C) before continuing on. In this case it made a big difference in how

much gluten and proteins collected under my false bottom during the boil (and helped prevent scorching). My thinking is that this one bag of malt was something of a fluke, so just for the record I rarely step mash.

When you want to use high wheat content in a recipe (or any other grain or adjunct that you suspect might give you a stuck runoff) you might want to consider using the hulls from barley, rice or oats. These are the "chaff" of the grain and act as filler to make up for and enhance what the wheat or other grain lacks in bulk. Think of it as added fiber for your mash.

At the very least, you will want to rinse your hulls before using them to remove the dust. I also prefer to soak mine for a while so that whatever water they are going to absorb has already been done before they get added into my mash. This also helps make them a non-issue, for the most part, with your strike temperature calculations. Place them in a muslin or other fine-meshed bag, rinse and/or soak, remove from the water and either allow to drain for a few minutes or go outside and swirl them around to force out the water.


Wheat beers tend to have lower hopping levels, such as 8 to 15 IBUs for lighter German styles, though the BJCP guidelines go up to 30 IBUs for an American style. Hops like Hallertauer and Tettnanger seem to do well in any of the wheat styles, but in an American version just about all of the "C" hops (Chinook, Cascade, Columbus, Centennial and Crystal) work together for a unique New World taste.

For American wheat beers, yeast choices are usually limited to well attenuating neutral types with flocculation being only a minor concern. The major yeast manufacturers make yeast specifically for this style such as Wyeast 1010 and White Labs 320. Typically any of the pale ale or "Chico" style yeasts, such as Wyeast 1056, White Labs WLP001 or SafAle dry yeast works well. Look to some varieties like Wyeast 1007 (German ale) or WLP036 (Dusseldorf alt) if you don't mind crossing over styles.

For German versions of wheat beers such as weizen or weissbier, a phenolic (clove, banana) producing yeast from Wyeast such as 3056 (Bavarian Wheat), 3068 (Weihenstephan Weizen) and 3333 (German Wheat) are great choices. White Labs offers WLP351 (Bavarian Weizen), WLP300 (Hefeweizen) and WLP380 (Hefeweizen IV).

It's been my experience that any combination of yeast and hops works well, with the exception of some of the heav-

ier German yeast and citrusy hops. I would avoid something like WY 3068 with Cascade hops, for example. It's a taste combination that just did not seem to go well together in my opinion, but please don't let that stop you from giving it a shot.

Matt Jarvis is a BJCP certified judge and a member of the Cascade Brewers Society in Eugene, Ore. He is an active brewer who can't decide if his favorite style is Belgian Wit or Imperial IPA. 



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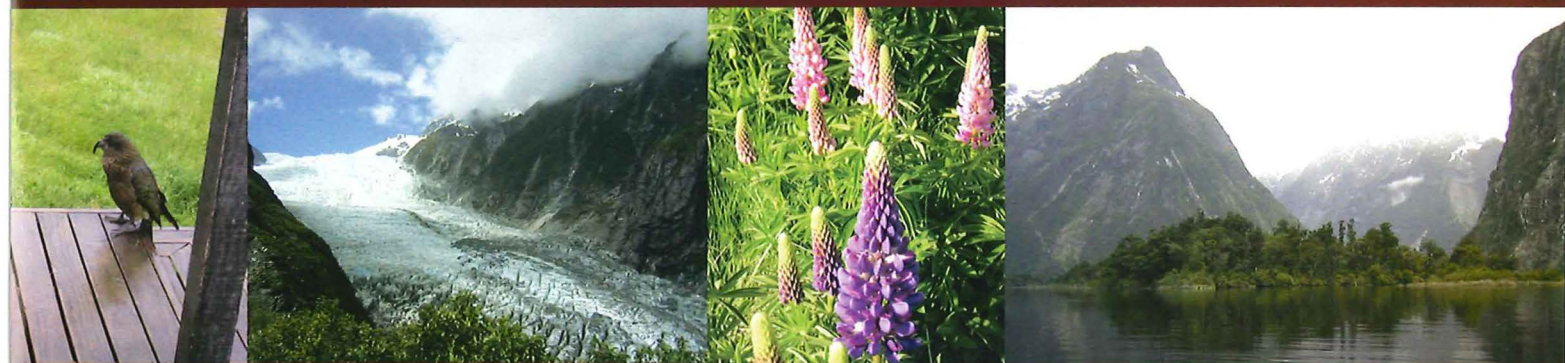
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Beer in the Land of the Long White Cloud



NEW ZEALAND'S SOUTH ISLAND AWASH IN GOOD BREW

By Amahl Turczyn-Scheppach

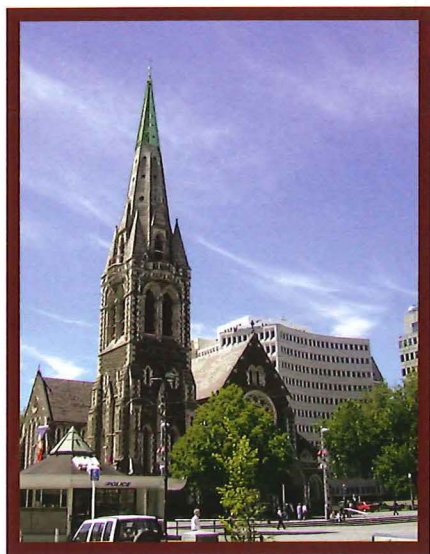
New Zealand combines all the charm and culture of Great Britain with the natural beauty and rugged, unspoiled scenery of Hawaii's less populated islands. Settlers from Polynesia called these two islands Aotearoa, or Land of the Long White Cloud.

The South Island is generally preferred as a vacation destination by travelers because of its lower population, snowy peaks and lush green forests. Three of the most popular cities on the island include Christchurch, Dunedin and Queenstown. Christchurch and Dunedin lie on the east coast, which has a drier climate than in the west, and are heavily influenced by their immigrant ancestry (English and Scottish, respectively).

Christchurch, though the largest city on the South Island with about 340,000 people, retains a distinctly small-town feel. Its English influence, sprawling parks, rivers, a university, fascinating and seemingly

endless botanical gardens, and a multitude of beer pubs make it a perfect bastion of civilization before taking on the glaciers, mountains and fjords of the island's southern reaches.

While we never made it to Dunedin, the university life and the direct ties to Scotland's Edinburgh are said to make it a great choice for the beer-minded traveler. Queenstown lies closer to the more rugged terrain of the south, and is nestled between jagged peaks and crystal clear water. It has more of a touristy feel than perhaps any other South Island location, but like the ski towns of Colorado, represents a hub for adventurers. Jet boating, hang gliding, paragliding, river sledging and of course bungee jumping are all within minutes of the town, individually for a premium price or packaged into combo outings. Fortunately for beer enthusiasts, each town has a thriving pub culture, breweries and a growing interest in locally brewed beer.



Church Square in Downtown Christchurch

DUX DE LUX

This brewery-restaurant "chain" has but two locations, Christchurch and Queenstown, but is not to be missed for anyone looking for a great pint on the South Island. Christchurch brewer Paul Rutledge, who emigrated from the Pacific Northwest (where he brewed at Portland Brewing Company), now brews as often



Dux De Lux in Queenstown



Space is at a premium at the Dux De Lux brewhouse in Christchurch

as he can on a 10-barrel system to keep up with growing demand.

Packing a ridiculous number of wood-clad steel tanks into a room the size of a Greyhound bus (which was then squeezed down even further to make more room for customers), the brewpub has even gone to high gravity brewing its beer in order to save space. Lagers are brewed offsite, then lagered undiluted in a walk-in cold room in extended Grundy tanks. Ales are fermented and conditioned onsite at high gravity, then diluted at filtration, which is done with a little diatomaceous filter. Rutledge imports H. Baird Maris Otter for his base malt, but also uses Weyermann Munich and an Australian malt. "We could use less expensive malt, but to make great beer you need the best ingredients," he said. This philosophy also stands true for the hops Rutledge uses, which include familiar favorites imported from the United States like Willamette and Centennial, but also locally grown varieties like Green Bullet and Pacific Gem.

My favorite in the Dux De Lux beer lineup was Nor'Wester Ale (6.5-percent alcohol by volume), listed as "a strong pale ale." Rich, with a hearty bitterness, this pale had a reddish chestnut color, plenty

of crystal malt, a hint of roasty character and distinctively earthy New Zealand hops. It deservedly won a gold medal at the Australian International Beer Awards in 2004.

Dux Lager (4 percent) is described as a classic Pilsener, though the hops were not as evident as in many continental Pilseners. Clean, light and malty, it seemed more akin to a Classic American Pilsener, and would go great with lighter seafood dishes like whitebait fritters. (These are a seasonal delicacy, and are a bit like savory pancakes with guppy-sized, mild tasting fish in them. Really quite delicious!)

Hereford Bitter (4 percent) is a classic mahogany-colored session ale with a firm bitterness, but like most of the smaller Dux De Lux beers, hop aromatics take a back seat to malt—dilution from high-gravity conditioning may be the reason, but that is purely speculation. Hereford is served very cold, but once it warms up, it is a robust, flavorful Best Bitter.

Alpine Ale (4 percent) is a seasonal red ale, with just enough hop bitterness to counter the caramel malt sweetness and leave a dry finish. Another great session beer, it is light enough to be quenching.

The brewery's stout is called Black Shag Stout (5.5 percent), and before you get the wrong idea about the name, there is an aquatic bird native to New Zealand called a shag that is from the cormorant family. This ale has a reddish-black hue with a rich, tan head and a fruity, malty aroma. It tastes of bittersweet chocolate, but finishes with a sharply dry bitterness from a

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ON THE WEB

Dux De Lux

14-16 Church Street, Queenstown;
Hereford & Montreal St., Christchurch
www.thedux.co.nz/

The Twisted Hop

6 Poplar St., Christchurch
www.thetwistedhop.co.nz/



THE SWILL

Beer has long been popular in New Zealand, but getting it at a pub wasn't always easy. While many Americans grumble about the so-called Blue Laws in some states, which prevent the sale of full-strength beer, wine and liquor on Sundays or at certain times of the day, up until just a few decades ago New Zealand beer enthusiasts suffered far harsher restrictions. Many towns on the South Island were boomtowns after the gold rush of the 1860s, and with them came beer pubs. But these were not the respectable establishments of today, by any stretch—in fact, drinking hours before 1967 ended at 6 p.m. to prevent rampant drunkenness, and that's how the Kiwis liked it. Men would finish the day's work at 5:00, then trot off to the public bar (women weren't allowed in, but were allowed to drink at home) and get as plastered as possible in 60 minutes or less. "The Swill," as it was known, was then extended to 10 p.m. in 1967, and has since gone to a far more lucrative 24-7 schedule.

rather aggressive early hop dose, plus a little roast malt astringency. It's a fine choice with the restaurant's spicy calamari or garlicky fish and chips.

Finally, two ginger beers are on tap at Dux De Lux: one with alcohol (4 percent), and one without. Ginger Tom is brewed with two doses of fresh ginger, once in the kettle and then again with honey at filtration/dilution. This golden ale has a refreshing ginger sharpness in both aroma and flavor, but there's little else to balance it, be it hops, honey or malt. It's a great beer for non-beer drinkers, and very refreshing in its own way. These same beers are on tap at both Christchurch and Queenstown locations, so if you miss one, you can still sample the full repertoire at the other.

THE TWISTED HOP

Stephen Hardman had a wild and crazy idea: bring authentic, hand-pulled real ale from his native London to New Zealand. He and partner Martin Bennett opened the doors to this sparkling clean establishment in late 2004 after relocating from England a year earlier and finding themselves somewhat disappointed at the lack of real ale pubs in the area.

This little brewpub (they call it a micro-brewery there, but it's basically a brewery-

restaurant) is tucked away on a nondescript side street in Christchurch, but it's well worth seeking out. With the English heritage in Christchurch, we expected all pub barmen to at least know what we were talking about when we asked about hand-pulled cask ales. At most places, however, we just got a stare or a good laugh. But Twisted Hop had four beer engines. Each ale was served from the same firkin used to condition the beer. Each was brewed in the tidy, glassed-off 5-barrel system in the back, and all were at perfect English serving temperature.

In fact, everything seemed to carry the Campaign for Real Ale stamp of approval. Hardman uses whole Golding and Fuggle flowers to dry hop. U.K. Challenger and Styrian Goldings are used in the kettle. Things like spiles, bungs and engine parts are also imported from the United Kingdom, so it is sometimes challenging keeping the proper inventory of cellaring equipment on hand. You won't find any DE filters here, either—gelatin is used to fine the ales to relative brightness, although Hardman is considering moving away from even that, out of respect for vegetarian patrons.

Beer Collections

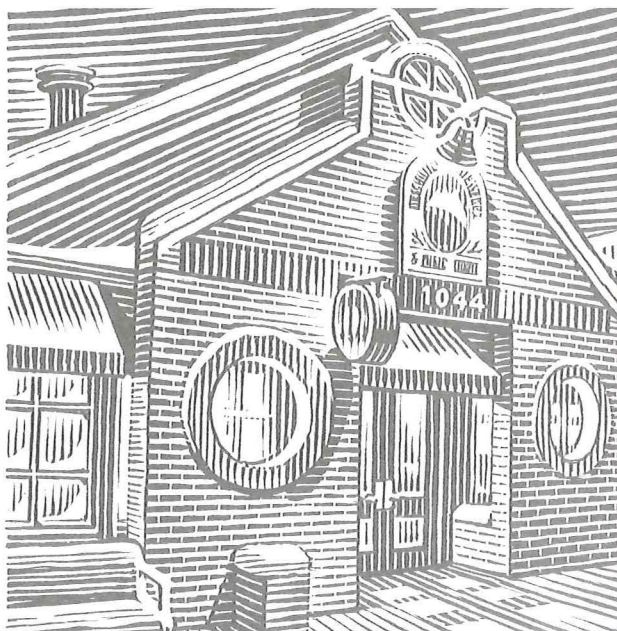
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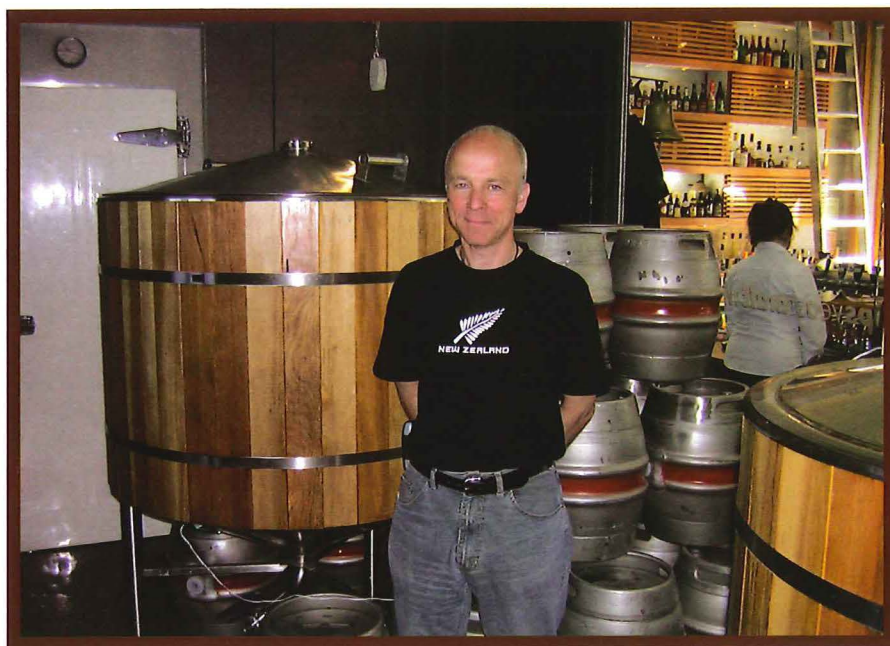
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Stephen Hardman in his brewhouse at the Twisted Hop, Christchurch

Ales are racked into firkins when just enough gravity is left to prime the beer, and they are then left to condition for one to four weeks. Temperature is often an issue as it can get pretty chilly in the brewhouse during the winter. Hardman uses a water jacketed fermenter to keep things cool enough, or more often warm enough, for the Wyeast Whitbread yeast strain he uses. But Hardman's brewing skills speak for themselves in his cask ales.

Twisted Hop's lightest ale, at 3.7 percent by volume, is Golding Bitter. Described as "a light and aromatic session beer," it packs a delicious hop punch. The delicate Golding aroma is sweet and hay-like, and follows through with a bright, fresh flavor and bitterness. The finish was tangy and dry. This was a perfectly balanced beer, golden-straw colored, with a slight sediment from the cask and a touch of haze from the dry hops.

The reddish-amber Challenger Bitter (4.5 percent) is "a well-hopped medium strength beer." Not as aromatic as the Golding Bitter, this one had a slight licorice flavor accompanied by light biscuity malt. A berry-like fruit aroma and flavor was also evident. The finish was also not as hoppy as the Golding, but favored more of a malt accent.

Twisted Ankle (5.9 percent), a "dark old ale with a hint of licorice," had a very pleasant and unusual aroma: bread, molasses and butter, like the smell of a bread yeast starter. Molasses continued in the flavor, along with the salty pungency of black licorice, and finished with toffee and burnt sugar. The strong molasses notes were not surprising, I found out later, as the beer was primed with molasses. It was not as approachable as the first two, but it grew on me.

Timpany's Old Brown is the strongest offering at 6.5 percent by volume. This "strong, malty brown ale" had a big caramel malt aroma and a rich beige head of foam that lingered down the sides of the properly sized imperial pint glass. It had a full, caramel malt flavor that was just barely reigned in by a non-descript bitterness. The long, sweet finish also favored malt. Again, a brewing sugar was used to prime—this time, brown sugar.

The well-stocked bar at Twisted Hop also included some of the finest bottled beers from around New Zealand. Emerson's Pilsener, (5 percent) from Dunedin was served in a fluted Pils glass and really gave the drinker a proper tour of New Zealand hops. Aggressive in both aroma and flavor, Green Bullet lends its pine-and-earth distinctiveness to the lager. Emerson's also

makes an American Pale Ale (6 percent) from which leap the aromas of Centennial, Cascade and perhaps Chinook hops. From the small coastal town of Amberley comes Dark Side Stout, a creamy, chocolatey dark beer reminiscent of espresso with Irish cream liqueur. This is one of Brew Moon microbrewery's finest ales, brewed on a 5-barrel system, and bottled unfiltered and unpasteurized as God intended.

OTHER NEW ZEALAND BEERS

Alas, the average traveler will probably end up drinking beers that aren't hand-crafted from small, local breweries. To that end, we also decided to explore the Canterbury Brewery in Christchurch, a regional that churns out four 30,000-liter (251-barrel) batches a day, cans and bottles on a warehouse-sized packaging line, and manages to find the time to produce a wide variety of malt extracts for homebrewers and the food industry.

Canterbury Draught (4 percent), a smooth, malty copper-colored beer, is its principal product, but it also contract brews Mac's, Speight's, Steinlager and Guinness. These are the beers you'll find in most bars, along with the Monteith's line brewed by the rival Dominion Breweries group, and while many are of passing interest only, others are quite good.

Speight's (4 percent), one of the most popular beers on both islands of New Zealand, is billed as "The Pride of the South." Similar in color and flavor to Canterbury Draught, Speight's is a bit drier and perhaps lighter, and is brewed with chocolate, caramel and crystal malts.

Mac's comes in several varieties, but Mac's Reserve and Mac's Gold stand out as two of the best, especially if you can find them on tap. Mac's Reserve (5 percent), a well-hopped golden lager originally brewed in Nelson, makes good use of its city of origin's hop harvest. Nelson's climate is well suited for hop growing, and the surrounding area has more than 20 hop farms. Southern Cross and Nelson Sauvín hops lend a uniquely Kiwi signature (a kiwi is a nocturnal, flightless bird, but it's also what New Zealanders call themselves) to both aroma and flavor of this robust brew.



KIWI TERMINOLOGY

"No dramas"—Don't worry about it.

"Flash"—fancy, top-quality.

"Handle"—mug or pint of beer. "Handle of Mac's Gold, please."

"Jug"—pitcher of beer.

"Tim-Tam Slam"—This is not an alcoholic concoction (unless you are the creative type), but rather a quirky Kiwi way of using a popular chocolate-coated cookie (or "biscuit") called a Tim-Tam as a drinking straw. You chew opposing corners off the cookie, then, dipping one end into a piping hot beverage, draw the liquid through. The cookie's chocolate center will melt into a gooey mess, shortly followed by the rest of it, necessitating a deft flick of the finger to pop the whole thing into your mouth before it flops into your coffee (or tea or cocoa) cup. Great fun on a camping trip.

Terminology to Avoid

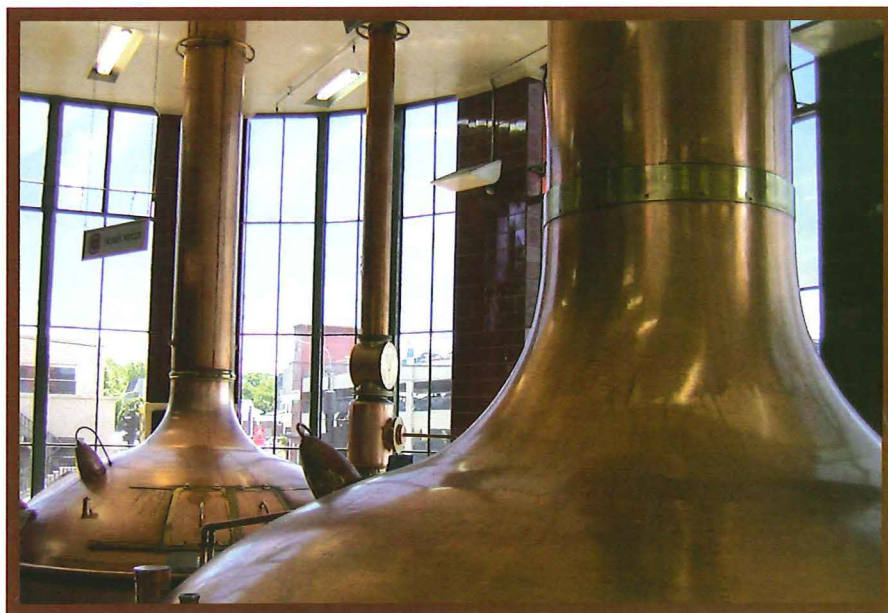
"Fanny"—Light, innocuous anatomical reference in the U.S., highly offensive anatomical reference (and not to one's behind) in New Zealand.

Mac's Gold (5 percent) is by contrast very pale, clean and light of color and body, but with the class and polish of a Pilsener. It is not a hoppy beer by any means, but balanced and refreshing.

Monteith's, like the Mac's lineup, has several bottled offerings, but the Original Ale (4 percent), while not "richly hopped," as the label boldly states, is still a sturdy, robust, amber-hued English pale ale.

For premium lager enthusiasts, Steinlager (5 percent) is perhaps the best-known New Zealand beer in North America, but unfortunately suffers a somewhat unflattering reputation as an import because of persistent problems with light damage. Not so in its native country—this well-hopped (with Nelson-grown Green Bullet hops) Pilsener style is worth seeking out because of its unusual pinecone bitterness and aroma, and is particularly good from the tap.

While not a New Zealand beer, Cascade Premium Lager (5.2 percent) is also worth checking out. From Australia's oldest brewery, established in 1824, Cascade is brewed on the island of Tasmania, and is the sort of premium widely known Foster's can only aspire to be.



Canterbury Brewhouse

NEW ZEALAND CUISINE

There are plenty of fancy restaurants in the larger South Island cities, but if you are on a budget or want to save your New Zealand dollars for beer, you still have plenty of choices without having to resort to fast food. Both of the aforementioned brewpubs are a worthy destination for those seeking a freshly prepared, stylish meal at a reasonable price. The kitchens at either Dux De Lux location serve a huge variety of vegetarian and meat dishes, and some very good seafood. The gleaming steel-clad kitchen at The Twisted Hop



External jacketed fermenters at Canterbury Brewhouse

takes traditional English pub fare to stylish new levels, and while their menu is a bit more limited, quality and presentation are top-notch for a brewpub.

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In Christchurch, you may also want to visit The Bog, an Irish pub with ubiquitous mass-produced beers on tap, but a fine selection of top-shelf Irish whiskeys (be sure to specify neat! They will put ice

in your Jameson 15 Year Pot Still!) and excellent food. The bangers and mash are to die for, and will keep you tramping (hiking) for a solid day.

Thanks to New Zealand's brewery pioneers, you'll have a fine handle of beer to enjoy along the way.

Twisted Hop's Golding Bitter

Ingredients

for 5.5 U.S. gallons (20.8 liters)

8.5 lb	(3.8 kg) Hugh Baird pale two-row malt
8.0 oz	(227 g) torrified wheat
4.0 oz	(113 g) 40L crystal malt
1.5 oz	(42.5 g) Golding whole hops, 5.2% alpha acid (60 min)
0.25 oz	(7 g) Golding whole hops, 5.2% alpha acid (15 min)
0.25 oz	(7 g) Golding whole hops, 5.2% alpha acid (1 min)
1.5 oz	(42.5 g) Golding whole hops, 5.2% alpha acid dry, in cask or conditioning
	Wyeast Whitbread Ale Yeast

Original Gravity: 1.042

IBUs: 30

Directions

If you use distilled water or have very soft water, you may wish to Burtonize it. Mash grains at 150° F (65.5° C) for 60 minutes, then bring up to a sparge temperature of 172° F (77.7° C). For carbonation, either add 0.75 cup light dry malt extract to the cask or keg to prime and keep in a warm place (65 to 72° F, 18 to 22° C) for one to three weeks, or abandon the real ale inclinations and force carbonate...it will still taste great. Dry hops should stay in contact with the finished beer for at least three days—a week is better.



Not everyone appreciates a good slam

Other fare to keep an eye out for in New Zealand is lamb (there are 10 sheep to every one person on the South Island, so good lamb and wool are easy to come by); seafood, especially the local green lip mussels and cockles, fish and chips, whitebait and crayfish (spiny lobster); and kumara, a local variety of yam that is often baked or cut into French fries. Manuka honey comes from a local shrub of the same name, which has a pungent aroma and medicinal properties. Finally, there are some high-quality chocolates to be had, from Whittaker's and the local Cadbury bars to fancier brands like Hamilton, Bennett's and de Spa.

JUST GO

Wherever you come from, and whatever beer you drink, a visit to New Zealand will not be a disappointment. Getting there is a long and expensive endeavor, but this provides a better excuse to stay longer—and it is well worth it. Words, photos, even multi-million-dollar movie trilogies cannot describe how pristinely beautiful this country is. For outdoor types, booking a sight-seeing tour to some of the less-traveled areas with a company like www.active-newzealand.com will bring you face to face with some of the most breathtaking scenery on the planet. And thanks to New Zealand's brewery pioneers, you'll have a fine handle of beer to enjoy along the way.

Amahl Turczyn-Scheppach is a former *Zymurgy* associate editor who lives and brews in Lafayette, Colo.



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Craft Beer Rolls a

2004 Industry Overview

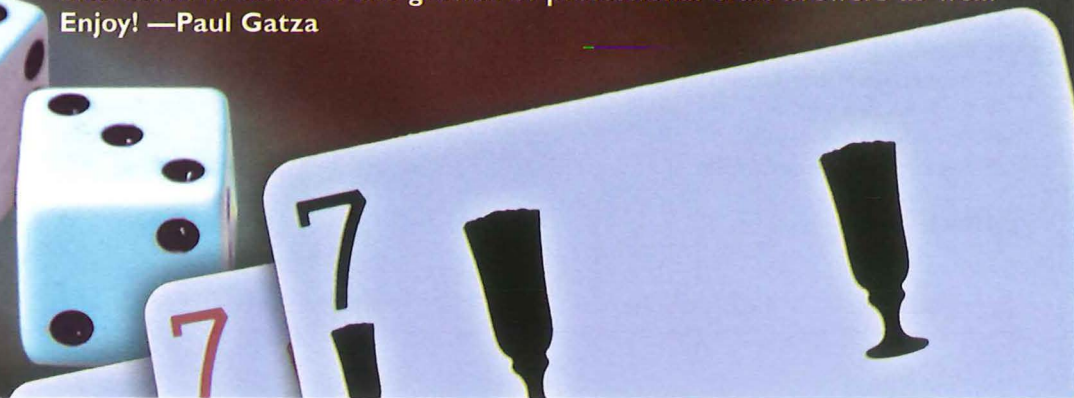


America's professional craft brewers had a stellar year in 2004, posting over 7-percent sales growth. Craft brewers proved to be the brightest light of the alcohol beverages industry, besting the 4-percent growth rate of wine, 3 percent for liquor, 1 percent for imports and 0.5 percent for domestic beer overall. The bottom line in 2004 was 0.8 percent more beer consumed in the United States. Craft beer continues to grow in popularity due to outstanding quality, a range of interesting flavors and the great diversity of beer styles.

Craft beer production in the United States has grown every year for 35 straight years—dating to the early days when Fritz Maytag rejuvenated the Anchor Brewing Company in San Francisco.

In 1978 there were 42 breweries in America. In 2004, 1,430 breweries (1,396 of which are craft breweries) produced beer in the United States. This is a revolution! I'll drink to that!

What follows is a snapshot of the regional specialty brewing companies, regional specialty brewers, the largest of the microbreweries and brew-pubs. I'm a numbers guy and a beer guy, and I thought that you might be interested in some of the growth of professional craft brewers as well. Enjoy! —Paul Gatza



2004 Top 50 Domestic Specialty Brewing Companies

Compiled by the Brewers Association from data provided primarily by brewers. For each company listed, a) all-malt beer [or wheat beer] sales account for the majority of its beer sold; and b) it operated independently for at least one year. The list includes different types of top selling craft brewers: regional specialty breweries, contract brewing companies and brewpub groups. In addition, it portrays the total volume of beer sold by those that combine a micro- or regional brewery and one or multiple brewpubs, and/or hire a brewery to contract brew for them. Figures in parentheses indicate number of breweries/brewpubs operating during 2004, if more than one. Anderson Valley, Leinenkugel's and Stevens Point requested its information not be published.

Shipments also refers to taxable removals at brewpubs.

* Denotes all or partially contract brewed during 2004.

Company	2004 shipments	% change in 2004	share of segment	change in share
1. Boston Beer Co. (2)*	1,267,000	2	18.93	-0.84
2. Sierra Nevada Brewing Co	589,937	3	8.81	-0.37
3. New Belgium Brewing Co.	331,000	16	4.95	0.39
4. F.X. Matt Brewing Co.	233,200	2	3.48	-0.17
5. Redhook Ale Brewery (2)	216,400	-5	3.23	-0.42
6. Widmer Brothers Brewing Co. (2)*	199,000	26	2.97	0.45
7. Pyramid Breweries (5)	142,533	24	2.13	0.29
8. Deschutes Brewery (2)	133,913	13	2	0.1
9. Alaskan Brewing and Bottling Co.	90,400	4	1.35	-0.04
10. Boulevard Brewing Co.	89,083	19	1.33	0.13
11. Harpoon Brewery (2)	86,681	11	1.3	0.05
12. Anchor Brewing Co.	83,599	-1	1.25	-0.1
13. Full Sail Brewing Co. (2)	79,226	5	1.18	-0.02
14. August Schell Brewing Co.	64,405	6	0.96	-0.01
15. Gordon Biersch Brewing Co.	61,431	8	0.92	0.01
16. Mendocino Brewing Co.*	61,000	2	0.91	-0.05
17. Summit Brewing Co.	59,782	7	0.89	0
18. Shipyard Brewing Co.	50,508	12	0.75	0.03
19. Goose Island Beer Co. (3)	50,428	-5	0.75	-0.1
20. Kalamazoo Brewing Co. (2)	47,479	23	0.71	0.09
21. Magic Hat Brewing Co.	47,111	23	0.7	0.09
22. Long Trail Brewing Co.	47,105	15	0.7	0.05
23. Portland Brewing Co. (includes Pyramid bbls)	45,867	-1	0.69	-0.05
24. Abita Brewing Co.	45,050	9	0.67	0.01
25. Brooklyn Brewery*	44,800	7	0.67	0
26. BridgePort Brewing Co.	42,516	6	0.64	-0.01
27. Rock Bottom Restaurants (33)	42,349	-4	0.63	-0.07
28. Pete's Brewing Co.*	40,000	-41	0.6	-0.49
29. Rogue Ales (3)	38,924	36	0.58	0.12
30. Firestone Walker Brewing Co.	38,350	15	0.57	0.04
31. Stone Brewing Co.	31,974	31	0.48	0.09
32. Kona Brewery LLC	31,192	92	0.47	0.21
33. Flying Dog Brewery	30,048	18	0.45	0.04
34. Otter Creek Brewing Co.	28,640	12	0.43	0.02
35. Great Lakes Brewing Co./Ohio (2)	27,593	11	0.41	0.01
36. Mac and Jack's Brewery Inc	27,524	10	0.41	0.01
37. Old Dominion Brewing Co.	26,827	10	0.4	0.01
38. Lagunitas Brewing Co.	26,420	5	0.39	-0.01
39. Odell Brewing Co.	25,909	0	0.39	-0.03
40. Breckenridge Brewery	25,600	3	0.38	-0.02
41. Big Sky Brewing Co.	25,375	12	0.38	0.02
42. New Glarus Brewing Co.	24,800	33	0.37	0.07
43. RAM/Big Horn Breweries (21)	21,763	1	0.33	-0.02
44. Gordon Biersch Brewery Restaurants (26)	21,216	1	0.32	-0.02
45. Utah Brewers Cooperative	21,000	5	0.31	-0.01
46. McMenamin's Breweries (22)	20,711	5	0.31	-0.01
47. Dogfish Head Craft Brewery (2)	20,200	49	0.3	0.08
48. Frederick Brewing Co.	20,000	11	0.37	0.01
49. Pennsylvania Brewing Co.	18,000	0	0.27	-0.02
49. Sweetwater Brewing Co. (GA)	18,000	27	0.27	0.04
TOTALS	4,861,869	+6	72.64	-0.47

2004 Regional Brewing Companies (by number of barrels produced)

All figures are in U.S. barrels. Anderson Valley, Lost Coast Brewery & Café, Stevens Point and Pittsburgh Brewing requested their information not be published.

¹= Estimate, ²= See this or other charts for other company operations, ³= Not considered a craft brewer.

Company	State	2000	2001	2002	2003	Annual Percent Change				
						2004	2001	2002	2003	2004
City Brewing Co. ³	WI		925,550	1,160,000	1,403,000	1,606,000			21	14
Diageo (FMBs) ^{1,3}	PA				1,400,000	1,400,000				0
High Falls Brewing Co. ³	NY		900,000	750,000	1,000,000	1,300,000		-17	33	30
Latrobe Brewing Co. ^{1,3}	PA	1,104,000	1,023,000	1,044,483	1,100,000	1,000,000	-7	2	5	-9
D. G. Yuengling and Son Inc. ^{1,2,3}	PA	406,842	1,025,000	1,189,000	830,000	880,000	152	16	-30	6
Samuel Adams Brewery ^{1,2}	OH			600,000	600,000	600,000			0	0
Sierra Nevada Brewing Co.	CA	498,986	541,386	566,108	574,206	589,937	8	5	1	3
D. G. Yuengling & Son Inc. ^{1,2,3}	FL			12,000	500,000	500,000			4,067	0
New Belgium Brewing Co.	CO	165,000	230,000	255,300	285,000	331,000	39	11	12	16
Spoetzi Brewery ^{1,3}	TX	261,000	272,000	260,000	285,000	300,000	4	-4	10	5
F.X. Matt Brewing Co.	NY	276,000	261,000	239,000	228,700	233,200	-5	-8	-4	2
Lion Brewery Inc., The ^{1,3}	PA		200,000	200,000	210,000	210,000			0	5
Widmer Brothers Brewing Co.	OR	127,080	127,222	151,305	158,000	181,000	0	19	4	15
Redhook Ale Brewery ^{1,2}	WA	212,600	158,100	156,900	158,800	151,400	-26	-1	1	-5
Deschutes Brewery ^{1,2}	OR	95,000	102,655	112,992	117,856	133,913	8	10	4	14
Alaskan Brewing and Bottling Co.	AK	81,800	82,200	76,100	86,900	90,400	0	-7	14	4
Boulevard Brewing Co.	MO	46,060	54,802	63,616	74,854	89,083	19	16	18	19
Anchor Brewing Co.	CA	93,314	85,873	82,217	84,641	83,599	-8	-4	3	-1
Pyramid Alehouse, Brewery at Berkeley ^{1,2}	CA			72,425	75,480	80,000			4	6
Full Sail Brewing Co. ²	OR	66,515	60,816	57,611	75,238	78,980	-9	-5	31	5
Harpoon Brewery ^{1,2}	MA	63,400	62,400	65,178	67,820	76,681	-2	4	4	13
Gluek Brewing Co. ³	MIN	35,000	50,000	58,000	59,000	65,000	43	16	2	10
Redhook Ale Brewery/Cataqua Public House ^{1,2}	NH		65,000	69,000	70,000	65,000		6	1	-7
August Schell Brewing Co.	MIN	31,500	19,200	27,654	60,744	64,405	-39	44	120	6
Gordon Biersch Brewing Co.	CA	60,237	63,406	58,671	56,745	61,431	5	-7	-3	8
Carolina Beer and Beverage Co. ³	NC	7,900	9,800	26,500	65,000	61,000	24	170	145	-6
Summit Brewing Co.	MIN	42,904	46,206	49,469	55,936	59,782	8	7	13	7
Shipyard Brewing Co.	ME	30,984	34,018	39,278	45,255	50,508	10	15	15	12
Goose Island Beer Co./Fulton St ²	IL	41,270	44,712	59,734	50,341	47,428	8	34	-16	-6
Magic Hat Brewing Co.	VT	26,200	31,600	38,500	38,400	47,111	21	22	0	23
Long Trail Brewing Co.	VT	35,000	40,000	40,000	41,000	47,105	14	0	3	15
Portland Brewing Co.	OR	63,000	60,000	56,400	46,302	45,867	-5	-6	-18	-1
Kalamazoo Brewing Co. ² -Galesburg	MI				34,000	45,105				33
Abita Brewing Co.	LA	34,800	35,500	39,400	41,330	45,050	2	11	5	9
BridgePort Brewing Co.	OR	30,723	38,645	36,691	40,128	42,516	26	-5	9	6
Pyramid Alehouse, Brewery at Seattle ^{1,2}	WA			32,447	40,751	42,000			26	3
Rogue Ales Brewery & Headquarters ²	OR	25,000	27,458	25,991	28,563	38,924	10	-5	10	36
Mendocino Brewing Co. ^{1,2}	CA	49,255	58,683	47,800	46,400	38,500	19	-19	-3	-17
Firestone Walker Brewing Co.	CA		18,000	28,000	33,350	38,350		56	19	15
Straub Brewery ³	PA	36,041	36,455	38,500	35,900	33,437	1	6	-7	-7
Stone Brewing Co.	CA	9,342	12,779	18,450	24,485	31,974	37	44	33	31
Joseph Huber Brewing Co. ³	WI	60,000	60,000	40,000	30,105	31,461	0	-33	-25	5
Kona Brewery LLC	HI	4,312	5,296	17,173	16,217	31,192	23	224	-6	92
Flying Dog Brewery	CO	16,000	19,600	21,885	25,561	30,048	23	12	17	18
Otter Creek Brewing Co.	VT	24,490	25,137	22,000	25,500	28,640	3	-12	16	12
Great Lakes Brewing Co./Ohio ^{1,2}	OH	17,874	18,442	21,734	23,964	26,594	3	18	10	11
Mac and Jack's Brewery Inc	WA	20,047	22,312	23,903	25,110	27,524	11	7	5	10
Old Dominion Brewing Co.	VA	26,640	25,952	25,350	24,306	26,827	-3	-2	-4	10
Lagunitas Brewing Co.	CA	17,099	19,410	23,960	25,159	26,420	14	23	5	5
Odell Brewing Co.	CO	20,593	23,619	26,546	26,018	25,909	15	12	-2	0
Breckenridge Brewery	CO	25,499	27,442	26,240	24,900	25,600	8	-4	-5	3
Big Sky Brewing Co.	MT				22,600	25,375				12
New Glarus Brewing Co.	WI	9,406	10,478	13,700	18,700	24,800	11	31	36	33
Utah Brewers Cooperative/Wasatch Brewpub ¹	UT	18,121	19,480	22,000	20,000	21,000	7	13	-9	5
Dogfish Head Craft Brewery ²	DE	5,300	4,658	6,947	13,600	20,200	-12	49	96	49
Dixie Brewing Co. Inc. ^{1,3}	LA	25,000	25,000	25,000	25,000	20,000	0	0	0	-20
Frederick Brewing Co. ¹	MD	22,700	28,381	31,441	22,581	20,000	25	11	-28	-11
Olde Saratoga/Kingfisher Brewing Co. ²	NY			11,200	13,600	18,000			21	32
Pennsylvania Brewing Co.	PA	16,500	18,000	18,000	18,000	18,000	9	0	0	0
Sweetwater Brewing Co. (GA)	GA	7,500	10,000	11,500	14,200	18,000	33	15	23	27
Boulder Beer Co. (formerly Rockies Brewing Co.)	CO	17,852	16,004	15,297	16,179	17,793	-10	-4	6	10
Victory Brewing Co.	PA	8,000	8,000	11,600	15,325	17,750	0	45	32	16
North Coast Brewing Co. Inc.	CA	14,825	14,650	16,030	18,095	17,553	-1	9	13	-3
D.L. Geary Brewing Co. Inc. ¹	ME	16,200	16,300	16,300	16,300	16,300	1	0	0	0
Uinta Brewing Co.	UT	13,749	13,780	13,959	14,224	15,021	0	1	2	6

2004 Top 50 Microbreweries (by number of barrels produced)

Does not include regional brewers. All figures are in U.S. barrels. Totals, in many cases, are estimates reported to the Brewers Association and may not reflect exact tax-paid amount ¹= Estimate, ²= See other charts for other company operations.

Company	State	2000	2001	2002	2003	2004	Annual Percent Change			
							2001	2002	2003	2004
Clipper City Brewing Co.	MD	9,000	7,500	13,500	12,500	13,200	-17	80	-7	6
Saint Louis Brewery, Inc./Schlafly Bottleworks ²	MO				6,240	13,172				111
Capital Brewery Co. Inc. ²	WI	13,367	12,000	16,000	15,488	12,007	-10	33	-3	-22
Karl Strauss Breweries ^{1,2}	CA		14,000	6,000	5,500	11,850		-57	-8	115
Wachusett Brewing Co.	MA	6,250	7,395	8,355	9,356	10,848	18	13	12	16
Yakima Brewing ²	WA	7,000	4,500	3,000	5,625	10,766	-36	-33	88	91
Berkshire Brewing Co. Inc.	MA	5,950	7,300	8,483	9,872	10,661	23	16	16	8
Smuttnose Brewing Co.	NH	6,350	6,400	7,300	8,160	10,654	1	14	12	31
Sprecher Brewing Co.	WI	15,100	13,005	DNP	12,206	10,442	-14			-14
Brooklyn Brewery ²	NY	6,000	7,763	10,000	10,000	10,000	29	29	0	0
Harpoon Brewery - Vermont ^{1,2}	VT		6,000	8,000	10,000	10,000		33	25	0
Stoudt's Brewing Co. (includes contract thru 2003) ²	PA	12,500	8,996	8,399	7,335	10,000	-28	-7	-13	36
Four Peaks Brewing Co.	AZ	2,606	3,707	5,200	6,720	9,586	42	40	29	43
Flying Fish Brewing Co.	NJ	6,125	7,200	7,940	8,460	9,250	18	10	7	9
Saint Arnold Brewing Co.	TX	4,952	6,101	6,152	7,208	9,120	23	1	17	27
Indian River Beverage Corp.	FL		850	1,024	4,000	9,000		20	291	125
Left Hand/Tabernash Brewing Co.	CO	8,239	8,736	8,448	8,718	8,984	6	-3	3	3
Bayern Brewing Inc.	MT			7,225	7,900	8,254			9	4
Hale's Ales Brewery and Pub	WA	13,220	11,440	10,666	8,344	8,168	-13	-7	-22	-2
Mercury Brewing Co.	MA	3,800	4,500	5,200	4,000	8,000	18	16	-23	100
Pike Brewing Co. ¹	WA		2,000	5,000	7,000	8,000		150	40	14
Fish Brewing Co.	WA	6,100	6,750	8,000	7,140	7,440	11	19	-11	4
Buzzards Bay Brewing Co.	MA	4,300	5,100	5,100	5,100	7,000	19	0	0	37
Coast Range Brewing Co.	CA	3,700	3,700	7,000	7,000	7,000	0	89	0	0
Mad River Brewing Co.	CA		8,241	7,500	7,400	7,000		-9	-1	-5
Troegs Brewing Co.	PA	2,943	3,485	3,609	5,503	6,860	18	4	52	25
Bear Republic Brewing Co. ¹	CA	4,800	5,200	5,200	5,850	6,800	8	0	13	16
Fordham Brewing Co.	DE	1,418	3,830	5,890	5,910	6,500	170	54	0	10
Lake Placid Craft Brewing Co.	NY		455	1,190	2,268	6,500		162	91	187
Avery Brewing Co.	CO	2,400	2,775	3,606	4,984	6,408	16	30	38	29
Casco Bay Brewing Co.	ME	4,329	4,700	6,012	5,600	6,300	9	28	-7	13
Southend Brewery and Smokehouse - Charlotte ¹	NC	1,000	950	5,700	6,000	6,300	-5	500	5	5
Highland Brewing Co.	NC	4,200	4,800	5,200	5,500	6,290	14	8	6	14
Bayhawk Ales Inc.	CA	1,195	3,772	2,999	6,361	6,206	216	-20	112	-2
Lakefront Brewery Inc	WI	3,669	4,437	4,850	5,450	6,132	21	9	12	13
Red Oak Brewing Co.	NC	4,900	5,700	5,700	5,500	6,100	16	0	-4	11
TommyKnocker Brewery	CO	6,800	6,421	6,908	6,234	6,086	-6	8	-10	-2
Great Divide Brewing Co.	CO	5,454	5,505	5,520	5,100	6,002	1	0	-8	18
Bristol Brewing Co.	CO	5,200	5,500	5,800	5,950	5,900	6	5	3	-1
Ballast Point Brewing Co. ¹	CA	2,200	3,060	3,981	5,492	5,600	39	30	38	2
Brewery Ommegang	NY	3,675	3,875	4,101	3,921	5,378	5	6	-4	37
Nimbus Brewing Co.	AZ	1,900	3,000	3,622	4,007	5,150	58	21	11	29
Speakeasy Ales and Lagers	CA	1,600	2,500	3,350	4,875	5,100	56	34	46	5
BJ's Brewery - West Covina ²	CA	993	3,427	3,739	4,516	5,000	245	9	21	11
New Holland Brewing Co.	MI	2,500	1,500	1,843	3,650	4,955	-40	23	98	36
River Horse Brewery/Bucks County Brewing	NJ	4,200	5,000	3,900	5,200	4,920	19	-22	33	-5
Maritime Pacific Brewing Co.	WA		3,500	4,000	4,600	4,900		14	15	7
Appalachian Brewing Co.	PA	4,000	3,000	3,000	3,300	4,800	-25	0	10	45
McMenamin's Edgefield Brewery ²	OR	5,106	4,902	5,470	4,478	4,625	-4	12	-18	3
Snake River Brewing Co. ²	WY	3,826	3,787	4,243	4,281	4,598	-1	12	1	7

2004 Top 50 Brewpubs

All figures are in U.S. barrels. List is of brewery restaurants with at least 25 percent of beer sales onsite. Totals, in many cases, are estimates reported to the Brewers Association and may not reflect exact tax-paid amount. ¹= Estimate, ²= See other charts for other company operations, ³= Not considered a craft brewer

Company	State	2000	2001	2002	2003	2004	Annual Percent Change			
							2001	2002	2003	2004
Brew Brothers/Eldorado Hotel and Casino	NV	5,040	5,000	3,420	3,460	3,520	-1	-32	1	2
Sacramento Brewing Co. Oasis (#2) ¹	CA		1,600	1,600	2,700	3,400		0	69	26
Hofbrauhaus Newport	KY				2,200	3,300				50
Wynkoop Brewing Co.	CO	3,993	3,269	3,033	2,809	3,174	-18	-7	-7	13
Elysian Brewing Co.	WA				2,947	3,102				5
Boundary Bay Brewery and Bistro	WA	1,800	1,899	2,391	2,830	3,000	6	26	18	6
Silver Gulch Brewing Co.	AK	700	1,996	2,010	1,500	3,000	185	1	-25	100
Great Dane Pub and Brewing Co.	WI	2,595	2,851	3,074	3,118	2,936	10	8	1	-6
Eel River Brewing Co.	CA		4,500	4,500	2,750	2,930		0	-39	7
Gritty McDuff's - Freeport	ME	2,300	2,300	2,600	2,800	2,900	0	13	8	4
Tied House Cafe and Brewery-Mtn View	CA	3,000	2,900	2,600	2,300	2,800	-3	-10	-12	22
Marin Brewing Co.	CA	2,694	2,690	2,738	2,843	2,787	0	2	4	-2
Monte Carlo Pub and Brewery	NV	3,196	3,200	3,428	2,850	2,753	0	7	-17	-3
Moose's Tooth Brewing Co.	AK	2,096	2,195	2,480	2,625	2,740	5	13	6	4
Rock Bottom Brewery - Chicago	IL	2,600	2,174	2,134	2,440	2,650	-16	-2	14	9
Moylan's Brewery & Restaurant	CA				2,465	2,640				7
Glacier Brewhouse	AK	1,800	1,851	2,050	2,050	2,606	3	11	0	27
Oskar Blues Grill and Brewery	CO	517	540	600	1,168	2,600	4	11	95	123
Sacramento Brewing Co. ¹	CA		1,200	1,200	2,300	2,600		0	92	13
Snowshoe Brewing Co.	CA	2,700	2,700	3,200	1,000	2,600	0	19	-69	160
Keoki Brewing Co. ¹	HI	800	1,000	1,000	1,000	2,520	25	0	0	152
Free State Brewing Co.	KS	2,114	2,440	2,330	2,410	2,380	15	-5	3	-1
Rock Bottom Brewery - Denver	CO	2,624	2,411	2,366	2,391	2,341	-8	-2	1	-2
Coronado Brewing Co.	CA		500	1,320	1,452	2,250		164	10	55
LaConner Brewing Co.	WA	1,810	1,710	1,714	1,730	2,200	-6	0	1	27
Capitol City Brewing Co. - Arlington	VA	1,364	1,259	1,426	2,211	2,093	-8	13	55	-5
Cambridge Brewing Co. ¹	MA	1,680	1,825	2,000	1,850	2,000	9	10	-8	8
Goose Island Beer Co./N Clybourn Av ¹	IL			1,800	2,000	2,000			11	0
Russian River Brewing Co.	CA	1,069	1,364	1,364	DNP	1,930	28	0		
Boston Beer Works - Brookline	MA	2,689	2,200	2,027	1,825	1,896	-18	-8	-10	4
CooperSmith's Pub and Brewing	CO	1,856	2,001	1,955	1,867	1,894	8	-2	-5	1
Phantom Canyon Brewing Co.	CO	1,810	1,955	1,942	1,790	1,891	8	-1	-8	6
Dillon Dam Brewery	CO	1,937	1,900	1,946	1,762	1,877	-2	2	-9	7
Scuttlebutt Brewing Co.	WA	1,004	988	1,269	1,609	1,872	-2	28	27	16
BJ's Brewery - Laguna Hills	CA					1,859				
Big Buck Brewery and Steakhouse - Auburn Hills	MI	3,164	2,374	2,138	1,933	1,802	-25	-10	-10	-7
BarrelHouse Brewing Co.	OH	2,500	2,000	2,600	1,800	1,800	-20	30	-31	0
Kelly's Caribbean Bar and Grill ¹	FL		100	2,000	1,800	1,800		1,900	-10	0
St Stan's Brewery, Pub and Restaurant ¹	CA		4,000	4,000	2,000	1,800		0	-50	-10
Rock Bottom Brewery - Portland	OR	1,563	1,520	1,780	1,840	1,765	-3	17	3	-4
McMenamin's Concordia Brewery at Kennedy School	OR	1,573	1,635	1,704	1,705	1,743	4	4	0	2
Rock Bottom Brewery - Arlington	VA		1,664	1,731	1,688	1,722		4	-2	2
Upstream Brewing Co.	NE				1,740	1,705				-2
Ellicott Mills Brewing Co.	MD	1,200	1,400	1,000	1,600	1,700	17	-29	60	6
Rock Bottom Brewery - Homestead	PA			1,372	1,599	1,684			17	5
BJ's Brewery - Chandler	AZ		269	1,647	1,214	1,681		512	-26	38
Mash House Restaurant & Brewery	NC				1,600	1,675				5
Rock Bottom Brewery - La Jolla	CA	1,417	1,425	1,574	1,665	1,642	1	10	6	-1
Five Seasons Brewing Co.	GA		1,200	1,800	1,600	1,620		50	-11	1
McMenamin's Cornelius Pass Roadhouse	OR	1,519	1,630	1,630	1,533	1,600	7	0	-6	4



Life is Too Short Not to Drink Beer

Enjoying a mugful of my homebrewed Bobo-doida German-style Helles recently, I found myself thinking. Homebrew makes you do those kinds of things. Yep, I was relaxed too. My mine wandered as the beer embraced me and led me to consider thoughts I don't seem to have the time for during the typical workday.

Joy. I thought about that. Pleasure. I thought about that too. When was the last time there was a headline story in your newspaper or whatever you read or listen to that truly championed the concept of pleasure?

Fear, threats and all things bad are what we listen to and read about every time we turn the dial or page to anything but our own thoughts. Entertainment seems to have turned the corner and is heading down All About Fear & Misery Avenue. Wherever you turn there isn't one thing that you would care to indulge in that hasn't had an element of evil and fear bred into it. I've heard you can become overweight watching a ball game and that while watching rain you can get struck by lightning, likely directed at you as punishment for the beer you enjoyed in front of a child.

There are very few opinion makers who champion pleasure. Does anyone remember the thing of the past we used to call "the joy of living"? Instead the headlines champion the appreciation of suffering! Wow. When has a politician ever introduced a bill that guarantees a person's right to pleasure? An editorial in the newspaper? Commentary on television or radio about seeking joy with no strings attached? Not a chance.

I mean, here I am enjoying a wonderful glass of my beer. Perhaps another day a mugful of *your* great beer. And to think there are lots of people out there who



Organic Joy Pale Ale

Malt Extract Recipe

Ingredients

for 5 U.S. gallons (19 liters)

7.5 lb	(3.4 kg) Briess Maltoferm, organic malt extract syrup
0.5 lb	(225 g) Briess Organic crystal 60
0.25 oz	(7 g) New Zealand Pacific Gem hop pellets 13.5% alpha (3.4 HBU/94 MBU), 60 minute boiling
0.5 oz	(14 g) New Zealand Pacific Jade hop pellets 12.4% alpha (6.2 HBU/173 MBU), 30 minute boiling
0.75 oz	(21 g) New Zealand B Saaz hop pellets 4.5% alpha (3.4 HBU/95 MBU), 10 minute boiling
0.75 oz	(21 g) New Zealand Nelson Sauvin hop pellets 12.7% alpha (9.5 HBU/267 MBU), 10 minute boiling
0.5 oz	(14 g) New Zealand Nelson Sauvin hop pellets, 2 minute boiling
0.33 oz	(10 g) New Zealand Nelson Sauvin hop pellets, dry hopping
0.25 tsp	(1 g) powdered Irish moss
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Directions

Place crushed grains in 2 gallons (7.6 liters) of 150° F (68° C) water and let steep for 30 minutes. Strain out (and rinse with 3 quarts [3 liters] hot water) and discard the crushed grains reserving the approximately 2.5 gallons (9.5 liters) of liquid to which you will now add malt extract and 60 minute hops. Bring to a boil.

The total boil time will be 60 minutes. When 30 minutes remain add the 30-minute hops. When 10 minutes remain add the 10-minute hops and Irish moss. When two minutes remain add the two-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 to 30 minutes or the time it takes to have a couple of homebrews.

Strain out and sparge hops and direct the hot wort into a sanitized fermenter to which 2.5 gallons (9.5 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 wort is about 70° F (21° C). Ferment at about 70° F (21° 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 "cellar" the beer at about 55° F (12.5° C) for about one week.

Prime with sugar and bottle or keg when complete

can't stand the idea that someone can derive joy and pleasure from the flavor and diversity and, yes, to a certain extent the alcohol in beer. There used to be a time in America when beer would be welcomed as a joyous family guest, enjoyed responsibly with sons, daughters, parents and friends. There were no shadows of suspicion and evil cast upon every wonderful, delicious swallow.

Pleasure was not denied. I remember when cartoon characters on television advertised beer. They made me laugh. They were lovable. I didn't turn into an evil person because I watched beer cartoons. Today, there's not a chance to enjoy the evil antics of Bert and Harry. I speak of beer, but the same could be said of just about anything these days that we derive pleasure from.

The joy of doing stuff. The joy of indulging. The joy of altering your state of mind from the profound to a smile, transgressing to contemplation, appreciation, thankfulness and back to the profound. If you are not living life safely in the physical, spiritual and mental attitude of those who want your mind and money, well then it seems that you are expected to feel guilty about your own sense of pleasure.

Life is too short not to drink beer. Life is too short to deny yourself the act of seeking pleasure in that which you would responsibly indulge.

I'm finishing my mugful of brew and I think I'll have another. It brings me great joy to be able to appreciate beer. Perhaps it's because I brew my own, knowing whatever happens I have the knowledge of making the best the world has to offer. And if there are millions of people out there that can't accept the fact that I derive joy and pleasure from this, well I sure hope they derive pleasure and joy in their own crusade of fear and loathing, because living life without an internal smile isn't where I want to be.

So that's where my beer has taken me today. Where does your beer take you?

Here's a first for my column, an all-organic beer. Several years ago you'd have to grow all your own ingredients to make organic ales and lagers. But as appreciation has grown, the quality and variety of ingredients have become more accessible, even to the homebrewer. While currently there is a very limited supply of American grown organic Cascade hops, let's appreciate that virtually all hops from New Zealand are organically grown. Most of their varieties are high alpha acid bittering hops sought by the larger Southern Hemisphere breweries. But there have been some recent aroma varieties that offer spectacularly wonderful bouquets and flavors. You might not win competitions that champion classic European or American hop characters, but it doesn't matter when you're brewing for your own pleasure. I recently tried a late-hopped pale ale with New Zealand Nelson Sauvin hop. The intense fruity sauvignon-like aroma was so different I

Organic Joy Pale Ale

All-Grain Recipe

Ingredients

for 5 U.S. gallons (19 liters)

7.5 lb	(3.4 kg) Briess Organic two-row brewers malt
1.25 lb	(568 g) Briess Organic crystal 60
0.25 oz	(7 g) New Zealand Pacific Gem hop pellets 13.5% alpha (3.4 HBU/94 MBU), 60 minute boiling
0.33 oz	(10 g) New Zealand Pacific Jade hop pellets 12.4% alpha (4.1 HBU/115 MBU), 30 minute boiling
0.75 oz	(21 g) New Zealand B Saaz hop pellets 4.5% alpha (3.4 HBU/95 MBU), 10 minute boiling
0.50 oz	(14 g) New Zealand Nelson Sauvin hop pellets 12.7% alpha (6.4 HBU/177 MBU), 10 minute boiling
0.50 oz	(14 g) New Zealand Nelson Sauvin hop pellets, 2 minute boiling
0.33 oz	(10 g) New Zealand Nelson Sauvin hop pellets, dry hopping
0.25 tsp	(1 g) powdered Irish moss English or American type ale yeast
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.056 (14 B)

Approximate Final Gravity: 1.016 (4 B)

IBUs: about 42

Approximate Color: 12 SRM (24 EBC)

Alcohol: 5.3% by volume

Directions

A step infusion mash is employed to mash the grains. Add 9 quarts (8.6 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 4.5 quarts (4.3 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), laut 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 30 minutes remain add the 30-minute hops. When 10 minutes remain add the 10-minute hops and Irish moss. When two minutes remain add the two-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). Ferment at about 70° F (21° 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 "cellar" the beer at about 55° F (12.5° C) for about one week.

Prime with sugar and bottle or keg when complete.

questioned whether I was really drinking beer. I was assured that this craft brewed pale ale was indeed all malt and uniquely hopped with New Zealand's finest.

Along with the organic malt products from Briess I wouldn't hesitate to recommend that any homebrewer try their hand at organic and the pleasures of New Zealand hops.

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

Charlie Papazian is president of the Brewers Association. 

The Extraordinary Ordinary

(continued from 29)

WLP022 Essex Ale Yeast, WLP023 Burton Ale Yeast or WLP026 Premium Bitter Ale; or Wyeast 1968 London ESB Ale, 1318 London Ale III or 1099 Whitbread Ale. If you prefer using dry yeast, DCL Safale S-04 produces decent results. Ferment between 65° F (18° C) and 70° F (21° C), ideally around 67° F (19° C), for all of these yeasts.

Carbonation, Packaging and Serving

Restrained carbonation is important in these styles, as gassy beers are much more difficult to drink in quantity. Also beers with a lighter body suffer from carbonic bite much more readily than bigger beers, impacting drinkability. These styles need just enough carbonation to impart a bit of mouthfeel and to drive the aroma out of the glass and up to your nose. Too much carbonation and the beer becomes dry, harsh and acidic, while gentle carbonation can make the beer feel creamy in the mouth. Aim for 1.5 volumes of CO₂ in the finished product if you are going to bottle. This is about half of the carbonation of a typical American pale ale, so you'd use half the amount of priming sugar at bottling time. If you have the opportunity to keg, or better yet cask condition your beer, aim for slightly lower CO₂ levels, closer to 1 volume. When cask or keg conditioning, you can add a 0.5-ounce hop plug (or whole hops) to your bitter to give it some additional hop character.

The perfect serving temperature for these styles is around 50° F (10° C) to 55° F (13° C), which helps bring out the full character of the beer. If you're used to ice cold beer, this might seem a bit warm to start, but you'll quickly come to appreciate how easy these beers are to drink and how much flavor and aroma is expressed at cellar temperature.

The perfect serving temperature for these styles is around 50° F (10° C) to 55° F (13° C), which helps bring out the full character of the beer. If you're used to ice cold beer, this might seem a bit warm to start, but you'll quickly come to appreciate how easy these beers are to drink and how much flavor and aroma is expressed at cellar temperature.

Food Pairings

Not surprisingly, the best food pairings for these styles is the kind of food one finds in a pub. A wonderful pairing is a pint of bitter with a Ploughman's Lunch. This traditional lunch most often consists of a baked bread roll, pickled onions (or a Branston Pickle), a generous slice of farmhouse cheddar (or even better a slice of Double Gloucester) and a pint of bitter. Sometimes a slice of

meat such as ham makes for an even more substantial meal.

Fish and chips, bangers and mash, and shepherd's pie are also fine pairings with bitter or mild.

These beers also pair well with delicate seafood, so long as it is not too fishy. And for dessert, chocolate is a nice match for a dark mild and any of these go well with nuts, such as lightly toasted almonds, walnuts or pecans.

Jamil Zainasheff was the 2004 Homebrewer of the Year in the AHA National Homebrew Competition. He is a newly elected member of the AHA Governing Committee and a member of QUAFF (Quality Ale and Fermentation Fraternity) in San Diego. 

Summer Bitter

Ingredients

for 5 U.S. gallons (19 liters)

7.0 lb	(3.18 kg) English Pale Malt
0.50 oz	(14 g) Amarillo hops, 9% alpha acid (60 min)
0.50 oz	(14 g) Amarillo hops, 9% alpha acid (20 min)
0.50 oz	(14 g) Amarillo hops, 9% alpha acid (1 min)
0.50 oz	(14 g) Amarillo hops, 9% alpha acid (dry hop) White Labs WLP002 English Ale

Target Original Gravity: 1.037

(9.32 Plato)

Approximate Final Gravity: 1.010

(2.45 Plato)

Anticipated SRM: 4

Anticipated IBU: 33.3

Wort Boil Time: 90 minutes

Directions

Single infusion mash at 152° F (67° C) using a thick mash of 1 quart mash water to 1 pound of grain. Ferment at 67° F (19° C) until yeast drops clear. Transfer to keg or cask and add 0.25 to 0.5 oz (7 to 14 g) Amarillo hops. Carbonate to 1.5 volumes and serve at 50° to 55° F (10° to 13° C).

Extract Brewing: Replace English Pale Malt with 5 lb (2.27 kg) Maris Otter liquid malt extract.

by Amahl Turczyn-Scheppach

Drunk Monk Challenge

This issue we showcase the seventh annual Drunk Monk Challenge, held at Walter Payton's Roundhouse in Aurora, Ill. on March 12. With entries from Minnesota, Wisconsin, Iowa, Indiana, Ohio, Michigan, Missouri and Illinois, this year's Challenge was one of the most successful to date.

Competition organizers from the local club, the Urban Knaves of Grain, received 549 entries, with 466 beer entries divided into 26 flights. The 63 mead and cider entries were divided into five flights, and the special category, dubbed Menace of the Monastery, received 20 entries. This special category was reserved for "beers of Monastic descent" according to organizer Rodney Kibzey, and received a full inquisition by a special panel of judges in monks' robes.

But the overall Best of Show winner for beer ended up being a style from the good old US of A: American Amber. Joe Formanek concocted the winning brew, Old Grandma's Amber Ale, in memory of his mother-in-law.

Formanek has been a well-known name in the homebrewing competition circuit for over a decade. Armed with a microbiology degree from the University of Minnesota, Formanek's interest in brewing was inspired by beers from St. Paul's Summit Brewing Company. Big, malty beers with complex decoction mash schedules, like Scotch ales and barleywines, are favorites to brew, as are hoppy American brown ales and IPAs. He also makes cider when apples are in season.

While his knowledge of brewing science is quite sophisticated, his brew system isn't—boils are done on the stovetop, mashing in the oven and sparges in the good old Zapap

double-bucket lauter tun. He also uses a Schindling mill for grinding the grist, and a counterflow chiller for quick cooling. To facilitate his busy brew schedule, Formanek



Old Grandma's Amber Ale

All-Grain Recipe

Ingredients

for 5 U.S. gallons (19 liters)

8.0 lb	(3.63 kg) Munton's pale two-row malt
1.0 lb	(0.45 kg) Weyermann's wheat malt
0.75 lb	(0.34 kg) DMC caramel Munich malt
0.75 lb	(0.34 kg) DWC dextrine malt
0.5 lb	(0.23 kg) Cargill Special Pale two-row
0.5 lb	(0.23 kg) caramel Vienna malt
0.5 lb	(0.23 kg) DWC biscuit malt
0.5 lb	(0.23 kg) DWC aromatic malt
2 oz	(57 g) DWC Special B malt
0.5 oz	(14 g) whole Centennial hops, 10% alpha acid (60 min)
0.5 oz	(14 g) whole Centennial hops, 10% alpha acid (10 min)
1.0 oz	(28 g) whole Willamette hops, 5% alpha acid (10 min)
1.0 oz	(28 g) whole American-style homegrown hops, (10 min)
1.0 oz	(28 g) whole Centennial hops, 10% alpha acid (dry)
1.0 oz	(28 g) whole Willamette hops, 5% alpha acid (dry)
	White Labs WLP002 British Ale yeast
	Filtered Tap water + 1 tsp gypsum per 5 gal
	1.0 tsp Irish moss (rehydrated) last 15 min of boil

Boiling time: 75 minutes with hops and Irish moss additions

Original Specific Gravity: 1.068

Finishing Gravity: 1.016

Directions

Add 4 gallons (15.1 liters) 173° F (78° C) water to grain, mash in at 157° F (69° C) for 60 minutes until converted. Raise to 170° F (77° C) for 10 minutes to mash out. Sparge with 3 gallons (11.4 liters) 170° F (77° C) water.

built a brewing kitchen in the basement of his house. Less traffic in the brewery inevitably leads to better beer.

While many of his winning recipes have followed traditional Old World beer styles, Formanek is fond of experimental ingredients, like exotic spices and fruits. He owes a lot of his wilder side to Randy Mosher's recently released book, *Radical Brewing*.

The Best of Show recipe is particularly special to the Formanek family—Old Grandma passed away last December. His kids called her that, and apparently she rather liked the nickname! She was fond of this amber ale, so Formanek brewed a batch in her honor after the funeral. Formanek also mentioned that it's very similar to the amber ale recipe that won the American Ale category in the 2004 National Homebrew Competition in Las Vegas. So brew this one for your family, and raise a glass in honor of Old Grandma!

Amahl Turczyn-Scheppach lives and brews in Lafayette, Colo.



AMERICAN HOMEBREWERS ASSOCIATION KUDOS

Sanctioned Competition Program
Best of Show

September 2004

Autumn Pour, 18 entries—D.G. "Scorch"
Burnet of Juneau, AK

February 2005

Best of Brooklyn VII, 240 entries—Mike Manzi
of Astoria, NY

Peach State Brew Off, 162 entries—Ken
Rybnikar of Alpharetta, GA

Kansas City Bier Meisters 2005 Regional
Homebrew Competition, 292 entries—Susan
Ruud of Harwood, ND

Best Florida Beer Championship (Florida
State Fair), 320 entries—Carl Minion of
Clarcona, FL

FebFest 2005 Homebrew Competition, 62
entries—Rodney Kibzey of Lombard, IL

March 2005

Big Bend Brew Off, 182 entries—Bob Carbone
of Grand Cane, LA

March Mashness, 70 entries—Sean Hewitt of
Inver Grove Heights, MN

2005 Doug Kam Memorial, 21 entries—Craig
Wickham of Arleta, CA

April 2005

Slurp-N-Burp Open, 296 entries—Tom Litwin
of Sherwood, OR



CALENDAR

For complete homebrew event listings, see www.beertown.org/homebrewing/events.asp.

June 25–July 2

Orange County Fair Homemade Beer Competition Costa Mesa, CA. Sanctioned by: **AHA/BJCP**. Fee: \$5. Entry Deadline: 3/15–6/10. Awards Ceremony: 7/16. Contact: Julie MacRae. Phone: 714-708-1555. Fax: 714-708-1556. E-mail: jmacrae@ocfair.com Web: www.ocfair.com

July 1–31

American Beer Month Celebrate the Flavor & Diversity of American-Made Beer. Contact: Ray Daniels. Phone: 303-447-0816 x 125. Fax: 303-447-2825. E-mail: ray@brewersassociation.org Web: www.americanbeer-month.com/index.php

July 3–10

WAN CUP Yachiyo-shi, Chiba-ken. Sanctioned by: **AHA/BJCP**. Fee: \$10. Entry Deadline: 6/27–30. Awards Ceremony: 7/10. Contact: Koh-ichi Nittoh. Phone: 81-47-458-3861. E-mail: wancup2005@homebrew.gr.jp Web: www.wancup.org/

July 9

Indiana State Fair Brewers Cup Indianapolis, IN. Sanctioned by: **BJCP**. Fee: \$7. Entry Deadline: 6/11–25. Awards Ceremony: 7/9. Contact: Anita Johnson. Phone: 317-257-9463. E-mail: anita@greatfermentations.com Web: www.brewerscup.org

July 16–23

Commander SAAZ Interplanetary Homebrew Blastoff Melbourne, FL. Sanctioned by: **AHA/BJCP**. Fee: \$6. Entry Deadline: 6/7–7/13. Awards Ceremony: 7/23. Contact: Glenn Exline. Phone: 321-636-6925. E-mail: gexline@cfl.rr.com Web: www.saaaz.org

July 16

E.T. Barnette Homebrew Competition Fox, AK. Sanctioned by: **AHA/BJCP**. Fee: \$5. Entry Deadline: 6/27–7/13. Awards Ceremony: 7/16. Contact: Scott Stihler. Phone: 907-474-2138. E-mail: stihlerunits@mosquitonet.com Web: www.mosquitonet.com/~stihlerunits/ScottsDen/Beer/Events/Events.html

July 16

Amador County Fair Homebrew Competition Jackson, CA. Sanctioned by: **AHA/BJCP**. Fee: \$6. Contact: William F. Tarchala. Phone: 209-476-8491. Fax: 209-476-0426. E-mail: sharkbrew@central-house.net Web: www.Brewangels.com

July 23

Mudshark's 6th Annual American Beer Month Homebrew Competition Lake Havasu City, AZ. Sanctioned by: **AHA/BJCP**. Fee: \$6. Entry Deadline: 7/12–16. Contact: John Guffey. Phone: 760-326-3022. E-mail: guff@ctaz.com Web: www.mudsharkbrewingco.com

July 23–24

California State Fair Homebrew Competition Sacramento, CA. Sanctioned by: **BJCP**. Entry Deadline: 7/9. Contact: Kevin Pratt. Phone: 916-420-8707. E-mail: domino916@yahoo.com

July 25–29

2nd Siebel Institute Advanced Homebrewing Course Durango, CO. Contact: Siebel Institute of Technology. Phone: 312-255-0705. Fax: 312-255-1312. E-mail: info@siebelinstitute.com Web: www.siebelinstitute.com/course_desc/homebrewing.html

July 29–30

6th Annual New York State Fair Homebrew Competition Syracuse, NY. Sanctioned by: **AHA/BJCP**. Fee: \$8 first, \$5 all others. Entry Deadline: 7/18–22. Awards Ceremony: 8/27. Contact: John Barnes. Phone: 315-673-4334 Ext. 1264. E-mail: jabarnes1@aol.com Web: www.hbd.org/scbc

July 30

Mountain Brewer Open Homebrew Competition/Label Contest Huntington, WV. Sanctioned by: **AHA/BJCP**. Fee: \$5. Entry Deadline: 7/11–23. Awards Ceremony: 7/30. Contact: David Zalewski. Phone: 740-886-8828. E-mail: djzalewski@mapllc.com Web: www.hbd.org/ghha

July 31

18th Annual Southern California Regional Homebrew Championships Corona, CA. Sanctioned by: **AHA/BJCP**. Entry Deadline: 7/15–29. Awards Ceremony: 7/31. Contact: Ron Gordon. Phone: 909-731-0082. E-mail: ngordon@cvar.net Web: www.hopheads.com

August 6

Ashleys First Annual Celebration of Beer Ann Arbor, MI. Sanctioned by: **BJCP**. Contact: Eric J Latondress. Phone: 734-996-9191. E-mail: eric@ashleys.com Web: www.ashleys.com

August 6–13

Montgomery County Ag Fair-10th Annual Homebrew Gaithersburg, MD. Sanctioned by: **AHA/BJCP**. Fee: \$5. Entry Deadline: 7/1–30. Awards Ceremony: 8/13. Contact: Pat and Bill Lawrence. Phone: 301-963-9314. E-mail: billyl@erols.com Web: www.mcagfair.com/fair.htm

August 6

Oregon State Fair Homebrew Competition Salem, OR. Sanctioned by: **AHA/BJCP**. Fee: \$7. Entry Deadline: 7/6–27. Awards Ceremony: 8/26. Contact: Joanne Robinson. Phone: 503-947-3247. Fax: 503-947-3203. E-mail: joanne.robinson@fair.state.or.us Web: www.oregonstatefair.org

August 6

AHA Mead Day The American Homebrewers Association Mead Day is a national event to help increase camaraderie among homebrewers and meadmakers and introduce or reintroduce the meadmaking hobby. Contact: Gary Glass. Phone: 888-822-6273 x 121. Fax: 303-447-2825. E-mail: gary@brewersassociation.org Web: www.beertown.org/events/meadday/index.html

Reader Advisory: Warning!

These pages are rated XG (eXtra Geeky) by the Bureau of Magazine Mucktymucks. 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.

The Whirlpool Effect

By Chris Bible

A whirlpool is a widely used method for removal of trub from wort. In commercial breweries, wort is pumped tangentially into a tank with a flow rate that is sufficient to initially induce a circular flow pattern for the wort within the vessel. As wort enters the tank the suspended trub moves along with the liquid. When the pumping of the wort into the vessel is stopped, the trub begins to slowly collect into a nice, neat cone-shaped pile in the middle of the vessel. Homebrewers achieve this same whirlpool effect by rapidly stirring their wort in a circular motion and then stopping.

So why does the trub collect in the middle of the tank? You've probably studied centrifugal force in school and likely have an intuitive understanding that when things are rotated they should be pushed to the outside (like in a centrifuge), right? (Note to geeks: I realize that there is actually no such thing as "centrifugal force," but it is helpful to use that terminology to clarify points within this discussion.) In order to explain why the trub moves to the center of the tank instead of to the edges, we must first understand the details of fluid dynamics at work within the system.

First, let's walk through a simple, representative physical system (one that has been extensively analyzed) and discuss the forces at work within it. Let's talk about tea in a teacup², specifically, loose leaves being stirred in a teacup.

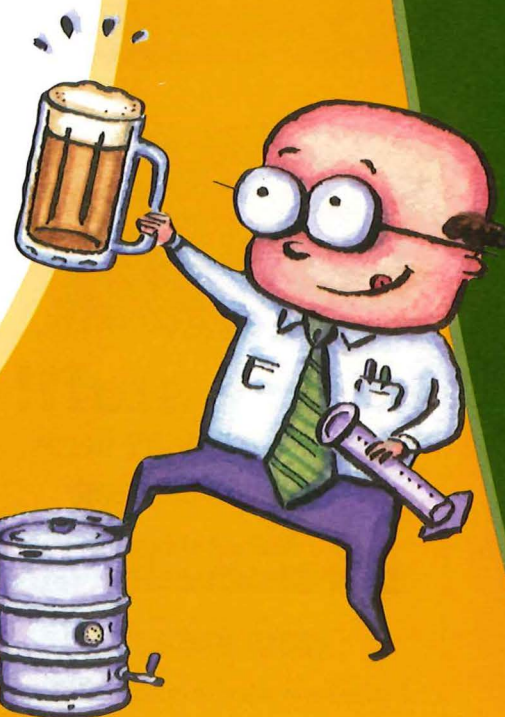
When the tea leaves are being stirred, they are rotating around the bottom of a cup, following the motion of the water that is

induced by stirring. When the spoon is removed, the leaves begin to move toward the center and collect on the bottom of the cup (just like our trub collects in the center of the whirlpool).

This can be explained by the fact that the pressure (and water level) near the side walls of the cup is higher than the pressure in the center when the water is rotating. Note that the shape of the surface of the water, while the tea is rotating, is concave from the viewpoint of the drinker. This pressure variation is the result of the centripetal acceleration that balances the centrifugal acceleration of the rotating liquid water. It is this pressure gradient that induces a vortex effect within the system. But why does this pressure gradient exist?

The pressure gradient exists because water near the bottom of the cup cannot move as freely as the rest of the water within the cup. The water moves much more slowly near the bottom of the cup because of frictional resistance to the movement. The water touching the wall of the cup also experiences a similar frictional effect. As a consequence of fluid friction, the angular momentum of the water near the bottom is not enough to oppose the effect of the radial pressure field created by the rotating water away from the bottom boundary layer.

The pressure variation is such that it pushes the water near the bottom of the cup toward the center. Because mass is conserved in this flow, the water that is caused to move toward the center of the cup then turns upward toward the surface. When



the water is near the surface, it then turns toward the sidewall and finally moves down toward the bottom, replenishing the water that was originally there. The tea leaves recirculate with the water and eventually become entangled with one another near the bottom-center of the cup. Once they are clumped together, the upward movement of the water near the center is no longer sufficient to create a buoyant force that can overcome the force of gravity acting upon the leaves. When this happens, the leaves remain on the bottom at the center of the cup.

So, to summarize:

1. Moving water and tea leaves (or wort and trub) do experience centrifugal force, but the whirlpool effect "overpowers" the centrifugal force and circulates everything toward the center of the vessel in question. The fluid friction at the bottom of the vessel is actually responsible for this.
2. A vortex is induced because the water near the top is pushed out harder due to higher centrifugal force and less friction at the top of the liquid.
3. The water near the bottom is pushed

out with less force because there is more friction and a lower centrifugal force near the bottom to push it out.

4. The weaker centrifugal force at the bottom of the vessel induces a pressure gradient that creates an inward recirculation flow.

This inward recirculation is usually called the Bödewadt layer after the German scientist who described the motion of a rotating fluid over an infinite wall at rest. Albert Einstein, however, was the first to give an explanation of this phenomenon in 1926 in the case of the teacup³ and his explanation is equally correct for trub in a whirlpool.

An illustration of the fluid flow situation within a system in which the fluid has been set into circular motion and then allowed to experience these frictional effects is shown³ in Figures 1a and 1b.

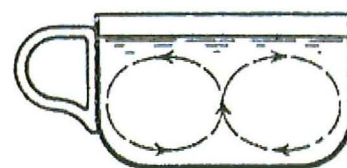


Figure 1a: Flow pattern for Water in a Tea Cup

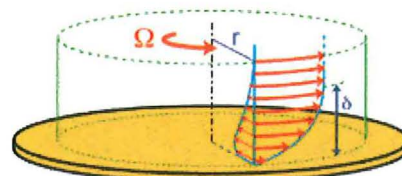


Figure 1b: Velocity Profile within Fluid System

The region of fluid slowed by the wall friction is called a boundary layer, and plays a key role in the fluid mechanics of this system. The boundary layer thickness, δ , is given by the lengthscale where the imposed rotation Ω is diffused by viscosity in the intermediate fluid layers. In the ideal case of a fluid rotating over an infinite wall, the balance between centrifugal and viscous forces yields $\delta \sim (\nu/\Omega)^{1/2}$ (where ν is the kinematic viscosity of the fluid), which is a constant, independent of the radius r .

The mathematics describing the fluid dynamics of this system is complex and involves solving numerous, simultaneous-

Illustrations and photos
courtesy of Chris Bible

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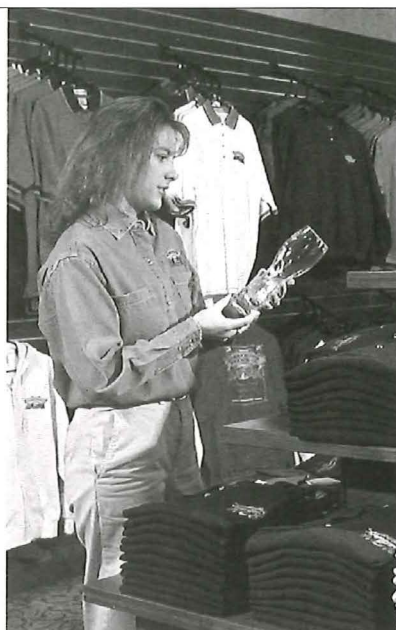
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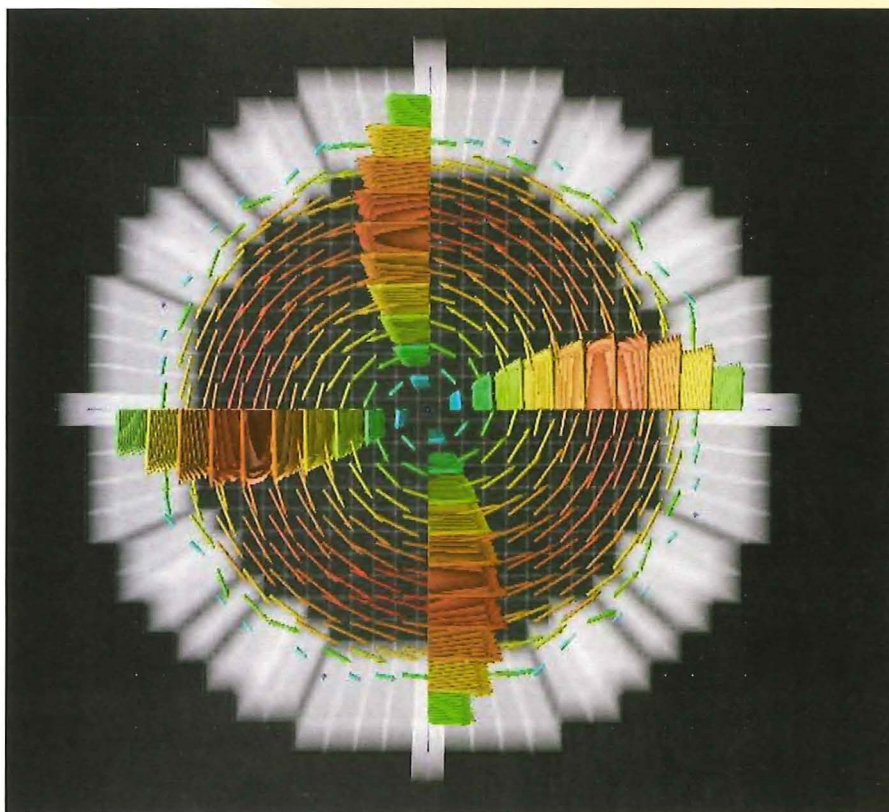


Figure 2: Flow in a Teacup

differential equations. Thankfully, the power of modern computers coupled with commercially available computational fluid dynamics software are able to provide us with a good picture of the velocity profiles⁴ of the fluid within our stirred teacup example. The velocity profiles for the stirred cup are good analogues for what we could expect for velocity profiles within our trub-removing whirlpools. Figures 2 through 4 show these velocity profiles.

Figure 2 presents a view of the velocity profile "looking down from above" into a cup. Figure 3 shows the velocity profiles for fluid flow near the bottom of the cup. Figure 4 shows velocity profiles across a cross-section of the cylindrical cup. In all of these figures, the color red signifies relatively fast-moving fluid elements, and blue signifies relatively slower moving fluid elements.

For a commercial brewer, there are several important factors to consider when operating a whirlpool: vessel geometry, feed velocity and rotation time. Vessel geometry directly impacts the fluid dynamics within the system and thus directly affects the system's ability to

establish a good vortex. Commercial breweries⁵ usually use cylindrical or slightly cone-bottomed vessels with a depth to diameter ratio of from 1:1 to 1:5. Feed velocity and rotation time also affect the final results of the whirlpool. If the initial rotational velocity is too low, a poorly compacted trub cone (or no cone at all) will be formed. If the initial rotational velocity is too high, the trub cone may not hold together. Initial rotational velocities generally are determined by trial and error. Rotation time is important because all of the fluid-dynamic-induced forces must have time to work their magic. Generally, commercial breweries allow a rotation time of between 10 and 40 minutes. Smaller tanks generally require less rotation time.

So what is the optimum rotational velocity and rotation time for a homemade whirlpool system in your home brewery? It all depends on the geometry of your vessel, the amount of friction between the wort and your vessel and the clumping properties of the trub that is being formed into a cone within your

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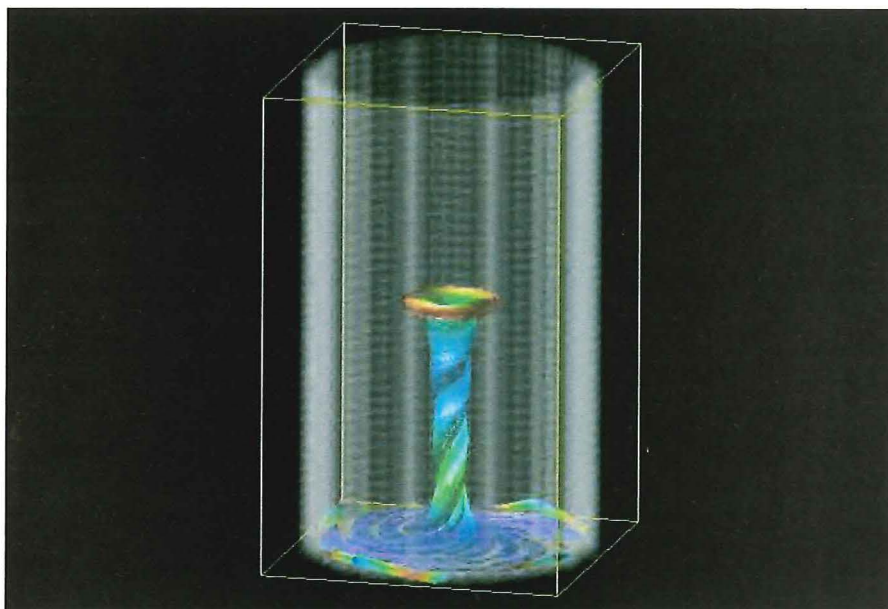


Figure 3: Fluid Flow at the Bottom of a Stirred Cup

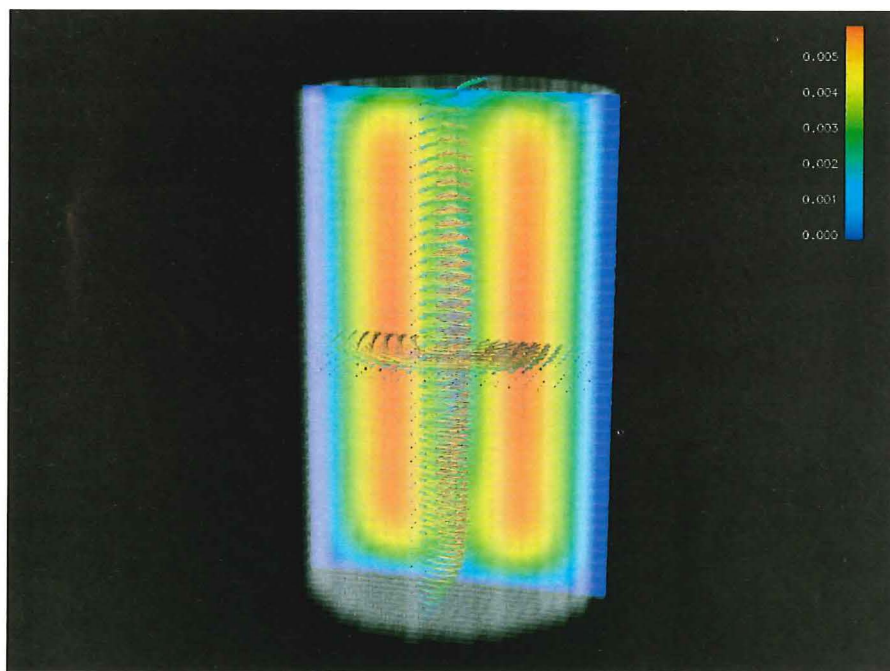


Figure 4: Cross Sectional Fluid Velocity Profile

whirlpool. It also depends (to a small extent) on the O.G. of your wort³; whirlpool effectiveness decreases as the O.G. of the wort increases due to the fact that the relative density-differential between the wort and the trub decreases with increasing wort O.G.

To ensure good cone formation within your whirlpool:

1. Add PVPP, Irish moss or other flocculation aids to the boil to ensure good compaction within the trub cone.
2. Stir your wort vigorously in a circular

motion for long enough to establish good, circular movement of all of the liquid within the vessel.

3. Stop stirring and allow the action of friction within the vessel to create a vortex within the liquid and begin building a trub cone on the bottom of the vessel.
4. Leave the vessel alone for at least 10 minutes (but longer wouldn't hurt).

Although on the surface it seems like a simple thing, a whirlpool is actually a very complex and dynamic system with multiple inertial, gravitational, viscous and fric-

tion forces all acting interdependently on the fluid elements within the wort. Optimization of this highly complex and dynamic system of forces within your own home brewery will certainly require some experimentation. We are all fortunate in that the ability, freedom and desire to experiment are all part of what makes our hobby great!

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. ☺

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Last Drop (continued from 64)

the exact number of participants, despite e-mails and phone calls. However, I was sure that we would have plenty of equipment available. I decided not to worry and just see what would happen.

When people started to show up at the event it looked as though we were going to have plenty of honey and fruit to work with for the club meads. Our mead day production turned out to be an approximate 57 gallons total, which included individual batches. Of that, 37 gallons were the three different club meads. We had one novice mead maker who was making a violet petal metheglin. Another member made two batches of traditional mead with orange blossom honey, one medium dry and one medium sweet, and a woodruff metheglin. The rest of the participants observed and assisted in the making of

the club meads. (The recipes for the club meads are on page 64).

Of course as the mead making progressed, we were treated to an assortment of different meads that participants shared. I offered up a medium dry orange blossom honey traditional mead, a sweet mango melomel, and a medium dry blueberry honey and lavender metheglin. Jackie brought a dry clover traditional mead aged in oak, a sweet blueberry honey traditional mead and a sweet black locust traditional mead. Kenny Butler shared a medium dry wildflower traditional mead and a medium dry orange blossom honey traditional mead. Everyone commented on and enjoyed the unique character of each mead.

As I look back on our Mead Day experience I can truly say it was a success. Our three main objectives were met as follows.

- To impart knowledge as to how mead is made: During the whole event, we discussed mead making and answered questions. Information flowed freely among participants about the mead-making process.
- To demonstrate the varieties of different mead styles that could be made: We accomplished this with the hands-on process of making different mead styles and using different types of honey. Also, sampling different styles with the group allowed everyone to get an idea of the variety of flavors and aromas that could be accomplished in a finished product.
- To have fun and socialize: According to everyone that participated, we obviously achieved this objective. Everybody had a great time! (How could you not, with all the great meads we had to sample?)

We're already planning this year's AHA National Mead Day when we'll get together and bottle the 2004 mead and make and drink some more.

If your club has ever considered putting on a Mead Day event, do it! It fosters camaraderie, creates interest in mead making and besides, it's just plain fun!

Roger Gibson is a fearless member of the Kansas City Bier Meisters. For the record, he did clean up afterwards. 🍷

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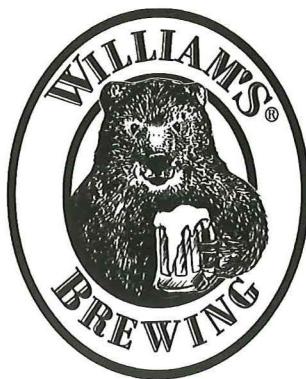
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A Honey of a Time in Kansas City

When our fearless leader, Pancho Luna, asked me at our July 2004 meeting to organize something for the club for the AHA National Mead Day, I was a little dubious. I knew that if we had it at my house my wife was not going to be too happy. Now don't get me wrong, of all of the beverages that I produce at home, mead is her favorite. It's just the thought of cleaning the house before and afterward that annoys her, not to mention food preparation.

Anyway, I reluctantly agreed to organize and host our club's Mead Day event. I just couldn't pass up the idea of having people over and making and especially consuming a variety of mead.

The following ideas might help you plan an AHA Mead Day event.

The first and probably most difficult step in planning was to sweet talk my wife into letting me have it at our house. "Yes, I promise I'll do all the cleaning and other preparations. You won't have to lift a finger." At that, she immediately lifted a finger and I won't say which one. Finally, however, I was able to cajole her into allowing me to host it. With this important step completed, I was then able to get down to the actual planning.

Three goals I kept in mind while planning our event were:

- To impart knowledge as to how mead is made.
- To demonstrate the varieties of different mead styles that can be made.
- To have fun and socialize.

Jackie Rager and I put together some ideas that we thought would meet the above criteria. We decided that as a club it would be nice to make a huge batch of



mead. We would ask everyone to bring a gallon or more of honey (any kind) and we would mix it all together for a traditional mead.

Then we took the idea a step further and decided to ask people to also bring their favorite fruits so we could mix them together in one batch for a "fruit salad melomel." In a way we thought this would help build club unity while showing the flexibility one has with ingredients in making mead. Besides, it sounded like a fun idea. Also participants could bring ingredients to make their own batches if they wanted to. All we had to do now was send out the invitations and start to organize.

I decided to grill hamburgers and told everyone to bring a side dish or dessert. Jackie was going to bring some reverse osmosis water, two 15-gallon fermenters and a 15-gallon stainless steel pot plus

some other ingredients for the club batches. I would supply a burner for anyone that needed heat.

As August 7 neared, we still were not sure exactly how much honey and fruit we were going to have or (continued on page 56)



Fruit Salad Melomel

Approx. 15 gallons

Original Gravity: 1.116

4.0 lb	peaches
1.5 lb	seedless red grapes
1.0 lb	strawberries
1.5 lb	dark sweet cherries
1.0 lb	black plums
2.5 lb	blueberries
4.0 lb	blackberries
3.0 lb	red raspberry puree
2.0 lb	bananas
5.0 lb	mangoes
40.0 lb	clover and wildflower honey
1 quart Yeast	starter of Wyeast Sweet Mead Yeast

Traditional Varietal Mead #1

Approx. 7 gallons

Original Gravity: 1.222

15.0 lb	orange blossom honey
5.0 lb	star thistle honey
10.0 lb	wildflower honey
16.0 oz Yeast	starter of Wyeast Dry Mead Yeast

Traditional Varietal Mead #2

Approx. 15 gallons

Original Gravity: 1.222

32.5 lb	blueberry honey
20.0 lb	clover honey
1 quart	starter of Wyeast Sweet Mead Yeast

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