

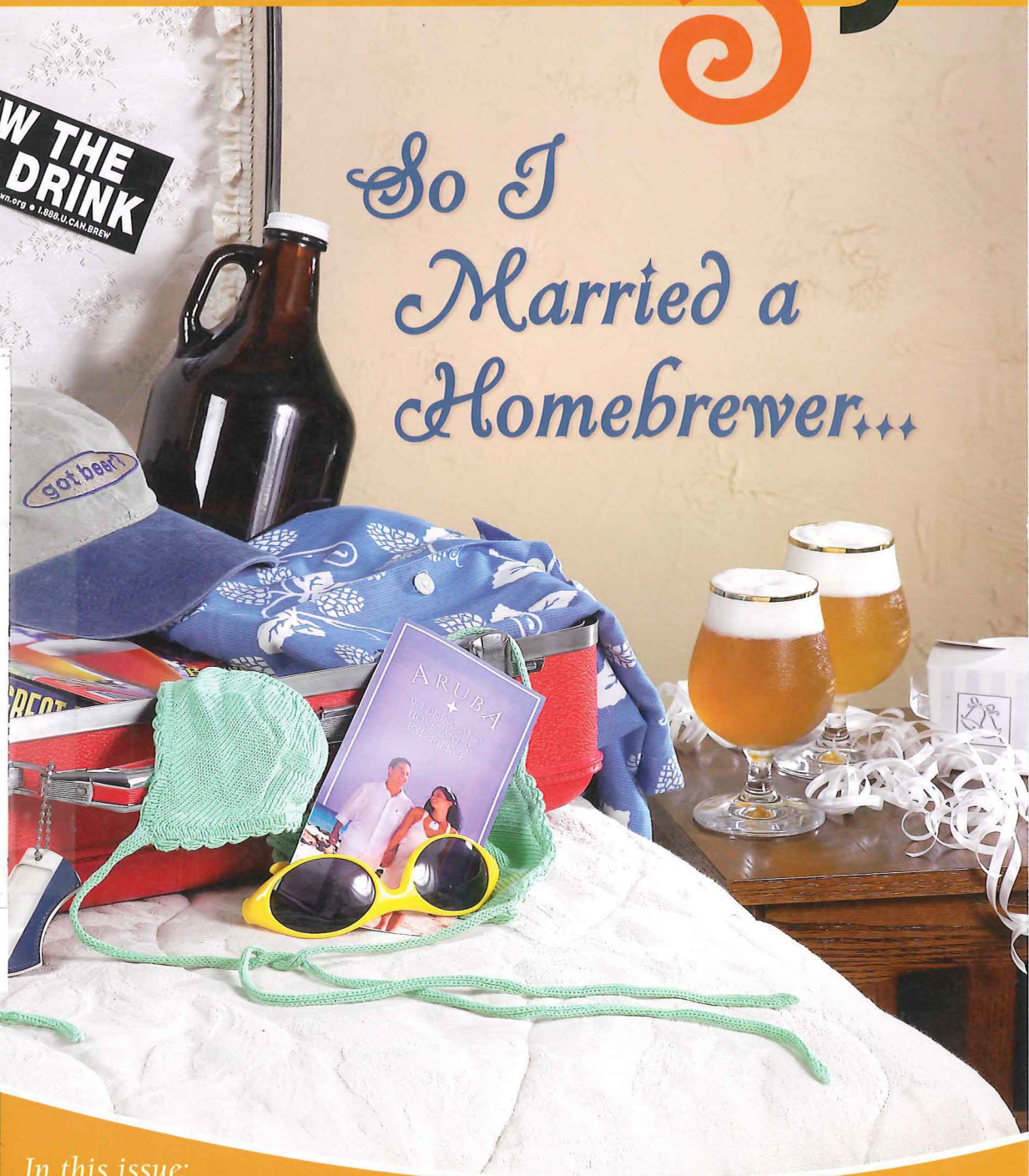
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CAN
BREW

Secrets of
Lager
Brewing

TRICKS
OF THE
TRADE

National
Homebrewers
Conference

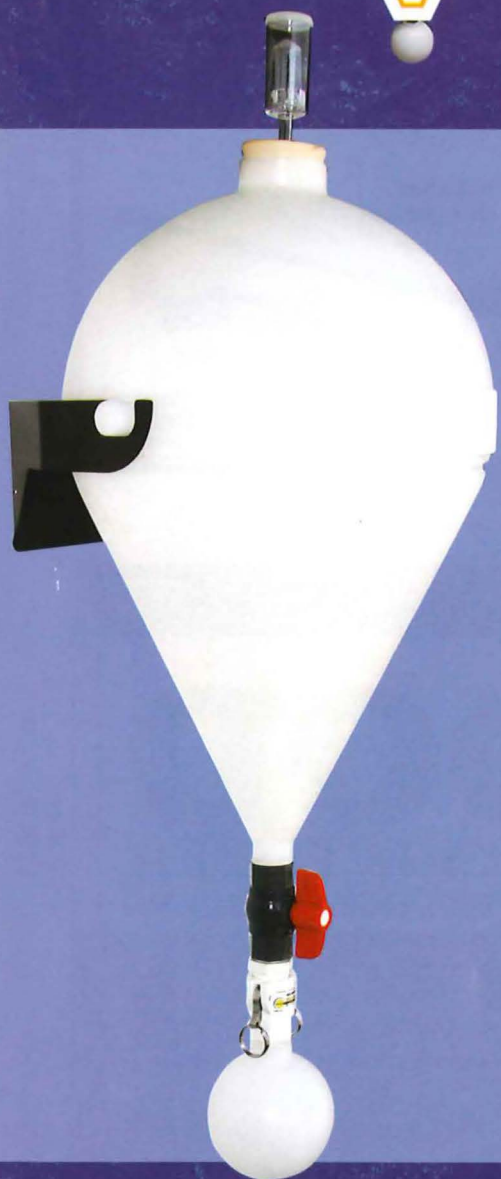
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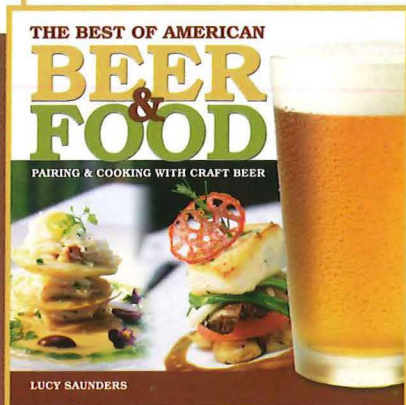
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Published by the American Homebrewers Association, a division of the Brewers Association, a not-for-profit organization located at 736 Pearl Street, Boulder, CO 80302-5006 USA. Membership is open to everyone. **Zymurgy** (ISSN 0196-5921, USPS 018-212) is the bi-monthly journal of the American Homebrewers Association and is published six times per year. Periodicals Postage Paid at Boulder, CO and additional mailing offices. Canada Post Agreement Number 41197537. Annual memberships are \$38 U.S., and \$44 International and include a \$35 subscription to **Zymurgy**.

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

What's Your Style?

New Belgium Brewing Co. brewmaster Peter Bouckaert had a lot of fun teasing Charlie Papazian as he gave the keynote address at the American Homebrewers Association's National Homebrewers Conference on June 22.

Bouckaert's talk was centered on beer styles—or a lack thereof—and Papazian, who introduced Bouckaert, is the principal author of the Brewers Association's Beer Style Guidelines that are used for professional competitions including the Great American Beer Festival and the World Beer Cup.

"We have our (New Belgium) 1554 black beer," said Bouckaert. "Charlie hasn't created a style around it, but he will."

Bouckaert, who came to Colorado's New Belgium in 1996 from the Rodenbach Brewery in Belgium, takes a holistic approach to designing beers and said he is not concerned about hitting a certain style.

"Half of my beers will never win a medal at the GABF," he said. "Style guidelines narrow the mind at the start of development. I look at style guidelines and IBUs are in there. I think, 'That's ridiculous. I can brew a 40 IBU beer that tastes like 25.'"

Bouckaert, who said he is an anomaly in the craft brewing industry in that he didn't start out as a homebrewer, encouraged attendees to design beers that will provide "10 minutes of pleasure."

"We're in the entertainment industry," he said. "We're making beer for our friends and ourselves. What about making a 4th of July style, or a Wedding style that you can match with the couple getting married? What about a Yellowstone style? What about a Low Carbon Footprint beer?"

Bouckaert, of course, was only picking on Papazian for the sake of stimulating con-

versation among the attendees. Papazian's "Relax. Don't Worry. Have a Homebrew." advice has become a mantra for homebrewers everywhere.

"We've come a long way because of Charlie," he said. "He stimulated thought and we've educated ourselves because of him."

I talked to Papazian after the address to get his thoughts.

"I tend to agree with most of what Peter said," said Papazian. "If you've read my columns in **Zymurgy** the past few years, I've been encouraging people to step outside the box and not be a style geek." In fact, at the time of the conference Papazian had already written his World of Worts column for this issue, called A Return to Innocence, about brewing using local ingredients.

But Papazian said he feels that there is still a great deal of value in defining beer styles, especially when using them as a starting point for brewing. "Peter is a very knowledgeable brewer," he said. "He takes the brewing palette and paints something new. It's learning what's in that palette that's important."

Plus, he says, the Brewers Association guidelines continue to evolve, as do the Beer Judge Certification Program guidelines that are used to judge the National Homebrew Competition that was held in conjunction with the conference. "The Experimental category is the category from which all future styles will emerge," said Papazian.

Papazian couldn't help but poke fun of Bouckaert too. "I'm thinking that Peter is secretly coming out with a new style called Fat Tire Imperiale but he's not telling anyone," said Papazian.

Jill Redding is editor-in-chief of Zymurgy.





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>> GET THERE!

Firestone Walker Oaktoberfest

Firestone Walker Fine Ales and River Oaks Hot Springs & Spa will roll out the barrels on September 29 at the third annual Firestone Walker Oaktoberfest in Paso Robles, Calif., a fun and flavorful oak-inspired twist on the great German tradition of Oktoberfest. Event proceeds benefit the Hospice of San Luis Obispo County.

"Oaktoberfest celebrates the unique flavors of California's Central Coast while honoring classic beer traditions," said Jamie Smith, marketing manager for Firestone Walker Fine Ales. "The community has really rallied around this event over the past few years. We have added new attractions and we're expecting our biggest turnout yet."

Last year's Oaktoberfest raised more than \$8,000 for the Hospice of San Luis Obispo County, and the goal this year is \$15,000.

The ceremonial oak-aged beer will arrive in barrels on a horse-drawn carriage in the company of "beer maidens." A Firestone Walker beer tent will be complemented by a German beer tent featuring a variety of German brews. Firestone Vineyard will pour its Riesling and Gewurztraminer, two varietals with roots in Germany.

Oaktoberfest will be held at River Oaks Hot Springs & Spa in Paso Robles from noon to 5 p.m. Tickets are \$35 per person (\$40 at the door if not sold out), which includes admission and a first pour from a selection of Firestone Walker beers. Additionally, the first 1,000 people through the door will receive a commemorative glass stein. Visit www.FirestoneWalker.com/oaktoberfest for tickets and details.



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La Crosse Oktoberfest La Crosse, WI. Phone: 608-784-3378, E-mail: office@oktoberfestusa.com, Web: www.oktoberfestusa.com

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Fresh Hop Ale Festival Yakima, WA. Phone: 509-966-0930, E-mail: alliedartsyakima@nwinfo.net, Web: www.freshhopalefestival.com

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Capitol City Fuel



Fuel is a beer that always makes a statement no matter where or when you serve it. This Russian Imperial Stout infused with Sumatra coffee clocks in at around 10 to 12 percent making it one of the more potent "breakfast" beers. Invented by former Cap City brewer Mark "Abe" Abernathy, this beer is only brewed and served in their Baltimore Inner Harbor location and on occasion at beer festivals. We unfortunately lost Abe in a boating accident several years ago, but his recipe and memory live on in this smooth, easy-drinking beer. The aroma is reminiscent of standing in line at your local Starbucks. The black beer with a thick, dark head clings to the glass like 10W-30 to your car engine and despite the high quantity of coffee dominating the flavor, this stout has the legs to stand up and be noticed and not just be another "cup of joe."

Reviewed by Les White, Baltimore, Md.

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

BREW NEWS: Great American Beer FestivalSM

It's happening a little later than usual this year, but an even bigger and better Great American Beer Festival is set for October 11-13 at the Colorado Convention Center in Denver.

The festival had a record-shattering 41,000 attendees in 2006 including three (out of four) sold-out sessions. Beer lovers had 1,650 different beers to choose from on the festival floor from 384 different breweries.

New this year, the Saturday afternoon session is a Members Only session, open exclusively to American Homebrewers Association and Brewers Association members. Non-members can purchase new member tickets for this session.

Also on tap this year:

- The Brewing Network will host a live radio show Thursday and Friday evenings from 7 to 8:30 p.m., including the Inside the Brewers Studio brewer interviews.
- Brooklyn Brewery brewmaster Garrett Oliver will present a beer and cheese pairing on Thursday evening.
- Lucy Saunders' new book *The Best of American Beer and Food* will be released at the festival.
- The second annual GABF ProAm awards, which pair amateur and pro brewers for collaborative beers, will be presented.
- A Support Your Local Brewery booth will allow participants to sign up to become part of a beer enthusiast activist network.
- *Draft* magazine will present a beer dinner series in Denver the week of the festival.
- Stand-up live comedy will take place on the main stage.
- The Brewing Network will provide a "walking tour" podcast of the GABF that patrons can download before the event.

For more information on the GABF, visit www.beertown.org.



THE LIST

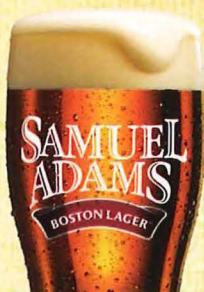
14 Tents of Oktoberfest

The original Oktoberfest in Munich, Germany is set for September 22 through October 7. Fourteen tents are lined up for the visitors from around the world who will flock to Oktoberfest. Here's a quick rundown of the tents:

1. Hippodrom: "singles" tent, including a wine bar
2. Armbrustschutzen: marksmen's tent, including crossbow competition
3. Hofbrau Festhalle: counterpart to the Hofbrauhaus in Munich
4. Hacker-Festzelt: includes a rock-and-roll band
5. Schottenhamel: the tapping of the first keg
6. Winzerer-Fahndl: a toast to great fun
7. Schutzen-Festzelt: includes a suckling pig prepared in malt beer sauce with coleslaw
8. Kafers Wiesen Schanke: celebrity meeting place and gourmet temple
9. Weinzelt: the wine tent!
10. Lowenbrau Festhalle: the tent that roars like a lion
11. Brauerosl: the yodeling tent
12. Augustiner-Festhalle: fun for the whole family
13. Ochsenbraterei: includes oxen specialties
14. Fischer-Broni: the tent for fish lovers



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by Ray Daniels



Brewing for the Future

More than a few of you are relatively new to the hobby—let's say in your first three years and 50 batches. During those first years, you get your act together, do some experimenting and start to settle into a level of comfort with brewing. You learn what kinds of beers you like, make your peace with the whole extract/grain question, invest in some equipment (maybe continuously) and meet some of the great folks who are part of this hobby. Then maybe one evening over a nightcap beer—something with an abv of more than 7 percent—you start to think about where brewing might take you.

Perhaps you'll take a first-place ribbon or even best of show at your local competition someday. Maybe even climb the podium at the National Homebrew Competition—perhaps to claim the honor of Homebrewer of the Year and join a very exclusive club. Or maybe you dream of creating a beer that brings the world to your door: a pale ale so perfect, a stout so sweet or a Marzen so massive that one and all sing your praises and insist that you start a brewery and take their money.

Amidst all these dreams, you may ponder your growing cellar of homebrew. If you bottle and if you have the space, homebrew tends to stockpile a bit so that you've soon got your own personal "barchive" of aging beers. As a general rule, of course, old beer is mostly old and not so great a beer. But stronger, full-flavored beers can be an exception to this rule. As homebrewers we learn that age can soften the harsh flavors of a big beer. We see that sometimes a few years in the bottle shifts the shape of a complex beer into something different but still—and sometimes *more*—wonderful.

As so, pondering the future and your beer cellar, you may start to wonder what some

of your beers might taste like in five, 10 or even 20 years. You may even begin to wonder how best to go about creating a beer that would be enjoyable to drink on a special occasion many years from now—your son's 21st birthday for instance or perhaps a birthday of your own when you arrive at some age that is evenly divisible by 10.

I've had the occasion to drink some old beers of late and the experience has left me with some thoughts on how to brew for the future—how to formulate a beer today that will drink pleasantly 20 years from now.

Let's start with the obvious things: you'll want a beer with plenty of alcohol, say 7.5 to 8.0 percent at a minimum. Anything from there up to 11 or 12 percent is probably ideal.

Second: bottle-condition the beer. Yeast scavenges oxygen to reduce oxidation effects. It also continues certain metabol-

ic processes that can contribute complexity. Just don't go overboard on the yeast quantity: the yeast will eventually autolyse and excessive amounts can have a negative effect.

During this most recent AHA conference, I tasted a range of past commemorative beers offered up by Charlie Papazian—ranging in origin from 1982 to 1999. The flavors of all these "old" beers proved instructive with regard to brewing for the cellar.

One of the most striking discoveries was hazelnut. Frankly, it's not my favorite flavor, but the 1993 Oregon Nut Brown Ale made by Christopher Studach was still very tasty. In particular, the hazelnut flavor seemed very fresh and unchanged while the malt flavors (contributed in part by homemade brown malt) were caramelized and enjoyable. This was a beer that readily stood up for 14 years and I would bet on it for many more.

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One thing we know for sure is that hop character declines pretty quickly in aging beers. Of course a hugely hopped beer is still going to have evidence of the hops five years later, and maybe even 10, but at some point all that is likely to fade into a maltier milieu. I've certainly had 10-year-old bottles of Sierra Nevada Big Foot Barleywine

that were enjoyable and I wouldn't turn down even older ones, but if I were really setting out to create a great beer for aging, I don't think that's the route I'd go.

And even on the malt side, some special caveats apply. We had a couple of "high gravity" beers among the commemorative

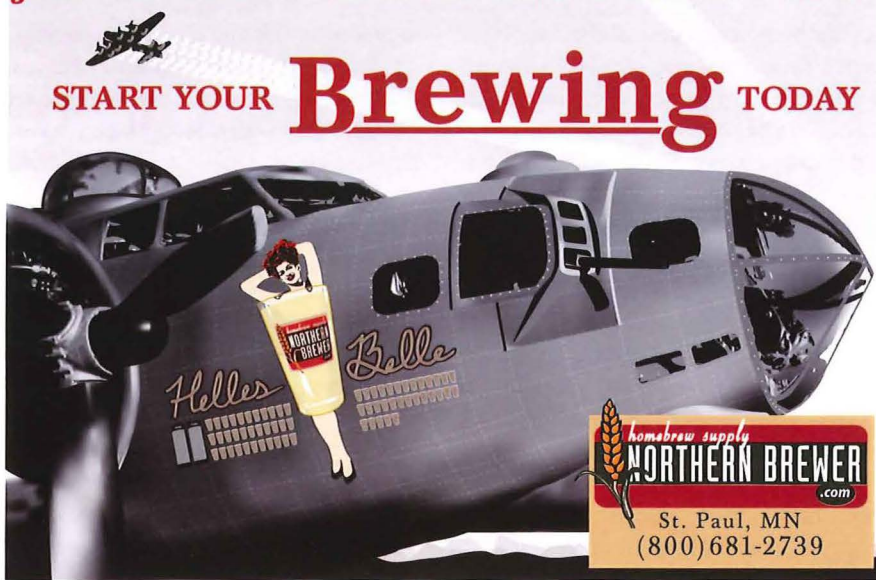
brews that simply didn't hold up to the insults of age. The one exception to this was the Imperial Stout brewed by Byron Burch for the 1990 Oakland conference. Brewed to an OG of 1.110 and including rice extract and lactose in the normal stout formulation, it has evolved into a beer with some very pleasant flavor notes. While the oxidation was apparent, I also found caramel and prune flavors with a nice chocolatey finish and a very creamy body. This beer made a strong argument for strong stouts as aging beers.

Two other beers stood out. First were sour beers. We had a couple with sour traits—not all of them intentional! I've found that lactic and acetic sourness often develop in beers over time—no matter how clean and pristine their origins may be. One way to battle this is to go sour from the start. The gueuze we had from Doug Faynor wasn't that old, especially by lambic standards, having been bottled in 1999, but it was still in very nice shape, I thought. It had a nice sour/tart flavor and just a touch of Brettanomyces character that made it quite drinkable. If you aren't a fan of roast malt, then mastering sour beer might be the way to go in prepping something that will stand the test of time.

The final avenue you might pursue for creating a beer for the future is actually not beer at all: it's mead. In his book, *The Compleat Meadmaker*, Ken Schramm says meads only get better with age. The one commemorative mead we tasted in Denver seemed to bear that out. Jackie and Alberta Rager's 1997 contribution proved very dry and warming as you'd expect from something that started at 1.078 and finished at 1.004, but it was still enjoyable with an inviting peach aroma. I don't know whether it is the complexity of honey or the simplicity of mead, but something about this beverage gives it staying power. Furthermore, they are so easy to make that you could handily put up a mead alongside any beer that you create with aging in mind. If nothing else, a comparison of the two every, say, five years would be a lot of fun.

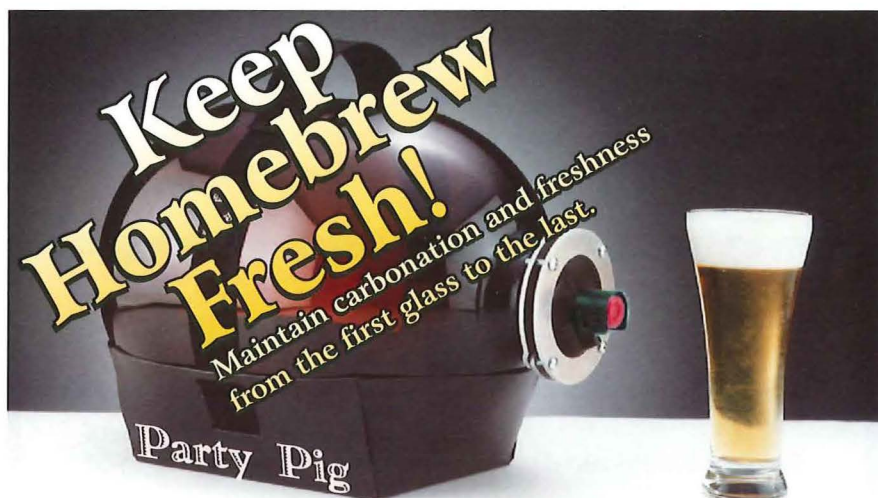
Ray Daniels is the author of *Designing Great Beers* and the director of Brewers Publications for the Brewers Association.

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by Professor Surfeit



A Pirate's Booty

Dear Professor,

I am new to brewing and so far have coincidentally brewed all my batches on holidays. Looking to keep to my unintended theme, what recipes would you propose for "Talk Like a Pirate Day" (www.talk-likeapirate.com) on September 19?

Arrrrrgh,
Kathleen Downey
Eugene, Ore.

Dear mate,
Perhaps stolen Pirated Blackstrap Stout, arrgggh. Or perhaps the original IPA, Pirate's Island Pale Ale. Arrrrggggh. Better than grog me bets.

Arrrrrrgggghhhh,
The Professor, Hb.D.

Immaculate Assumptions

Dear Professor,
Brewing is both an art and a science, which is why I always enjoy reading *Zymurgy*. You provide ample portions of each, and, in doing so, help to make us better brewers.

Amahl Scheppach's Club Only column (May/June 2007, page 18) contained a section on Estimating Original Gravity. Some of the numbers did not seem right. I reread it to make sure I was not missing anything, but stating that 1 pound of pale malt in 1 gallon will provide 25 to 28 points of fermentables just does not make sense. Whether you look it up in tables like in *Clone Brews*, or use software like Promash, the result is the same: 1 pound in 1 gallon of pale or pils malt gives you about 37 points. OK, granted that nobody has 100-percent brewhouse efficiency, but that issue was not brought up in the article, and even adjusting the numbers does not yield what the article stated.



Likewise, LME gives about 37 and DME about 45 (the numbers are the same when you adjust for water content), and these are already "extracted" and do in fact provide 100 percent of the stated value. Yet these numbers are, again, higher than those stated in the article.

What up?
Barry "Doc" Wayne
Yucca Valley

Hiya Doc,
This was a tough one to figure out. Like you I was getting higher gravities for all the ingredients listed. It wasn't until I went down Amahl's list and plugged in all my numbers side by side that I figured out what may be going on.

First of all I want to commend Amahl for simplifying his explanation and data in terms of what is practical for simple extract brewing. He's done a great job and I appreciate the fact that whenever you simplify the process one must compromise and leave out a few details that really don't matter so much with simple brewing success. Secondly, I believe his gravities for pale malt are assuming an efficiency of 70 to 79 percent by my calculations. At 80-percent efficiency, which is common, 1

pound of grain malt should give you about 1.028-29 points of gravity in 1 gallon. This result is not only according to some reliable software I use, but also quite accurate from my actual homebrewing practices.

At 100-percent efficiency you would theoretically get 1.037 as you suggest, but that is not at all reasonable for any homebrewer or even a professional brewer to achieve. Generally homebrewers' efficiencies are between 70 and 85 percent and in most homebrew literature it is assumed that brewers are working with these efficiencies. I agree with you that whenever grain recipes are formulated and gravity is estimated, the author should state what efficiency is assumed.

Now then, the bit about sugars, honey and

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Gorham, Portland, South Portland</p> <p>MARYLAND Dogfish Head Alehouse Gaithersburg Hops Grillhouse and Brewery Owings Mills Rock Bottom Restaurant & Brewery Bethesda</p> <p>MASSACHUSETTS Boston Beer Co. Boston Cambridge Brewing Co. Cambridge Rock Bottom Restaurant & Brewery Boston, Braintree</p> <p>MICHIGAN Arbor Brewing Co. Ann Arbor Big Buck Brewery & Steak House Auburn Hills, Gaylord Hereford & Hops Steakhouse & Brewpub Escanaba Saugatuck Brewing Co. Saugatuck</p>
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MINNESOTA

Granite City Food and Brewery
Eagan, Maple Grove, Roseville, St. Cloud,
St. Louis Park

Old Chicago

Apple Valley, Blaine, Duluth, Eagan, Eden
Prairie, Minneapolis (2), Minnetonka,
Plymouth, Roseville

Rock Bottom Restaurant & Brewery
Minneapolis

MISSOURI

75th Street Brewery
Kansas City

Granite City Food and Brewery
Kansas City (Zona Rosa)

Old Chicago
Columbia

MONTANA

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Old Chicago
Lincoln (2), Omaha (4)

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Kearney

Upstream Brewing Co.
Omaha (2)

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Reno

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Las Vegas

Rosemary's Restaurant
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Portsmouth

NEW JERSEY

Ale Street News
Maywood

Triumph Brewing Co.
Princeton

NEW MEXICO

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Santa Fe

Chama River Brewing Co.
Albuquerque

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Albuquerque

NEW YORK

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Brooklyn

CH Evans Brewing Co. at the
Albany Pump Station
Albany

Crooked Rooster Brewpub
Watkins Glenn

Ellicottville Brewing Co.
Ellicottville

Great Adirondack Brewing Co.
Lake Placid

Lake Placid Craft Brewing Co.
Plattsburgh

Lake Placid Pub & Brewery
Lake Placid

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Utica

Rohrbach Brewing Co.
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Roosterfish Brewing Co.
Watkins Glenn

Southampton Public House
Southampton

Wildflower Café
Watkins Glenn

NORTH CAROLINA

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Asheville

Hops Grillhouse & Brewery
Matthews

Rock Bottom Restaurant & Brewery
Charlotte

NORTH DAKOTA

Granite City Food and Brewery
Fargo

OHIO

BJ's Restaurant & Brewhouse
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The Brew Keeper
North Ridgeville

The Brew Kettle, Taproom &
Smokehouse
Strongsville

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Willoughby Brewing Co.
Willoughby

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Deschutes Brewery & Public House
Bend

Eugene City Brewery
Eugene

House of Spirits (Rogue Ales)
Newport

Laurelwood Public House & Brewery
Portland

Old Chicago

Beaverton, Gresham, Portland (2)

Pelican Pub & Brewery
Pacific City

Rock Bottom Restaurant & Brewery
Portland

Rogue Ales Public House
Newport

Rogue Distillery and Public House
Portland

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Barley Creek Brewing Co.
Tannersville

The Brewerie at Union Station
Erie

Hereford and Hops Steakhouse and
Brewpub

Cranberry Township

Iron Hill Brewery & Restaurant
Media, North Whales, West Chester

Rock Bottom Restaurant & Brewery
King of Prussia, Pittsburgh

Triumph Brewing Co.
New Hope

SOUTH CAROLINA

Hops Grillhouse & Brewery
Spartanburg

SOUTH DAKOTA

Granite City Food and Brewery
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TENNESSEE

Big River Grille & Brewing Works
Chattanooga, Nashville

Bluewater Grille
Chattanooga

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Lewisville, South Arlington, Sugar Land,
Webster, Willowbrook

Blue Star Brewing Co.
San Antonio

UTAH

Bohemian Brewery & Grill
Salt Lake City

Moab Brewery
Moab

Squatters Pub Brewery
Salt Lake City, Salt Lake Airport

Uinta Brewing Co.
Salt Lake City

VIRGINIA

Gordon Biersch Brewery Restaurant
McLean, Virginia Beach

Hops Grillhouse & Brewery
Alexandria, Richmond

Rock Bottom Restaurant & Brewery
Arlington

VERMONT

Rock Art Brewery
Morrisville

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Gordon Biersch Brewery Restaurant
Washington, D.C.

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Granite City Food and Brewery
Madison

Hereford & Hops Steakhouse
& Brewpub

Wausau

Milwaukee Ale House
Milwaukee

Northwoods Brewpub & Grille
Chetek, Eau Claire

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extracts really had me wondering at first. But carefully read what Amahl says in his first paragraph: "...1 pound of fermentables dissolved in 1 gallon of water..." Most homebrew recipes do not work this way. As you and I have realized our numbers are higher. Why? Because homebrew recipes are based on adding fermentables to a measure of final volume of the brew. For example, if you add 1 pound of malt extract to 1 gallon of water (as in Amahl's example) you will end up with a greater volume than 1 gallon. When I brew I measure ingredient extract based on final volume, not on added water. So there is at least part of the reason why Amahl's numbers are a bit lower. It makes mathematical sense if you compare his

numbers for dextrose and sugar, which are pretty standard. It doesn't quite work out so

perfectly with honey because the water content of honey can vary and with crystal malt, you

	70% efficiency	80% efficiency	85% efficiency
1 lb. pale malt in final volume of 1 gallon	1.025	1.028	1.031
1 lb. of ingredient	Amahl: 1 gallon of water		Final volume: 1 gallon
granulated sugar	1.042		1.045
corn sugar/dextrose	1.040		1.044
dry malt extract	1.040		1.044
liquid/syrup malt extract	1.034		1.036
honey	1.030		1.033-36



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will get variation of extract with different kinds of roast/toast as well as variation due to steep method or 60 minute mash efficiency.

Liquid malt extract (syrup) is typically 85 percent solids and 15 percent water. There are some variations among brands. You are correct in that with extracts, whether syrup or dry, they are not affected by "grain extract efficiencies." Typically 1 pound of liquid syrups will give you about 1.036-1.037 specific gravity per final volume of 1 gallon; dry extracts about 1.044-1.045. See the chart on page 13 for a more complete way of looking at things.

*Immaculate assumptions,
The Professor, Hb.D.*

Yeast Traffic: Keg vs. Bottled Beer

Dear Professor,
We have one issue that we can't get away from. If we bottle and keg from the same batch, the beer in the bottles comes out clear, but not the keg. Why? What are we doing wrong?

Ed Hobson

Dear Mr. Ed,
I don't really have a doctorate in Homebrewing, but I say so anyway. Therefore, here's my answer. It might be that the yeast has a long way to drop in a keg. Furthermore, when it does there is sediment that is also going to being drawn out of the tube. I have noticed the same thing myself. Actually I've been making the same observation as you for over 20 years now.

One thing I also note is that toward the end of the keg, the beer gets clearer and clearer. Reasons: 1) The yeast has finally drifted down and out of the beer and 2) the sediment around the outtake has been sucked away as much as it is going to be sucked. I think my observation might be a good reasoning. Works for me. Work for you?

*So it ain't perfectly clear, but it tastes great,
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.



by Amahl Turczyn Scheppach

The Malty Goodness of Bock

Bock beer is an ancient German lager style that was made famous in Bavaria, specifically Munich, but originated in the Northern German city of Einbeck. After the 17th century, the beer became popular in Bavaria, and with the help of the Bavarian dialect, "Einbeck" was corrupted to "Bock."

Bock is also the German word for a male goat, so goats often adorn the labels of bock-style beers. Several subcategories emerged from the original dark, strong, malty lager: a light version typically referred to as Maibock; a stronger version collectively known as doppelbock (which means "double bock", even though a doppelbock's strength can be much higher than twice that of bock beer); and a concentrated version called eisbock, created by freezing the fermented beer and removing the resulting ice. Each sub-style shares a few traits, namely a pronounced malty character, lager yeast fermentation and extensive conditioning at cold temperatures; subtle use of noble hops; and decoction mashing to bring out full malt flavors.

Helles bock, also called Maibock, is brewed to be light in color (which can be deep gold to light amber) but not strength. While these beers may exhibit more hop character, hop aroma should still be moderately low to none, with similarly restrained bitterness. Noble, preferably German variety hops, should be used. Double decoction mashing is still traditional, though boil time should not be as lengthy as in other bock styles to avoid excessive caramelization in the kettle. Pilsner malt or Vienna malt should serve as the base, though Munich malt may be added in lesser amounts for malt flavor and aroma. Maibock is often associated with spring festivals, though if you

choose to call it helles bock, you will have no such seasonal restrictions and may enjoy it year round.

Traditional bock beer places a much higher emphasis on melanoidin and toasty dark malt flavors and aromas, and should be brewed with the goal of producing a very clean, deeply malty lager. Bock can be a light copper to brown color, with enriched color and flavor coming from Munich and Vienna malts, long boil caramelization, and decoction mashing. Hop aroma should be buried beneath the malt, and bitterness should only be sufficient to (according to the BJCP) "support the malt flavors, allowing a bit of sweetness to linger in the finish." That said,



Bock

Ingredients

for 5 U.S. gallons (19 liters)

1 can	Coopers Light Malt Extract
1 can	Coopers Amber Malt Extract
4.0 lb	(1.8 kg) German Munich Malt
2.0 oz	(57 g) Carafo Chocolate Malt
2.0 oz	(57 g) German Hallertauer Mittelfruh hops, 4.5% alpha acid (60 min)
0.5 oz	(14 g) German Hallertauer Mittelfruh hops, 4.5% alpha acid (15 min)
Coopers	Wyeast 2206 Bavarian Lager Yeast or White Labs WLP833 German Bock Lager Yeast
	Brewery Carbonation Drops for bottling

Original specific gravity: 1.071

Final specific gravity: 1.017

IBU: 24

ABV: 7.1%

Directions

Steep grains in 1.5 gallons of 150° F (66° C) water for 45 minutes. Remove grains and sparge with 1 gallon of 170° F (77° C) water. Stir in extract and bring to a boil. Add 60 minute hops. After 45 minutes, add 15 minute hops. When boil is complete, strain into fermenter with enough cold water to make 5 gallons. Chill in a cold water bath if necessary to drop temperature below 55° F (13° C), aerate and pitch yeast. Ferment at 50-55° F (10-13° C) for two weeks. Rack to secondary and store at 50° F (10° C) for four to eight weeks. Prime with Coopers carbonation drops and bottle. Age for three to four weeks or more.



bock is not a cloying beer, so use a clean, well-attenuating lager yeast that will bring the beer from an original gravity of 1.064-1.072 to a finishing gravity of 1.013-1.019.

Doppelbock represents a bit of a tour de force for brewers of malty beers. While doppelbocks can be very high in alcohol, clean malt flavors and aromas should always be the goal. Because of the extreme emphasis on malt, low levels of fruity aromas and flavors may emerge, not as a result of the yeast, but as malt byproducts. Hints of chocolate are also acceptable, but roast or burnt flavors are out of character,

so darker color malts like Carafo should be used sparingly, if at all. As in the Bock category, noble hops should be used only to partially balance malt sweetness, and attenuation should be sufficient to keep the beer from being cloyingly sweet.

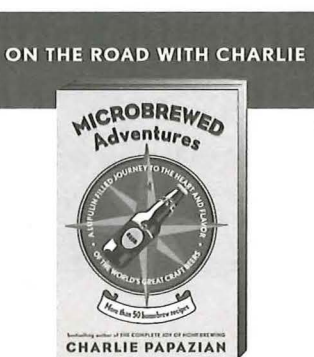
The "liquid bread" doppelbocks historically brewed by monks during Lent may have been sustaining, but modern versions exhibit a fine balance between full, smooth flavor and alcohol warmth that keeps them both drinkable and satisfying. Pale versions, as strong examples of the helles bock style, may accordingly have higher levels of noble hop aroma and be

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Category 5 Bock

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slightly drier in the finish. Original gravities are typically in the 1.072-1.096 range, though there technically is no upper limit, and finishing gravities are around 1.016-1.024+.

Eisbock is as much a brewing methodology as it is a subcategory of a beer style. The goal is to take a smooth, clean bock or doppelbock and remove some of the water content (and sometimes in the process, any undesirable off-flavors) in order to concentrate the beer. The resulting beer should be very smooth, alcoholic but not harsh, extremely malty but not cloying, with a rich emphasis on malt. Some pruny or grape-like fruit flavors may be present. Legs may form on the glass, as with a port wine, and alcohol content may also negatively affect head retention.

Again, original gravity has no upper limit, but is usually in the 1.078-1.120+ range, and finishing gravity is usually around 1.020-1.035+. Of course, it may take a few extra calculations to determine final alcohol content with a hydrometer after freezing and ice removal, but most examples are in the 9- to 14-percent abv range (though some commercial examples contain as much as 33 percent!).

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



Ding!

Ding!

Ding!

Make way for the Wormbulance!

Who is the pilot of this salvage-yard find turned earth resuscitator?
That would be our friend John, self-proclaimed soil pig and worm man.
His never-ending quest: To lift the lowly worm up from the dirt and into its rightful claim of eco-superhero.
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It's all right now, for I am here.

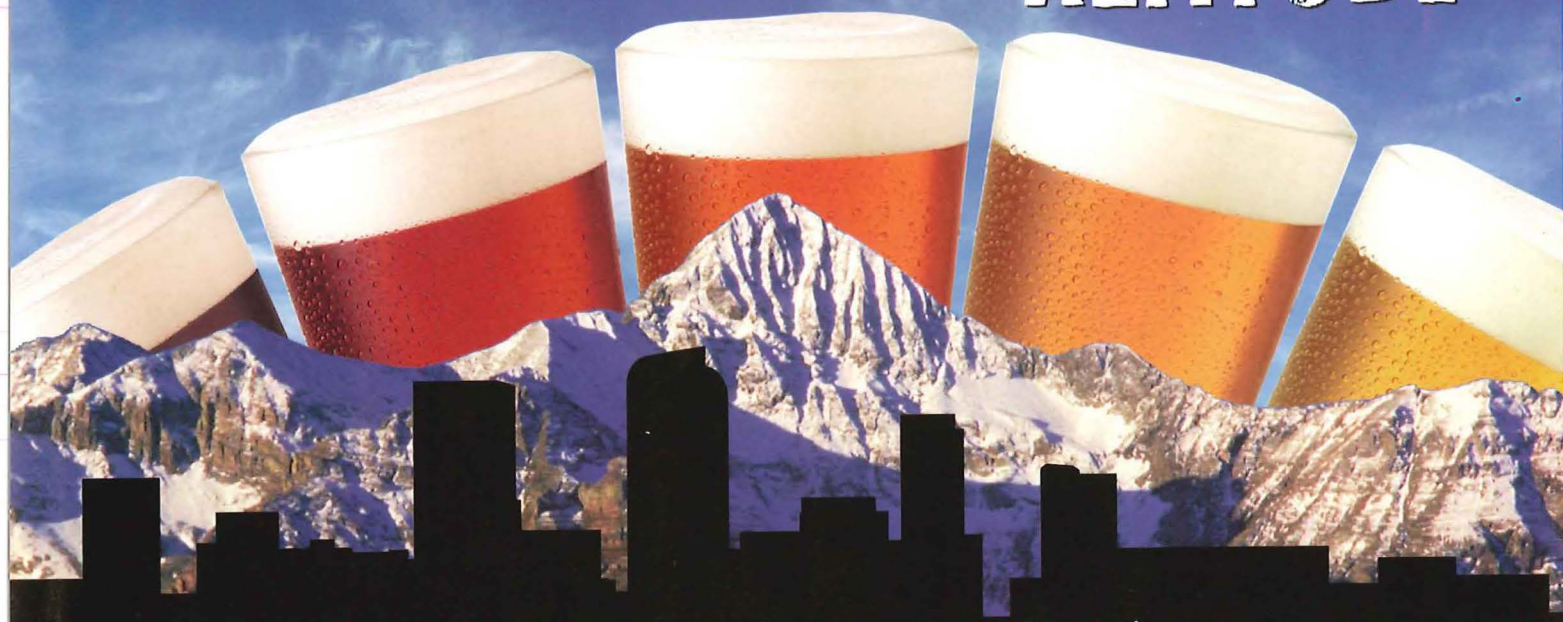


HANDBOOK OF CHEMISTRY AND PHYSICS

HANDBOOK OF CHEMISTRY AND PHYSICS

39 PHY FOR (Continued) 71 378 PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS (Continued) 421 187 PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS (Continued) 2

HOMEBREWING *with* ALTITUDE



AHA National Homebrewers Conference 2007

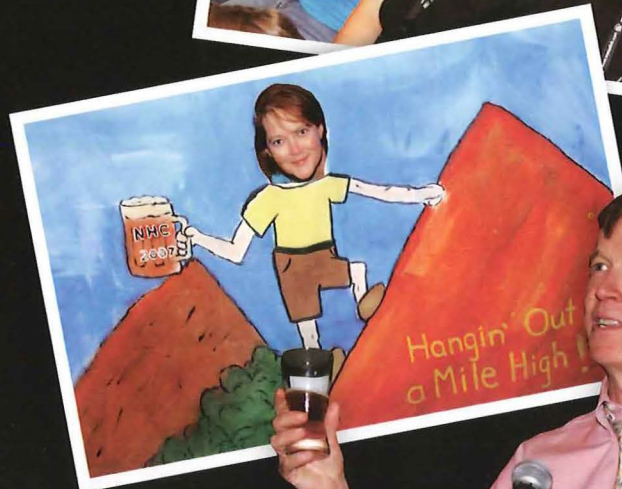
BY JILL REDDING

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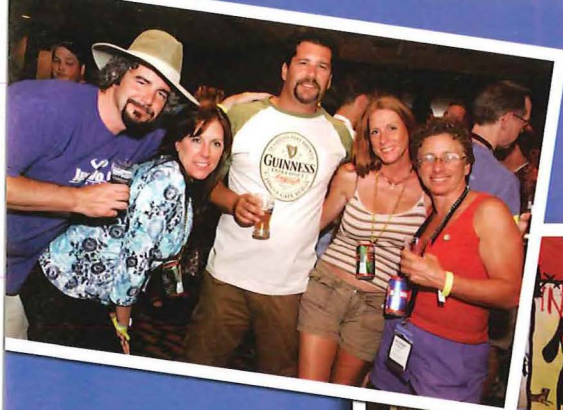
Ales with an altitude, anyone?

More than 820 homebrewers from across the nation converged on Denver June 21-23 for the 29th American Homebrewers Association's National Homebrewers Conference and accompanying National Homebrew Competition to toast the best in amateur brewing. A record 5,052 entries poured into the competition, making it the largest beer competition in the world.

"The passion and enthusiasm that homebrewers have for this hobby is great to see," said AHA director Gary Glass.







The organizing committee, which included local homebrew clubs Hop Barley and the Alers (Boulder), Keg Ran Out Club (Broomfield), Foam on the Range (Denver), Liquid Poets (Fort Collins) and the High Plains Drafters (Cheyenne, Wyo.) put together a stellar four days of homebrewing activities including seminars, pre-conference events, Pro Brewers Night, the always popular Club Night and the awards banquet for the competition.

Committee co-chair Jim Homer has attended all but one of the 29 AHA National Homebrewers Conferences. "I come every year for the friends I've made that I get to see year after year," he said.

Pre-conference events included several organized tours of breweries in Boulder County, Fort Collins, Denver and Golden. On Tuesday evening there was a beer-paired dinner at the Cheshire Cat Brewery and on Wednesday evening, Breckenridge

Brewery hosted a beer and barbecue paired dinner with Lucy Saunders, author of *Grilling with Beer*.

The conference officially kicked off on Thursday with an opening toast from Denver Mayor John Hickenlooper, who started the Wynkoop Brewing Co. in a then-rundown area of Denver that is now known as Lower Downtown in 1988.

"I remember how excited he was about all the oak behind all the crud," said AHA founder Charlie Papazian, who introduced Hickenlooper. "He was imagining a great brewery."

The engaging Hickenlooper, who started homebrewing in 1971, said "Not every conference in Denver gets an official mayoral welcome, so you guys are special." Hickenlooper talked about opening the Wynkoop ("I couldn't even get my own mother to invest," he joked) and also toast-

ed the "creativity, passion and beauty created by artisans everywhere brewing beer."

As usual, seminars covered a broad range of topics geared for both beginner and seasoned homebrewers. Vinnie Cilurzo of Russian River Brewing Co. in Santa Rosa, Calif. presented a talk on Brewing Sour Beers at Home, including his "Basic Rules of Brewing Funky Beer." Chris Graham of Beer, Beer and More Beer presented a session on Tricking Out Your Home Brewery, while Lauren Salazar of New Belgium Brewing Co. offered a Beer Flavor Evaluation of Four Common Off-Flavors.

On Thursday evening, attendees gathered for Pro Brewers Night, themed "Mining for Beer," with breweries such as Great Divide, Flying Dog, Firestone Walker, Russian River, Dogfish Head and Oskar Blues pouring their creations. Several brewmasters, including Cilurzo and







Firestone Walker's Matt Brynildson, worked behind the taps.


Seminars continued on Friday and Saturday, and New Belgium brewmaster Peter Bouckaert gave an inspiring keynote address on Friday centered on beer styles (see the Editor's Desk on page 4), talking about how he takes a holistic approach to designing beers. "I refuse to read about style guidelines," he said. "I am trying to create a piece of beauty and nothing else."

His talk, which included amusing parallel anecdotes about the color of his house and his homeowners association, sparked much discussion for those in attendance.

Between talks, and into the late hours, the hospitality suite served a rotating collection of beers from several clubs. On Friday night, the clubs were in the spotlight for the famous Club Night, where homebrew clubs from across the country set up themed booths, dress in costumes and serve up their latest creations. Foam on the Range's elaborate "Groove Room" was a

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hit, along with the barbecued ribs dished up by the Kansas City Biermeisters and the 16 taps (including oyster stout) available at the Austin Zealots' booth. Dreadlocks and tie-dye were the uniform of choice for Hop Barley and the Alers members. Foam on the Range was the attendees' choice for best in-state club, while best out-of-state club went to CARBOY of North Carolina.

Meanwhile, judges were kept busy with the 701 entries in the National Homebrew


Competition that advanced to the second round. Finally, it was time for the Grand Banquet on Saturday night and the long-awaited announcement of the winners of the prestigious National Homebrew Competition, with more than 600 people in attendance for the banquet. Jamil Zainasheff of Elk Grove, Calif., won the Ninkasi Award as the winningest brewer in the second round, while the Homebrewer of the Year title went to Richard Skains of Rocky River, Ohio, for his Best of Show beer, an alder-

smoked bock with chipotle peppers. Steve Fletty of Falcon Heights, Minn. won the Meadmaker of the Year award and the Cidermaker of the Year title went to Joseph Franconi of Red Hook, N.Y.

The Saint Paul Homebrewers Club of Saint Paul, Minn., upended the Quality Ale and Fermentation Fraternity, which had won five straight, for the Homebrew Club of the Year title. For a complete list of winners, see page 30.

"It was exciting to watch everything fall into place," said committee co-chair Bob Kauffman. "The organizing committee worked hard to put everything together."

Next year's conference is scheduled for June 19-21 in Cincinnati, Ohio, and tentative pre-conference plans include a tour of Kentucky bourbon country. It's sure to be another AHA conference you won't want to miss.

Jill Redding is editor-in-chief of Zymurgy. 

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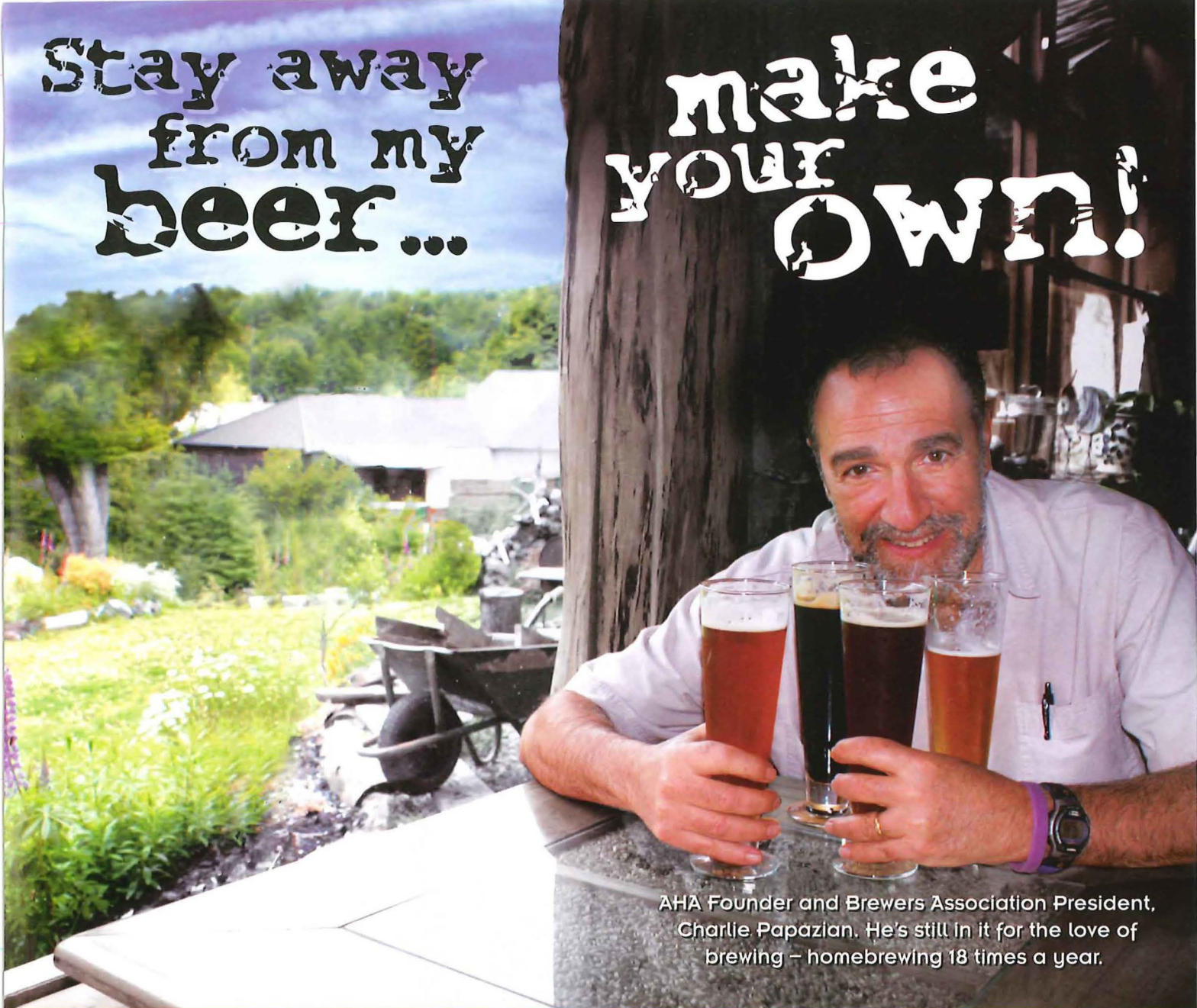
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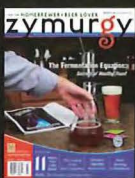
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Homebrewing

Tricks of the Trade

By Ted Hausotter

Over the years I have brewed a lot of beer. I started homebrewing just out of high school back when hops were brown, if you could get them. During the last 24 years and numerous batches, I've done it the hard and easy way. I hope you find a few new tricks based on what I've learned.

Buckets

Good beer can be made in a bucket. I know a brewer who made the winning Kolsch at nationals last year in a bucket. Keep it clean and rack as soon as the beer is done. Unlike glass carboys, oxygen can permeate through a bucket. This starts to be a problem once fermentation is complete.

Airlocks

- I like the S style locks. When you put a warm beer in the fridge to cool off, this style of lock will not suck the sanitizer solution into the beer as the thermal contraction of the wort draws air into the carboy.
- Use your pump to push hot cleaner through your S style airlocks to clean them. I take the return hose off my counterflow chiller and put an airlock on the end of it. As I run cleanser through the chiller, it then goes through the airlock and will usually remove the dirt.
- Use a rubber boot style cover (sometimes called mustung caps) or a carboy cap. Unlike the standard rubber stoppers, these go over the entire head of the carboy, sealing on the outside of the neck. It eliminates the ring around the opening of the carboy that crud always ends up in.

Brass and Copper Equipment

- Brass and copper should only be used for non-fermented wort. Once alcohol is present make sure to use stainless steel, glass or good quality plastic. I know many of you use copper racking canes. After each use it comes out shiny clean. While the flavor change will be minor from its use, it is detectable, adding a harshness that detracts from the pure enjoyment of your creations. In the past, I had brass valves on a counter pressure bottler. I could taste the difference when I switched to stainless valves. It was smoother, less harsh and tasted more like kegged beer. It also increased my competition wins.
- Stainless steel replacement valves are expensive. eBay has great deals on stainless steel valves. You should be able to find them for under \$20; I just bought three for \$35.

Boil Kettles

- If you use a converted beer keg* for a boil pot, most will have holes in the shroud located on the bottom. By plugging them, when you boil over your kettle, it will stop wort from running into your burner.
- When you have a kettle welded, use a coupling. This allows you to screw a valve on the outside and screens on the inside.
- Sight gauges give you an accurate idea of volume and are highly recommended. They work best if they are not attached to the valve, as it will potentially suck air if you mash with it. The liquid level also jumps around when you attach them to the valve outlet. I like to place them 45 degrees apart from the valve. This allows room for two pots to sit side by side on the burners. The easiest way to hold the top of the sight gauge is with a washer welded onto the keg, saving expensive hardware. Borosilicate glass gauges are available through industrial suppliers like McMaster Carr. High temperature plastic hose can also be used; it is more forgiving than glass.
- The valve is only a few inches away from open flame, but will not get hot enough to sanitize it and the wort in it. Stainless steel has a very poor thermal transfer rate. Be sure to wash it thoroughly and flush it out during brewing.

** Keg theft is a major issue for the brewing industry. Be sure to get permission from the brewery before converting kegs for homebrewing.*

Bottles

- Soak your bottles in a good cleanser and hot water for a half hour. I use PBW and the labels will usually fall off.
- After washing your bottles, hold them up to a light. If you see crud, repeat. The bottles should be clear with no scum inside. Look closely at the neck and the bottom.
- Store clean bottles upside down in case boxes and dirty bottles upright. This way you know what is clean and what is dirty.

Counterflow Chillers

- Pump sanitizer through them after you clean them.
- Push out your sanitizer with CO₂. Your other choice is to push it out with beer that you are chilling, if it does not gravity drain. In my system, sanitizer mixes with beer and I lose 1 quart of beer if I push with beer.
- Add a thermal well to the chiller. This allows you to adjust temperature by adjusting flow rates. You can make one by adding a T fitting right before the beer outlet side of the chiller. Add some straight and 1/2" female pipe thread to the tube adapter, adjusting the length so your male threaded thermometer will touch the liquid flow. A word of caution: thermal wells must be hand cleaned. They are usually filled with air, so sanitizer will not always get to all surfaces. I did have a very minor infection that was caused by bacteria in a thermal well.
- Save counter space by wall mounting them.

Hose

- Use good quality beer line. I personally like Tygon. Better hose or tubing will be dairy 3A sanitary standard or UL listed for beverage use. Your local hardware store is not the place to buy plastic hose and tubing even for CO₂ lines. It usually will have a vinyl flavor, especially if beer sits in the hose for any period of time. While minor, it removes the winning edge.
- To expand hose to fit over a metal barb, heat the barb with a propane torch. Slide the hose over the barb. The heat will soften the plastic tubing so it can slide over the barb easily. It is best to start with a little heat first and work up so you do not melt the hose.



Cleaners

- Cleaners work best in hot water. One time I left a 15-gallon fermenter for a few years. We're talking about caked on, baked on crud. It took over two hours to clean and would not clean with cold water. I had to heat water to fill the fermenter to get it clean. With hot water the process went fast.
- Bleach can eat stainless steel. It is stainless, not stain proof.
- A flashlight is your most important tool to check cleanliness.

Sanitizer

- Store sanitizer after use in extra kegs.
- Put sanitizer in a squirt bottle to sanitize keg connections, etc.
- The sanitizer will slowly eat the plastic parts of the squirt bottle, making them difficult to work. Squeeze the plastic bottle to force liquid out of the nozzle to start the prime.
- Flame it! Nothing lives in a flame, but do not use it on O-rings, plastic and other materials that may melt when exposed to flame.

Hydrometer

- Hydrometers are never calibrated properly. To calibrate, place in distilled water at 60 degrees. It should read 1.0000. If it is higher, add some tape or fingernail polish to add weight to drop it down. Conversely if it is reading less than 1.000 take a file and remove some glass on the bottom of the hydrometer. Once it reads 1.0000 add a coat of fingernail polish to seal the end. Some hydrometers are calibrated at higher temperatures. Review yours prior to adjusting.

Burners

- Clean out the inside of the burners by sandblasting. You will know they need cleaning if you cannot get good, even blue flame. After many boilovers, my burners were clogged and would not come clean any other way.

Pumps

- To prime the magnetic drive pump you need to let the air escape out of the hose. It is a simple concept but after a few hours of brewing it is very easy to miss. The most important aspects of pumps are that you cannot pump air. I find it is easier to prime the pump if you have the pump lower down and turn on the kettle valve. The outlet side is normally connected from sanitizing and will need to be removed to let the air out of the line. If that does not prime it, simply lowering the discharge hose, waiting a moment and then raising it will work the air out of the line. It might need to be repeated a few times. From my experience, if this does not work, hops are plugging your valve. By pushing CO₂ through the valve, it can be cleared of obstructions.

Kegging

- Replace all soda O-rings. I have used 7-Up kegs and gotten away with it, but Sprite is too strong flavored and the O-rings will flavor your beer. In the past, I've picked up the flavor of root beer in a porter from a tap that once had root beer in it.
- Small O-rings are available in packs of 100 for a few dollars. The O-ring on the outside of the fittings is dash #109. The inside O-ring under most out tubes and CO₂ tubes is dash #111. These are available from bearing or industrial stores or your local homebrew supply shop.
- Always replace the O-rings when they are cracked. All that is keeping beer in the keg when you have the quick disconnects attached is that O-ring on the outside of the keg fitting. It is not unusual for the entire keg to leak out. Drinking beer that collected on the bottom of the fridge doesn't taste good and will definitely tarnish your image!
- If your poppets leak, try putting (two) O-rings on the tubes going into the keg. This puts a little more pressure on the poppets and may help them seal.
- Large O-rings can be glued together from bulk O-ring cord. It is cut to length and super glued together. It is critical to cut the cord squarely. I found it easiest to make a cutting jig that holds the cord through a hole and have a slot to cut the cord using a razor blade knife. Take care in gluing them together so they line up close to perfect. The biggest advantage of making your own is that you can use 5/16" or 8 mm metric cord stock that is larger than the standard 1/4" diameter. It helps seal those problem kegs. Practice first to get the technique.
- If the big O-ring leaks, try getting it wet first. Inspect the O-ring at the leak point; look for flaws in the surface. To find the leak point, spray the seal with foaming sanitizer like Star San. It should not have any bumps, dents, etc. You can rotate the O-ring so the leaking point is next to the lid feet. It has the most pressure at this point and will help reduce leaks.
- Add card paper, washers or other hard items under the lid feet to put more pressure on the big O-ring to stop chronic leaks.
- Label your kegs with wire-on shipping tags. I like to put the tags on the outside. Drill a small 1/8" hole in the handle for the wire.
- Mark the gas side of your kegs. This keeps you from hooking up backward. The quick disconnects, as they wear, will fit on either side. Fingernail polish is convenient for color-coding the gas side of the keg.
- Store your kegs cleaned, sanitized, purged and under pressure. This way if they leak you will find out before you put beer in.
- Hot water will remove most of the stickers that the soda companies put on the kegs. White gas or Goof Off will take off any residue.

Boiling

- Skimming off the top foam will usually help reduce the potential for boilover.

Carbonating

- It takes a few weeks for the final pressure to stabilize. When force carbonating, shaking or rocking the keg will speed up the uptake of CO₂. The easiest way to shake the keg is to place the side of the keg on your thigh and use it as a pivot point to shake the keg up and down. Keep it on your thigh and move it in an up and down motion. Add more CO₂ as necessary.

Dry Hopping

- Boil hop bags with weights to sanitize. I use marbles or stainless steel washers to weight the hop bags down. Add the hop bag right to your keg.

Sparging

- Most beer recipes make this a volume-collected process. It is a sugar-collected process. Taste the wort. If it is sweet, keep sparging. It is a lot faster than cooling the wort and checking the gravity with a hydrometer. When it starts to taste strawlike or not very sweet, check it with a hydrometer. Stop at 1.010 gravity or higher. I like to stop on my malty and black beers at 1.015. You can also check the pH and should not sparge at levels higher than 6. You will find that different malts release their sugars at different rates. If you use a set amount of sparge water and do not check your gravity, you will either leave sugars behind or collect extra tannins from the husks leading to astringent and phenolic flavors.

Carboys

- Big beers always need 1 gallon of headroom or more. I just lost 1.5 gallons of barleywine fermented in a 5-gallon carboy with 1 gallon of headroom. If you know your yeast is raring to go, give it room. A 6.5-gallon carboy is best for primary fermentation.
- Keep some 2.5-gallon carboys around so if you end up with a gallon extra, you can ferment it.
- When you think it is clean, hold the carboy up to a light and look at every square inch of the surface. You should not find any spots in it. When I first started doing this every carboy was dirty. While it did not cause flavor issues from contamination, it took the winning edge away. Look closely at your carboys. You will be humbled.



Racking

- I add 3 psi CO₂ to my glass carboy with a carboy cap. This pushes the beer out of the carboy, starting the flow and speeding up the process. You can also push it uphill. Care must be taken to ensure that you do not blow up a carboy. I have used 3 psi and have not had a problem. The carboy cap acts as a pressure relief valve to prevent over-pressurization. This method also reduces oxidation.

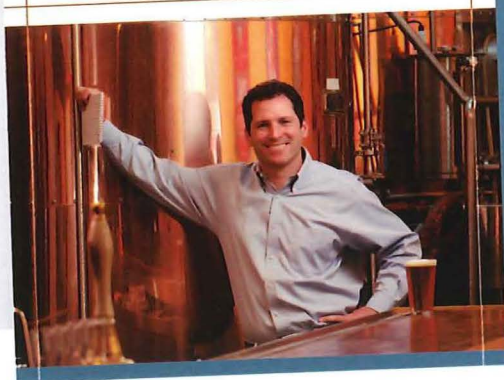
Oxidation

- By using the following steps, refrigeration, and careful wort production, it is possible to keep low alcohol beers for years without oxidation. I recently sent a one-and-a-half-year-old Munich Helles beer to a contest and won first place.
- Store kegs purged with CO₂. I add a couple psi to the keg and then vent it off, repeating 10 times. Put the CO₂ on the outside to send it to the bottom and be sure to also vent off through the gas fitting. Using this method, I have put 1 gallon of beer in the bottom of a 5-gallon keg without any noticeable oxidation.
- Purge bottles and kegs with CO₂ prior to filling.
- Remove air from your racking hose when racking to a keg by loosening the screw plug on your beverage-side quick disconnect keg fitting. Let the air vent out and tighten when beer comes out. Then attach to the keg you are racking to.

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6 Point Amber Ale

Ingredients for 5 U.S. gal

6.0 lb	(2.7 kg) two-row malt
1.5 lb	(0.7 kg) Munich malt
0.5 lb	(0.2 kg) wheat malt
0.375 lb	(170 g) Crystal 40 malt
0.375 lb	(170 g) Caravienna malt
0.375 lb	(170 g) Victory malt
0.75 lb	(340 g) flaked barley
0.125 oz	(3.5 g) Amarillo hops 9.6% alpha acid 90 minutes boil
1.0 oz	(28 g) Amarillo hops 9.6% alpha acid 30 minutes boil
1.25 oz	(35 g) Amarillo hops 9.6% alpha acid 15 minutes boil
1.0 oz	(28 g) Amarillo hops 9.6% alpha acid 0 minutes boil (flame out)
	Wyeast 1028

Original Gravity: 1.057

IBU: 42

Efficiency: 80%

Directions

Mash in at 152° F (67° C) until conversion. After boiling, chill to 68° F and pitch yeast. Ferment at 68° F.

Miscellaneous

- Save your hydrometer test wort (prior to fermenting) by freezing. You can use it for yeast starters.
- Use a bottle clamp for counter pressure bottle filling. This allows you to let the foaming beers sit while you go and drink a beer till it has settled down.
- Weigh out all of your hops at the same time. I put them in pint cups. This way you can start cleaning up during the boil.
- Wort-spoiling bacteria do not fly; they take a ride on dust particles, wind currents and flies. Placing a hood over your boil pot helps draw away any airborne bacteria during chilling.
- Put a sanitized lid over your beer when chilling.

Ted Hausotter is an award-winning home-brewer from Baker City, Ore. and an assistant director of the Continuing Education Program of the Beer Judge Certification Program.

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National Homebrew Competition Winners



HOMEBREWER OF THE YEAR—RICHARD SKAINS

ROCKY RIVER, OHIO



Homebrewer of the Year Richard Skains emulates professional brewers in his equipment, ingredient quality standards and his insistence on using large quantities of the freshest, most viable yeast he can find.

"Using tri-clamp fittings and butterfly valves is probably one of the best upgrades I have made to my system," he said. "The sanitary fittings just make it much easier to produce clean stable wort every time. In addition to producing clean stable wort I always make sure I'm using quality ingredients. Fresh, healthy, viable yeast is one of the most important to me. I will drive an hour or more sometimes to acquire fresh, healthy yeast." These three things have allowed him to produce consistently clean beer that has obviously impressed the judges at the NHC to such a degree that he walked home with the award for the Best of Show beer for 2007 for his Chipotle Pepper Alder Smoked Bock. He also has a homebrewer's gift for innovation and gadgetry, and designed a brew system with plenty of bells and whistles. "I use a two-tier system with a grant and a pump. The grant allows me to run nice clear wort to the kettle," he said. "It also has a float switch so the wort moves over to the kettle by itself and I can go eat lunch. I designed the system myself and

each of the vessels uses a 1.5" sanitary fitting."

While art is always part of the equation for brewers, it's obvious that the science is what motivates Skains to brew.

Homebrewer of the Year
award sponsored by



MEADMAKER OF THE YEAR—STEVE FLETTY

FALCON HEIGHTS, MINN., SAINT PAUL HOMEBREWERS CLUB



Steve Fletty won the coveted Meadmaker of the Year award with a recipe he's spent a lot of time developing over the years. It was originally inspired by a Riesling mead he tasted several years ago. "I started making meads after I took our local BJCP class in 2002," he said. "The Twin Cities has had a strong mead-making community for some time. Of the 70 meads I sampled that night, I thought all but two of them were wretched, cloyingly sweet. Two, however, knocked my socks off. One was a commercial Riesling piment that was a refreshing blend of sweet honey and acidic Riesling. A lovely mead. It took me about three years and three batches to get my version of it right."

In fact, Fletty's ability to improve on meads he's tasted and enjoyed has netted him quite a few awards. "The other mead I liked from that night was a mesquite chipotle mead. A wonderful balance of sweet and hot, pleasure and pain. My first goal was to make something like that. I bothered the guy who made it for his recipe. My version ended up winning a gold medal. That was my first batch and it is about five years old. I still have a few bottles I save for special occasions."

Fletty now makes 10 to 12 meads a year, and has learned some valuable techniques from veteran mead makers like Ken Schramm. Two techniques in particular stand out. "First, put your fruit in the primary. After meeting and talking to Ken a few years ago I was converted to this method. I got to taste his Heart of Darkness mead, which was a blend of cherries and black currants and was fermented with all the fruit in the primary. The Heart of Darkness was unlike any mead I'd ever tasted. Simply amazing. It was like a big, complex chewy cabernet sauvignon or zinfandel. Huge, fruity, slightly sweet with great depth and complex fruit and slight sweetness. It changed the way I made mead. Adding fruit to the primary gives your yeast more nutrients and shortens the primary fermentation. It also gives you much better fruit flavor and not the raw fruit, one-note character you get from adding fruit in the secondary."

His second bit of advice also pertains to providing sufficient nutrition for yeast. "Staggered Nutrient Additions. If you're going to do traditional meads, using the SNA method will speed up the fermentation. There is absolutely no need for months-long primary fermentations if you use these methods and pitch enough yeast." Other Twin Cities-area meadmakers have also inspired Fletty. "People like Curt Stock and Gary Sinnen along with Ken Schramm and his book have helped me improve." His enjoyment of making mead clearly shows, and there's nothing to indicate he will stop finding creative approaches to making mead, now that he's won the NHC's Meadmaker of the Year. "The thing I like about making mead is that there are really no limits other than your imagination."

Meadmaker of the Year
award sponsored by



CIDERMAKER OF THE YEAR—JOSEPH FRANCONI

RED HOOK, N.Y., HUDSON VALLEY HOMEBREWERS

Cidermaker Award
sponsored by



Joseph Franconi was inspired to create hard cider when his parents began hosting cider pressings at their house. Bruce and Gloria Franconi were already known for their excellent ciders, as each had won NHC Cidermaker of the Year award on separate occasions: Gloria in 1998 and Bruce in 2004. So it seems only fitting that their son Joseph should win the same award in 2007.

To Joseph, the social aspect of making and enjoying cider holds much of the appeal. "There is nothing like drinking a cool glass of freshly pressed apple cider and comparing it to hard ciders people are sharing." Another key element in producing good cider is patience. "The award-winning cider was pressed back in 2002, and fermented till the fall of 2003 where it was stabilized and balanced, and then placed in a soda keg for safe keeping,"

he explained. "The cider was then hidden away in my parents' basement where it stayed at a steady temperature of 55 degrees for the next four years. I recently tried the cider and discovered that it had developed a horsy characteristic (*Brettanomyces*) which is perfect for an English cider."

Another very important contributing factor is finding the right variety of apple. All good cider makers know that the best cider apples have a great balance of astringency, acidity and sugar. Because of the extra acidity, a good cider apple is not always a great eating apple. "The key apple in the winning cider is the elusive Northern Spy. As it may be known, Northern Spy apples possess a rich, aromatic subacid flavor that in turn contributes agreeably to a complex flavor and aroma of hard ciders. The more complex the apple, the more enjoyable and noticeable the flavor and aromas will be." A sweeter, eating variety will produce a cider with lots of alcohol, but not much flavor. And depending upon how the apples are pressed and stored, the juice may not ferment at all.

"I do not recommend buying cider from a grocery store or your local cider pressing facility unless you are sure they haven't added any preservatives." Fortunately, a lot of people in the Hudson Valley know apples and cider making very well, and Franconi said he gained much of his experience as a cider maker from his local homebrew club as well as his parents.

NINKASI AWARD WINNER—JAMIL ZAINASHEFF

ELK GROVE, CALIF., QUAFF

Ninkasi Award
sponsored by



Jamil Zainasheff credits a large part of his success as a brewer to his balanced approach between science and art. Of course, there are plenty of basic skills one must rigorously adhere to as well. "After sanitation and using plenty of clean, healthy yeast, I would list fermentation temperature control as having the biggest impact on results," he explains. "More important than going from extract brewing to all-grain." But along with the nuts and bolts of brewing good, clean beer, he feels that there must also be a certain degree of passion. "I used to be focused strictly on the science end of brewing and my beers turned out well. Then a friend of mine, Dave Sapsis, taught me to look at brewing more as an art or a passion. I went a bit too far that way and my beers suffered for a bit, but then I think I found my balance somewhere in the middle and my beers were better than ever before. "This is one of the things I really love about brewing. Its secrets do not succumb solely to the scientific or artistic approach. Sure, you might be able to make one or two

great beers focused on one approach or the other, but to brew many different beers at a high level of quality, you need to understand both sides of the equation. That can be very challenging."

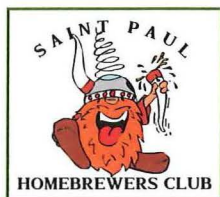
Zainasheff brews 5-gallon batches on a MoreBeer 1550 brew system, and prefers the cooler weather in the fall to brew "when I can watch football at the same time," he says. When asked about his favorite brewing gadget, he replied, "It may not be a 'gadget,' but I would never brew without the high quality liquid yeasts from White Labs and Wyeast." His favorite style of beer is not so hard to pin down—like many veteran homebrewers, his favorite beer tends to be the one he's currently brewing and/or drinking (see Category 17). "I've brewed all of the BJCP recognized styles and I can honestly say I love every one of those styles, when it is well brewed. I suppose if I had a favorite right now it would be Flanders red. The thing that makes this beer so great and similar to Rodenbach is the incredible Roeselare blend from Wyeast."

Zainasheff won the NHC Ninkasi Award for the second time, and his winning recipes will be available in an upcoming book due out this fall, *Brewing Classic Styles: 80 Award Winning Recipes Anyone Can Brew* (co-authored by John Palmer), courtesy of Brewers Publications. More information and lots of other brewing resources, including his columns and articles for this and other publications, can be found at his Web site, www.mrmalty.com.

HOMEBREW CLUB OF THE YEAR—THE SAINT PAUL HOMEBREWERS CLUB

SAINT PAUL, MINN.

Club Award
sponsored by



The Saint Paul Homebrewers Club was founded in 1998 by Gary Hipple and Curt Stock. For the first few years the club was made up of a few people who got together to brew and share homebrews, but soon they were gathering new members, many of them young and motivated. Kris England became club president, and through his promotional tactics the club grew to more than 60 members by 2004. The club's main focus is helping people make better beer at any cost. Stock says, "If you bring a beer for people to try, you better be ready to hear what people have to say about it. Flaws are pointed out first. Then members are taught how to recognize the flaws and, more importantly, how to fix them."

Quite a few members are very competitive and enter competitions all around the country. In 2004, the handful of members who entered the National Homebrew Competition landed the club in fourth place in the AHA Club of the Year race. Another fourth-place finish in 2005 fueled a more vigorous attempt in 2006, which moved the club into second place behind QUAFF. By this point the club had grown to more than 100 paid members including one active member from Missouri and another from Ohio.

The club's goal for 2007—to beat QUAFF in the AHA Club of the Year competition and put an end to the dynasty. A spreadsheet was formulated and club members signed up for categories they wanted to enter. Members brewed, tasted, re-brewed, tasted and brewed again. Stock and other club members helped many fine-tune their recipes. They were able to cover each category with 32 members entering a total of 286 beers in the first round. With many great beers and plenty of luck, the club advanced 58 beers to the second round of the NHC. Combined with a couple of Club Only Competition wins and a good showing in Denver, the club's point total was enough to surpass the reigning champions.

2007 NHC Gold Medal Recipes

by Amahl Turczyn Scheppach

As this annual special edition of Winners Circle unlocks the secrets to the gold medal recipes from the National Homebrew Competition, we again caught up with NHC director Janis Gross for a summary of this year's competition highlights. The 2007 competition was the biggest ever, with 5,052 entries from 1,172 homebrewers.

Zymurgy: How did the 10 regional sites go this year? Which sites were the busiest in 2007?

Janis Gross: In last year's competition there was a large disparity in the number of entries in the eight U.S. regions in the first round; 372 (Northwest Region) to 704 (South Region). The AHA Governing Committee's Competition Sub-Committee discussed the load-balancing problem at length after the 2006 competition, and this year we tried realigning the regional boundaries in the hopes of making the loads a little more balanced among the regions. Luckily, the realignments did exactly what we wanted them to do; the entries ranged between a low of 499 (Southwest Region) and a high of 660 (Great Lakes Region) this year.

The number of entries per region changes from year to year, especially with regard to the location of the National Homebrewers Conference, so the Competition Sub-



NHC Director Janis Gross joining in the fun at Club Night during the National Homebrewers Conference.

Committee will revisit the load-balancing issue over the next six months in preparation for the First Round of the 2008 National Homebrew Competition.

Zymurgy: Looks like the NHC got some stellar sponsorship again this year. What were some of the bigger awards and prizes donated?

JG: I was amazed at the number of prizes donated this year; some were even donated at the conference. Three different companies donated conical fermenters, there was a nice selection of brewing ingredients as well as sanitizing supplies, and we even had a firkin full of beer! I was especially excited to have a sponsor for the cider categories and Cidermaker of the Year this year.

Zymurgy: As director, what were the highlights for you this year?

JG: I'd say the highlight for me was completing the second round judging in one day. I, frankly, was a bit skeptical that we'd actually be able to pull that off, but we did and I'm still tickled by it. The organizational staff for the competition was one big reason for accomplishing this, but the fact that we had enough judges and stewards to fill tables for 13 categories each session ensured our success. I can't thank all the volunteers enough; they were awesome!

Zymurgy: This year the NHC received 5,052 entries from 1,172 homebrewers, up significantly from last year's numbers. What do you think is driving this escalation, and do you think it will continue?

JG: Last year we introduced online registration for the competition, but not all of the regions used the system. This year all nine of the U.S. first round sites used the same online registration program, making it easier for brewers to enter. I think we will hold steady next year, if not grow a little more. This is something the Competition Sub-Committee will be assessing this fall.

Zymurgy: How was the competition for clubs this year? Has QUAFF continued its dominance from last year?

JG: The big surprise for me was how competitive it was for the Club of the Year award this year. QUAFF and the Saint Paul Homebrewers Club were neck and neck coming out of the Club-Only Competition standings with QUAFF in front, then they were neck and neck coming out of the First Round of the Nationals with Saint Paul in front, and finally Saint Paul came out on top after the Second Round. It was quite a race, especially when you consider that the Ninkasi win-

ner (the winningest brewer in the Second Round) was a QUAFF member (Jamil Zainasheff).

In the end, the Saint Paul Homebrewers Club finished ahead of perennial powerhouse QUAFF with a final score of 258 to 212.

Interestingly enough, the AHA Governing Committee Competition Sub-Committee clarified an existing rule for how club points were counted this year. The new wording said, "a club may only receive points for a maximum of three awards per category regardless of region, the highest three awards shall be counted, not to exceed the 12-point maximum per category." This was designed to remove the impact of clubs having members in two or more regions, although the new rule didn't actually impact the winner this year. The points separating the top two clubs would have been slightly closer (276 to 242), but the Saint Paul Homebrewers Club would still be the 2007 winner of the Club of the Year Award.

Zymurgy: *We had a new online entry system and a streamlined score sheet for the judges this year. Have these proven to be successful changes?*

JG: The online entry system we used this year worked fairly well and we encountered only minor glitches. One problem we did encounter was brewers who had registered online but failed to print their bottle labels before the online registration system was closed. Once the online system was closed, no one could access their registration information, so they couldn't print out their entry labels. This is one of the items the Competition Sub-Committee will be addressing for the competition next year.

It's still a little too early to assess the success and/or impact of the streamlined score sheets used in the Second Round of the competition. We are in the process of sending out a survey to the judges for their reaction to using the score sheets, and this will be followed by a survey for the entrants to voice their reaction to the score sheets as feedback for their entries.



CONVERTING TO EXTRACT

Most all-grain recipes can be converted to extract recipes by substituting the base malt (e.g. pale malt or pilsner malt) with light malt extract. Multiply the pounds of base grain by 0.73 for liquid malt extract or by 0.60 for dry malt extract. Specialty grains can be steeped in water at 150° F for 30 minutes or so and rinsed with hot water. If you are doing a partial wort boil (as opposed to boiling the entire 5 gallons of a 5-gallon batch), you will want to increase your bittering hops slightly to make up for the increased concentration of the wort, which decreases hop utilization.

You can always ask your local homebrew supply shop owner to help you convert a recipe.

From my perspective, the score sheets were an integral part of the reason we could finish the Second Round judging in a day. Anecdotally, I heard from several judges who were thrilled with the new score sheet, and almost an equal number who were not thrilled with it, so I am looking forward to the responses we get from the surveys.

Zymurgy: *Are there any further innovations planned for next year's event?*

JG: I am very pleased with the Judges Reception that we started this year, and I would like to keep that event on Wednesday night next year in Cincinnati. I think it was an effective way of getting the judges checked in and getting everyone familiar with the new score sheets, in addition to having an educational program for the judges and stewards.

During this off-season we plan to investigate the feasibility of introducing online payment for the online entry system. From what I understand, that will be no small feat, but that's one of the possible innovations for next year. This is going to be a busy off-season!

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

Category 1: Light Lager



Gold Medal

Kristen and Orsolya England, Saint Paul, MN, Munich Helles, Saint Paul Homebrewers Club
[Untitled]
Light Lager/Munich Helles

Ingredients for 12 U.S. gallons (45.4 L)

25.0 lb (11.34 kg) Spitz malt
4.0 oz (113 g) Tettnanger whole hops,
4.7% alpha acid (1st wort)
Wyeast No. 2308 Munich lager
yeast
Forced CO₂ to carbonate

Original Specific Gravity: 1.050

Final Specific Gravity: 1.012

Boiling Time: 60 minutes

Primary Fermentation: 14 days at
50° F (10° C)

Secondary Fermentation: 3 days at
60° F (16° C)

Tertiary Fermentation: 14 days at
32° F (0° C)

Directions

Use a triple decoction mash schedule with rests at 95° F (35° C), 110° F (43° C), 144° F (62° C) and 158° F (70° C). Mash out at 165° F (74° C) for 10 minutes.

Judges' Comments

"Bitterness lingers a bit much; otherwise very clean. Excellent."

"Expert job! Please send me the recipe!"

"Nice, malty finish."

Runners-Up

Silver: Annie Johnson, Sacramento, CA, Standard American Lager, ESB (East Sacramento Brewers)

Bronze: Philip Denlinger, Monsey, NY, Dortmunder Export, Hudson Valley Homebrewers

Category 2: Pilsner



Gold Medal

Sponsored by BeerInfo.com

Greg and Liz Lorton, Carlsbad, CA, Classic American Pilsner, QUAFF
"Classic American Pilsner"
Pilsner/Classic American Pilsner

Ingredients

for 3 U.S. gallons (11.36 L)

5.0 lb	(2.27 kg) six-row pale malt
2.0 lb	(0.9 kg) flaked maize
1.3 oz	(37 g) Hallertau pellet hops, 4% alpha acid (70 min)
0.35 oz	(10 g) pellet hops, 4% alpha acid (15 min)
0.35 oz	(10 g) pellet hops, 4% alpha acid (2 min)
	White Labs WLP810 San Francisco lager yeast
0.5 cup	corn sugar to prime

Original Specific Gravity: 1.059

Final Specific Gravity: 1.024

Boiling Time: 70 minutes

Primary Fermentation: 12 days at 57° F (14° C) in glass

Secondary Fermentation: 21 days at 57° F (14° C) in glass

Directions

Begin with a protein rest at 119° F (48° C) for 5 minutes. Raise temperature to 153° F (67° C) and hold for 90 minutes.

Judges' Comments

"Hits the mark on flavor—well balanced. Subtle all the way."

"Makes beer noise when opening. Very well balanced."

Runners-Up

Silver: Ronald Mahan, Alexandria, KY, Bohemian Pilsner, Bloatarian Brewing League
Bronze: Steve and Dan Munch, Portland, OR, German Pilsner (Pils), PDX Brewers

Category 3: European Amber Lager



Gold Medal

Sponsored by How to Brew by John Palmer

Jason Green, Reno, NV, Oktoberfest/Märzen, Washoe Zephyr Zymurgists
"GB Marzen"
Oktoberfest Marzen

Ingredients

for 6 U.S. gallons (22.7 L)

10.0 lb	(4.88 kg) Belgian pale malt
1.5 lb	(0.68 kg) TF Munich malt
0.75 lb	(340 g) caramel Munich malt
0.25 oz	(7 g) Horizon pellet hops, 12% alpha acid (60 min.)
1.0 oz	(28 g) Hersbrucker pellet hops, 4% alpha acid (30 min.)
1.0 oz	(28 g) Hallertauer pellet hops, 4% alpha acid (15 min.)
	White Labs WLP 830 German lager yeast
	Forced CO ₂ to carbonate (2.5 vol.)

Original Specific Gravity: 1.051

Final Specific Gravity: 1.014

Boiling Time: 90 minutes

Primary Fermentation: 30 days at 52° F (11° C) in glass

Secondary Fermentation: 180 days at 34° F (1° C) in steel

Directions

Mash grains at 152° F (67° C) for 60 minutes.

Judges' Comments

"Initial sweetness that fades to a dry finish."

"I would pay money for this beer."

Runners-Up

Silver: Michael Pearson, Anderson, IN, Oktoberfest/Märzen, MECA Brewers
Bronze: Rory Petrik, Seward, AK, Vienna Lager, Great Northern Brewers Club

Category 4: Dark Lager



Gold Medal

Sponsored by Briess Malt & Ingredients Co.

Steve and Dan Munch, Portland, OR, Schwarzbier (Black Beer), PDX Brewers
[Untitled]
Schwarzbier

Ingredients

for 20 U.S. gallons (75.7 L)

20.0 lb	(9.07 kg) Weyermann Munich I malt
13.0 lb	(5.9 kg) Weyermann Pilsner malt
2.5 lb	(1.13 kg) Weyermann caramel Munich II
2.1 lb	(0.95 kg) Weyermann Carafa II
3.0 lb	(1.36 kg) Weyermann melanoidin malt
2.0 lb	(0.9 kg) Briess dextrin malt
3.25 oz	(92 g) Tettnanger whole hops, 4.5% alpha acid (90 min.)
2.0 oz	(56 g) Mt. Hood whole hops, 6.5% alpha acid (45 min.)
1.0 oz	(28 g) Tettnanger whole hops, 4.5% alpha acid (15 min.)
	Wyeast No. 2308 Munich lager yeast starter (1 gallon)
	Wyeast yeast nutrient
	Forced CO ₂ to carbonate

Original Specific Gravity: 1.055

Final Specific Gravity: 1.016

Boiling Time: 90 minutes

Primary Fermentation: 19 days at 52° F (11° C) in glass

Secondary Fermentation: 32 days at 54° F (12° C) in glass

Directions

Mash grains at 153° F (67° C) for 90 minutes.

Judges' Comments

"Some chocolate—good finish!"

"Finish with lingering roast/bitterness."

"Bitterness balances nicely. Starts sweet, finishes dry. Body might be a tad thick. Very nice! Excellent!"

Runners-Up

Silver: Ryan Thomas, Westminster, CO, Munich Dunkel, KROC (Keg Ran Out Club)
Bronze: Richard Skains, Rocky River, OH, Schwarzbier (Black Beer)

Category 5: Bock



Gold Medal

Sponsored by Washington Hop Commission

**Jamil Zainasheff, Elk Grove, CA,
Doppelbock, QUAFF
2007 Ninkasi Award Winner
[Untitled]
Doppelbock**

Ingredients

for 6 U.S. gallons (22.7 L)

4.0 lb	(1.8 kg) German Pilsner malt
14.0 lb	(6.35 kg) German Munich malt
2.0 lb	(0.9 kg) caramel Munich malt
1.43 oz	(40.5 g) Hallertauer pellet hops, 4.4% alpha acid (60 min.)
0.29 oz	(8.2 g) Hallertauer pellet hops, 4.4% alpha acid (30 min.)
	White Labs WLP 833 German Bock lager yeast

Original Specific Gravity: 1.086

Final Specific Gravity: unknown

Boiling Time: 90 minutes

Judges' Comments

"Yikes—rich malt flavor. No flaws, clean, very low bitterness."

"Complex maltiness with expected melanoidins. A definite sipper. Alcohol presence is very strong."

Runners-Up

Silver: Randy Scorby, Baker City, OR, Maibock/Helles Bock, Good Libations
Bronze: Jeffrey Swearingin, Tulsa, OK, Doppelbock, Fellowship of Oklahoma Ale Makers (FOAM)

Category 6: Light Hybrid Beer



Gold Medal

Sponsored by Cargill World Select c/o Cargill Malt

**Ramon Astamendi, San Diego, CA, Kölsch, QUAFF
[Untitled]
Kölsch**

Ingredients

for 17 U.S. gallons (64.3 L)

25.0 lb	(11.34 kg) Weyermann Pilsner malt
8.0 lb	(3.63 kg) white wheat malt
2.0 lb	(0.9 kg) Vienna malt
3.5 oz	(99 g) Hallertau whole hops, 3.8% alpha acid (60 min.)
0.5 oz	(14 g) Hersbrucker whole hops, 4% alpha acid (30 min.)
0.5 oz	(14 g) Tettnanger whole hops, 4% alpha acid (30 min.)
	White Labs German Ale/Kölsch yeast
	White Labs Servomyces yeast nutrient (2 capsules)
	Forced CO ₂ to carbonate (2.5 vol.)

Original Specific Gravity: 1.047

Final Specific Gravity: 1.008

Boiling Time: 90 min.

Primary Fermentation: 14 days at 62-64° F (17-18° C) in glass

Secondary Fermentation: 28 days at 38° F (3° C) in glass

Directions

Mash grains at 148° F (64° C) for 60 minutes.

Judges' Comments

"Sweet malt aroma, spicy hop, very light fruit. Good balance to the beer; very clean finishing. Fruitiness grows as the beer opens."

"Assertive maltiness from start to finish."

Runners-Up

Silver: Tom Whitehead, Chicago, IL, American Wheat or Rye Beer

Bronze: Matt Webster, Tequesta, FL, Kölsch

Category 7: Amber Hybrid Beer



Gold Medal

Sponsored by
Meusdoerffer c/o Cargill
Malt

**Philip Denlinger, Monsey, NY, Düsseldorf
Altbier, Hudson Valley Homebrewers
"JZ Alt"**
Düsseldorf Altbier

Ingredients

for 4.5 U.S. gallons (17 L)

5.63 lb	(2.55 kg) Pilsner malt
1.5 lb	(0.68 kg) Vienna malt
1.5 lb	(0.68 kg) light Munich malt
0.56 lb	(0.25 kg) caramel Munich malt
0.09 lb	(41 g) Carafa malt
0.25 oz	(7 g) Magnum pellet hops, 15.1% alpha acid (50 min.)
0.35 oz	(9.9 g) Horizon pellet hops, 9.4% alpha acid (50 min.)
0.5 oz	(14 g) Tettnanger pellet hops, 3.7% alpha acid (30 min.) Wyeast No. 1007 German ale yeast Forced CO ₂ to carbonate

Original Specific Gravity: 1.053

Final Specific Gravity: unknown

Boiling Time: 90 minutes

Primary Fermentation: 14 days at
62° F (17° C) in glass

Secondary Fermentation: 7 days at
38° F (3° C) in steel

Directions

Mash grains at 148° F (64° C) for 90 minutes.

Judges' Comments

"Fairly complex malt profile. Very nice—clean, well-balanced."

"Good balance for this style. Nice example. Reminds me of drinking in Düsseldorf."

Runners-Up

Silver: Ramon Astamendi, San Diego, CA,
Düsseldorf Altbier, QUAFF

Bronze: Richard Dobson, Gainesville, TX,
California Common Beer, Red River Brewers

Category 8: English Pale Ale



Gold Medal

Sponsored by St Louis
Wine & Beer Making

**Joseph Formanek, Bolingbrook, IL, Extra
Special/Strong Bitter (English Pale Ale),
Urban Knaves of Grain
"Bears Bitter"**
English Pale Ale

Ingredients

for 5 U.S. gallons (19 L)

8.0 lb	(3.6 kg) Maris Otter pale malt
1.0 lb	(0.45 kg) Cargill Special pale malt
1.0 lb	(0.45 kg) wheat malt
1.0 lb	(0.45 kg) DMC biscuit malt
1.0 lb	(0.45 kg) DMC aromatic malt
0.5 lb	(227 g) DMC caramel Vienna malt
0.25 lb	(114 g) DMC dextrin malt
0.25 lb	(114 g) DMC caramel Munich malt
2.0 oz	(57 g) DMC Special B malt
2.0 oz	(57 g) Goldings whole hops, 4.9% alpha acid (60 min.)
2.0 oz	(57 g) Willamette whole hops, 4.4% alpha acid (60 min.)
1.0 oz	(28 g) Goldings whole hops, 4% alpha acid (30 min.)
1.0 oz	(28 g) Fuggles whole hops, 3.9% alpha acid (30 min.)
0.5 oz	(14 g) Goldings whole hops, 4% alpha acid (10 min.)
0.5 oz	(14 g) Fuggles whole hops, 3.9% alpha acid (10 min.)
0.5 oz	(14 g) Goldings whole hops, 4% alpha acid (0 min.)
0.5 oz	(14 g) Fuggles whole hops, 3.9% alpha acid (0 min.) White Labs WLP 002 English ale yeast (1 L starter)
0.5 cup	corn sugar to prime

Original Specific Gravity: 1.058

Final Specific Gravity: 1.015

Boiling Time: 90 minutes

Primary Fermentation: 5 days at 65° F
(18° C) in glass

Secondary Fermentation: 8 days at 65°
F (18° C) in glass

Directions

Mash grains at 152° F (67° C) for 60 minutes. Mash out at 170° F (77° C) for 10 minutes.

Judges' Comments

"Very robust, very good beer. Could use a little more yeast character."

"High bitterness, very creamy."

Runners-Up

Silver: Brandon De Line, Newport, MI, Extra
Special/Strong Bitter (English Pale Ale)

Bronze: Jonathan Plise, Concord, CA, Extra
Special/Strong Bitter (English Pale Ale),
Diablo Order of Zymiracle Enthusiasts
(DOZE)

Category 9: Scottish and Irish Ale



Gold Medal

Sponsored by The
WeekEnd Brewer

**Kristen and Orsolya England, Saint Paul,
MN, Scottish Light 60/-Saint Paul
Homebrewers Club
[Untitled]
Scottish Light 60/-**

Ingredients

for 5 U.S. gallons (19 L)

6.0 lb	(2.72 kg) Golden Promise pale malt
4.0 oz	(113 g) roast barley
0.25 oz	(7 g) Fuggle whole hops, 4.75% alpha acid (60 min.) Wyeast No. 1728 Scottish ale yeast Forced CO ₂ to carbonate (2.5 vol.)

Original Specific Gravity: 1.034

Final Specific Gravity: 1.012

Boiling Time: 120 minutes

Primary Fermentation: 5 days at
60° F (16° C) in glass

Directions

Mash grains at 150° F (66° C) for 90 minutes.

Runners-Up

Silver: Mark Martonchik, Northfield, OH, Strong Scotch Ale, Route 82 Homebrew Club

Bronze: Thomas Eibner, St Paul, MN, Strong Scotch Ale, Saint Paul Homebrewers Club

Category 10: American Ale



Gold Medal

Sponsored by BJ's Restaurant & Brewery

Bob Barrett, Kim Barrett, Ann Arbor, MI, American Pale Ale, Ann Arbor Brewers Guild "Amarillo Pale Ale" American Pale Ale

Ingredients

for 10.5 U.S. gallons (39.7 L)

8.5 lb	(3.9 kg) Durst Pilsner malt
7.0 lb	(3.18 kg) Briess six-row pale malt
1.0 lb	(0.45 kg) Durst Vienna malt
1.0 lb	(0.45 kg) Durst Munich malt
1.0 lb	(0.45 kg) Dingman biscuit malt
1.0 lb	(0.45 kg) Durst wheat malt
2.0 oz	(56 g) Amarillo whole hops, 9.6% alpha acid (1st wort)
4.0 oz	(113 g) Amarillo whole hops, 9.6% alpha acid (60 min.)
2.0 oz	(56 g) Amarillo whole hops, 9.6% alpha acid (0 min.)
2.0 oz	(56 g) Amarillo pellet hops, 9.6% alpha acid (dry)
	Wyeast No. 1056 American ale yeast, 1500 mL slurry
	Forced CO ₂ to carbonate (2.3 vol)

Original Specific Gravity: 1.054

Final Specific Gravity: 1.012

Boiling Time: 70 min.

Primary Fermentation: 7 days at 68° F (20° C) in glass

Secondary Fermentation: 4 days at 68° F (20° C) in glass

Tertiary Fermentation: 10 days at 68° F (20° C) in glass (dry hop)

Directions

Mash grain at 153° F (67° C) for 60 minutes.

Judges' Comments

"Well balanced. Overall balance is the hallmark. Nice job."

"Very hoppy but with good malt balance."

Runners-Up

Silver: Michael Habrat, San Diego, CA, American Pale Ale

Bronze: David Avila, Livermore, CA, American Amber Ale, Diablo Order of Zymiracle Enthusiasts (DOZE)

Category 11: English Brown Ale



Gold Medal

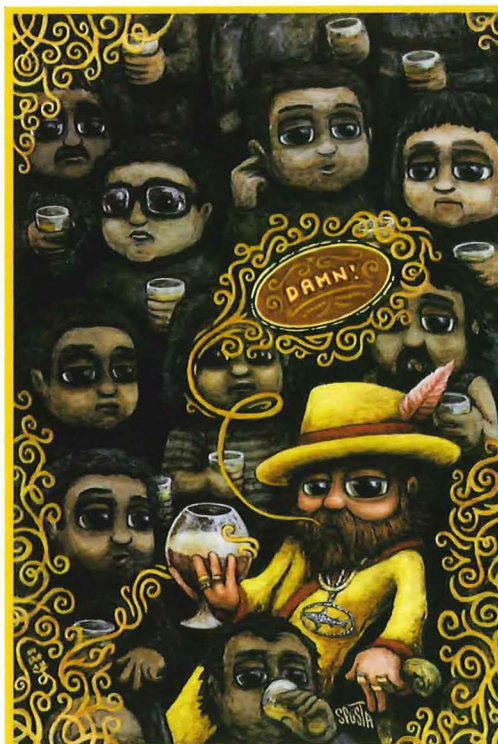
Sponsored by Alternative Beverage

Jamil Zainasheff, Elk Grove, CA, Southern English Brown Ale, QUAFF 2007 Ninkasi Award Winner [Untitled] Southern Brown Ale

Ingredients

for 6 U.S. gallons (22.7 L)

6.9 lb	(3.13 kg) British pale malt
0.63 lb	(286 g) 120L crystal malt
1.0 lb	(227 g) 80L crystal malt
0.5 lb	(159 g) special roast malt
0.38 lb	(172 g) light chocolate malt
0.25 lb	(113 g) carafa special II
0.85 oz	(24 g) E.K. Goldings pellet hops, 5% alpha acid, (60 min.)
	White Labs WLP002 English ale yeast



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**Off-centered
ales for
off-centered
people.**

Occasional rarities to look for...

Punkin Ale, 120 Minute IPA, Pangaea

(Sept)

(Sept)

(Oct)

Original Specific Gravity: 1.041

Final Specific Gravity: unknown

Boiling Time: 90 minutes

Directions

Mash grain at 154° F (67° C) for 60 minutes. Mash out at 168° F (76° C) for 10 minutes.

Judges' Comments

"Cherry, currant, raisin...rich and fruity, good body."

"A nice beer. Perception is a bit hoppy in flavor. Fruitiness is a bit much."

Runners-Up

Silver: Jeff Niggemeyer, Longmont, CO, Mild Ale

Bronze: Ted Hausotter, Baker City, OR, Mild Ale, Strange Brew Homebrew Club

Category 12: Porter



Gold Medal

Sponsored by Deschutes Brewery

BJ Haun, St Paul, MN, Robust Porter, Saint Paul Homebrewers Club
"Robust Porter"
Robust Porter

Ingredients

for 5 U.S. gallons (19 L)

8.0 lb	(3.63 kg) Crisp Maris Otter pale malt
2.0 lb	(0.9 kg) British mild malt
1.25 lb	(0.56 kg) British chocolate malt
0.75 lb	(340 g) 75°L British crystal malt
0.5 lb	(227 g) flaked barley
0.25 lb	(113 g) black patent
0.25 lb	(113 g) American special roast
1.0 oz	(28 g) Simcoe pellet hops, 10.7% alpha acid (60 min.)
1.0 oz	(28 g) Cascade pellet hops, 5% alpha acid (1 min.)
	Wyeast No. 1318 London III ale yeast
	Forced CO ₂ to carbonate
	Whirlfloc to clarify

Original Specific Gravity: 1.068

Final Specific Gravity: 1.024

Boiling Time: 90 min.

Primary Fermentation: 7 days at 65° F (18° C)

Secondary Fermentation: 20 days at 65° F (18° C)

Directions

Conduct a single infusion mash at 154° F (68° C).

Judges' Comments

"Nice roast aroma. Roast malt dominates. Good for style!"

Runners-Up

Silver: Karl King, Colleyville, TX, Baltic Porter, Cap and Hare Homebrew Club

Bronze: Thomas Eibner, St Paul, MN, Baltic Porter, Saint Paul Homebrewers Club

Category 13: Stout



Gold Medal

Sponsored by Brew & Grow

Rob Beck, Pancho Luna and Philip Leonard, Kansas City, MO, Russian Imperial Stout, Kansas City Bier Meisters, Jayhops & Jayhops
"Leap Second Imperial Stout"
Imperial Stout

Ingredients

for 5 U.S. gallons (19 L)

16.25 lb	(7.37 kg) Crisp Maris Otter pale malt
0.75 lb	(0.34 kg) Simpsons chocolate malt
0.5 lb	(227 g) Castle black malt
0.5 lb	(227 g) Simpsons roast barley
1.0 lb	(0.45 kg) Crisp 80L crystal
0.5 lb	(0.45 kg) Briess victory malt
0.8 oz	(23 g) Magnum whole hops, 13.9% alpha acid (100 min.)
0.5 oz	(14 g) Centennial whole hops, 10.7% alpha acid (100 min.)
1.5 oz	(43 g) Liberty whole hops, 4.6% alpha acid (30 min.)
1.0 oz	(28 g) E.K. Goldings whole hops, 6.6% alpha acid (30 min.)
1.0 oz	(28 g) Liberty whole hops, 4.6% alpha acid (steep)
1.0 oz	(28 g) Liberty whole hops, 4.6% alpha acid (dry)

Wyeast and White Labs

American ale/California ale yeast

Forced CO₂ to carbonate (2.4 vol.)

Original Specific Gravity: 1.099

Final Specific Gravity: 1.024

Boiling Time: 120 minutes

Directions

Mash grains at 140° F (60° C) for 15 minutes. Raise to 153° F (67° C) and hold for 115 minutes. Mash out at 166° F (74° C) for 19 minutes. This beer was brewed in three separate 5-gallon batches by the three brewers. It was fermented and conditioned together (15 gallons) and packaged individually (5 gallons) by the individual brewers.

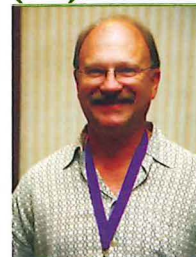
Judges' Comments

"Chewy, great complexity. I would pay money for this beer."

Runners-Up

Silver: Karl King, Colleyville, TX, Russian Imperial Stout, Cap and Hare Homebrew Club
Bronze: Matthew Anderson, Lakewood, CO, Sweet Stout

Category 14: India Pale Ale (IPA)



Gold Medal

Sponsored by Anderson Valley Brewing Co.

Paul Long, Newberg, OR, American IPA, Strange Brew Homebrew Club
"Longbrook IPA"
American IPA

Ingredients

for 10 U.S. gallons (38 L)

10.0 lb	(4.54 kg) Maris Otter pale malt
7.0 lb	(3.18 kg) pale malt
6.0 lb	(2.72 kg) Munich malt
0.5 lb	(227 g) dextrin malt
0.5 lb	(227 g) caramel Vienna malt
0.5 lb	(227 g) caramel Munich malt
1.0 oz	(28 g) Columbus whole hops, (90 min.)
1.4 oz	(40 g) Centennial/Warrior whole hops (60 min.)

- 1.0 oz** (28 g) Amarillo whole hops (30 min.)
- 2.0 oz** (56 g) Amarillo/Cascade whole hops (15 min.)
- 2.0 oz** (56 g) Amarillo/Simcoe whole hops (5 min.)
- 2.0 oz** (56 g) Simcoe/Cascade whole hops (0 min.)
- 2.0 oz** (56 g) Simcoe/Amarillo/Cascade whole hops (dry)
- Wyeast No. 1968 London ESB ale yeast (1 L starter)

Original Specific Gravity: 1.063

Final Specific Gravity: 1.015

Boiling Time: 90 minutes

Primary Fermentation: 7 days at

68° F (20° C) in steel

Secondary Fermentation: 7 days at

68° F (20° C) in steel

Directions

Mash grains at 153° F (67° C) for 90 minutes.

Judges' Comments

"Nice IPA. Slightly more malt sweetness would be nicer, but within limits now."

"Great use of late hop/dry hop additions. Awesome citrusy nose!"

"Great aroma!"

Runners-Up

Silver: Robert Heinlein, Crown Point, IN, English IPA, Brewers of South Suburbia (BOSS)

Bronze: Carlo Camarda, Sonoma, CA, American IPA, Diablo Order of Zymiracle Enthusiasts (DOZE)

Category 15: German Wheat and Rye Beer



Gold Medal

Sponsored by Widmer Brothers Brewing Co

Rodney Kibzey, Liz Lerch, Lombard, IL, Weizenbock, Urban Knives of Grain "Bitezen Bock" Weizenbock

Ingredients

for 5 U.S. gallons (19 L)

- 7.25 lb** (3.29 kg) wheat malt
- 5.25 lb** (2.38 kg) pale malt
- 0.34 lb** (172 g) chocolate malt
- 0.25 lb** (113 g) pale ale malt
- 0.9 oz** (26 g) Tettnanger pellet hops, 4% alpha acid, (60 min.)
- 0.25 oz** (7 g) Tettnanger pellet hops, 4% alpha acid, (steep)
- White Labs WLP300
- Hefeweizen ale yeast
- Forced CO₂ to carbonate

Original Specific Gravity: unknown

Final Specific Gravity: unknown

Boiling Time: 90 minutes

Primary Fermentation: 10 days at

68° F (20° C) in glass

Secondary Fermentation: 30 days at

68° F (20° C) in glass

Directions

Mash grains at 154° F (68° C) for 60 minutes.

Judges' Comments

"Nice big malty aromatics—plums and prunes. Deep, balanced malt flavor, dry finish. Warm and creamy."

"Bright clarity, beautiful presentation. Very complex. Warmth evident. Very nice."

"Rich malty caramel first. Subtle wheat supporting. Phenolics hide in the background."

Runners-Up

Silver: Graham Cox, Meridian, MS, Roggenbier (German Rye Beer), Chicken City Ale Raisers

Bronze: Thomas Crawford, Tallahassee, FL, Weizen/Weissbier, North Florida Brewers League "Peter Nelson's RoggenBier"



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Category 16: Belgian and French Ale



Gold Medal

Sponsored by S.A. Bieres de Chimay c/o Manneken-Brussel Imports

Gordon Schuck, Steamboat Springs, CO,
"Saison d'Ete"
Saison

Ingredients

for 5 U.S. gallons (19 liters)

9.5 lb	(4.31 kg) German pilsner malt
1.0 lb	(0.45 kg) wheat malt
1.25 lb	(566 g) sucrose
	Zest of 1/4 orange
0.13 oz	(4 g) fresh grated ginger
1.25 oz	(35 g) Styrian Goldings pellet hops (90 min.)
0.25 oz	(7 g) E K Goldings pellet hops (15 min.)
0.25 oz	(7 g) Saaz pellet hops (2 min.)
	White Labs WLP 565 Saison ale yeast (2 qt starter)
6.75 oz	(191 g) dextrose to prime

Original Specific Gravity: 1.063

Final Specific Gravity: 1.014

Boiling Time: 90 min

Primary Fermentation: 14 days at
70-76° F (21-24° C) in steel

Secondary Fermentation: 9 days at
70° F (21° C) in glass

Directions

Mash grains at 150° F (66° C) for 60 minutes. Raise to 155° F (68° C) and hold for 15 minutes.

Judges' Comments

"Starts dry then finishes sweet."

"Peppery, clovelike. Please send me the recipe."

Runners-Up

Silver: Scott Thomas, Pleasant Hill, CA, Belgian Pale Ale, Diablo Order of Zymiracle Enthusiasts (DOZE)

Bronze: Eric Eigard, Deborah Lee Eigard (Blondie), Antioch, CA, Belgian Specialty Ale, Diablo Order of Zymiracle Enthusiasts (DOZE)

Category 17: Sour Ale



Gold Medal

Jamil Zainasheff, Elk Grove, CA, Flanders Red Ale, QUAFF
2007 Ninkasi Award Winner
[Untitled]
Flanders Red Ale

Ingredients

for 6 U.S. gallons (22.7 L)

5.25 lb	(2.38 kg) German Pilsner malt
5.25 lb	(2.38 kg) US Vienna malt
1.0 lb	(0.45 kg) German Munich malt
0.5 lb	(227 g) Belgian caramel Munich malt
0.5 lb	(227 g) Belgian aromatic malt
0.5 lb	(227 g) Belgian Special B malt
0.5 lb	(227 g) German wheat malt
0.8 oz	(23 g) EK Goldings pellet hops, 5% alpha acid (60 min.)
	White Labs WLP 001
	California ale yeast
	Wyeast No. 3763 Roeselare Blend

Original Specific Gravity: 1.057

Final Specific Gravity: unknown

Boiling Time: 90 minutes

Directions

Mash grains at 154° F (68° C) for 60 minutes. Mash out at 168° F (76° C) for 10 minutes.

Judges' Comments

"Nice malt backing, good lambic character. Wonderful balance. Could be a bit drier...maybe mash a little lower."

"Good acidity and fruit with very solid malt backing. Complex balance and great mélange of flavors. This is a superb beer, one of the best I have had in this style. Congrats."

Runners Up

Silver: Ira Edwards, Anchorage, AK, Gueuze, Great Northern Brewers Club

Bronze: Scott Boeke, North Augusta, GA, Fruit Lambic

Category 18: Belgian Strong Ale



Gold Medal

Sponsored by Dingemans c/o Cargill Malt

John Applegarth, Grand Rapids, MI, Belgian Strong Dark Ale, PrimeTime Brewers
"Belgian Dark Strong"
Belgian Dark Strong Ale

Ingredients

for 5 U.S. gallons (19 L)

10.75 lb	(4.88 kg) pale malt
1.75 lb	(0.79 kg) dextrin malt
1.0 lb	(0.45 kg) Vienna malt
1.0 lb	(0.45 kg) aromatic malt
1.0 lb	(0.45 kg) Special B malt
13.0 oz	(369 g) flaked barley
0.75 lb	(340 g) wheat malt
0.5 lb	(227 g) biscuit malt
2.0 oz	(57 g) chocolate malt
3.0 lb	piloncillo sugar (in kettle)
1.0 oz	(28 g) Styrian Goldings pellet hops, 4% alpha acid (60 min.)
0.75 oz	(21 g) Styrian Goldings pellet hops, 4.9% alpha acid (30 min.)
	White Labs WLP 500 Trappist ale yeast (1 L starter)
	Forced CO ₂ to carbonate

Original Specific Gravity: 1.097

Final Specific Gravity: 1.012

Boiling Time: 90 min.

Primary Fermentation: 7 days at
70-74° F (21-23° C) in glass

Secondary Fermentation: 40 days at
70° F (21° C) in glass

Directions

Mash in grains at 153° F (67° C) for 60 minutes. Raise to 168° F (76° C) and mash out for 10 minutes.

Judges' Comments

"Nicely balanced."

Runners-Up

Silver: Loren Miraglia, Encinitas, CA, Belgian Blond Ale, QUAFF

Bronze: Mike McDole, Clayton, CA, Belgian Strong Golden Ale, Diablo Order of Zymiracle Enthusiasts (DOZE)

Category 19: Strong Ale



Gold Medal

Sponsored by Northern Brewer WI

T Bob Daugherty, Rob Kolacny, Pearland, TX, American Barleywine, Foam Rangers Homebrew Club
"Old Blood & Guts-California"
American Barleywine

Ingredients

for 10 U.S. gallons (38 L)

15.0 lb	(6.8 kg) light liquid malt extract
15.0 lb	(6.8 kg) Maris Otter pale malt
5.0 lb	(2.27 kg) dextrin malt
3.0 lb	(1.36 kg) 55° L crystal malt
2.0 lb	(0.9 kg) biscuit malt
2.0 lb	(0.9 kg) flaked barley
2.0 lb	(0.9 kg) Special B malt
0.5 lb	(0.45 kg) wheat malt
2.0 oz	(57 g) Cascade whole hops, 5.6% alpha acid, (mash hop)
2.5 oz	(70 g) Chinook whole hops, 13.5% alpha acid, (90 min.)
2.5 oz	(70 g) Galena whole hops, 12.6% alpha acid, (90 min.)
4.5 oz	(128 g) Willamette whole hops, 4.3% alpha acid, (30 min.)
5.0 oz	(142 g) Cascade whole hops, 5.6% alpha acid, (10 min.)
2.0 oz	(28 g) Cascade whole hops, 5.6% alpha acid, (dry)
4.0 oz	(113 g) Centennial whole hops, 10.5% alpha acid, (dry)
	White Labs WLP 001 California ale yeast (2L starter) Forced CO ₂ to carbonate (2 tsp) Yeast nutrient: dry yeast packs Irish moss to clarify

Original Specific Gravity: 1.100

Final Specific Gravity: 1.028

Boiling Time: 120 min

Primary Fermentation: 12 days at
70° F (21° C) in glass

Secondary Fermentation: 14 days at
70° F (21° C) in glass

Directions

Mash grains at 152° F (67° C) for 60 minutes.

Judges' Comments

"Hop finish lingers."

Runners-Up

Silver: Edward Mathis, Beecher, WI, Old Ale, Green Bay Rackers
Bronze: Scott Thomas, J.J. Houston, Pleasant Hill, CA, English Barleywine, Diablo Order of Zymiracle Enthusiasts (DOZE)

Category 20: Fruit Beer



Gold Medal

Greg Fowler, Hamilton, MI, Apricot Wheat "Summer Breeze"
American Wheat Beer with Apricot

Ingredients

for 10 U.S. gallons (38 L)

10.0 lb	(4.5 kg) Briess wheat malt
8.5 lb	(3.86 kg) pale malt
2.0 lb	(0.9 kg) Briess dextrin malt
1.25 oz	(35 g) Cascade whole hops, 7.8% alpha acid (60 min.)
0.75 oz	(35 g) Cascade whole hops, 7.8% alpha acid (20 min.)
	White Labs WLP 320 American Hefeweizen ale yeast starter (3 vials) Forced CO ₂ to carbonate (2.85 vol.)
0.5 lb	rice hulls (in sparge) Irish moss to clarify (1 Tb) LD Carlson ammonium phosphate yeast nutrient (4 tsp)

Original Specific Gravity: 1.046

Final Specific Gravity: 1.012

Boiling Time: 90 min

Primary Fermentation: 8 days at 68° F
(20° C) in steel

Directions

Mash in at 150° F (60° C) and hold for 60 minutes. Use 12 ml of LD Carlson Apricot Flavoring in each 12-ounce bottle, then fill with counter pressure bottle filler.

Judges' Comments

"Rich apricot aroma. Good balance, allows fruit to come through nicely. Very refreshing."

Runners-Up

Silver: Mike McDole, Clayton, CA, Dortmund Export with Peach, Diablo Order of Zymiracle Enthusiasts (DOZE)
Bronze: Graham Cox, Meridian, MS, Cherry Flanders Red, Chicken City Ale Raisers

Category 21:

Spice/Herb/Vegetable Beer



Gold Medal

Kevin Presson, Abingdon, MD, Strong Scotch Ale with Roasted Jalapeño Peppers, Libation Association of Northern Maryland "Mild Jalapeño Pepper Beer"
Strong Scotch Ale with Jalapeños

Ingredients

for 5 U.S. gallons (19 L)

14.5 lb	(6.58 kg) Maris Otter malt
1.75 lb	(0.79 kg) 60° L crystal malt
0.5 lb	(227 g) dextrin malt
0.5 lb	(227 g) peat smoked malt
0.25 lb	(113 g) biscuit malt
2.0 oz	(57 g) chocolate malt
1.5 oz	(43 g) E.K. Goldings pellet hops, 5% alpha acid (90 min.)
1.0 oz	(28 g) Fuggles pellet hops, 4% alpha acid, (10 min.)
1.0 lb	jalapeños White Labs WLP 007 Dry English ale yeast (1 vial) Forced CO ₂ to carbonate (2.5 vol.) White Labs Servomyces yeast nutrient (1 capsule)

Original Specific Gravity: 1.088

Final Specific Gravity: 1.035

Boiling Time: 90 minutes

Primary Fermentation: 7 days at 65° F
(18° C) in glass

Secondary Fermentation: 14 days at 65°
F (18° C)

Directions

Mash grains at 158° F (70° C) for 90 minutes. Cut 1 lb (0.45 kg) jalapeños in half, seed, and roast in an oven at 250° F (121° C) for 20 minutes. Steep after boil for 30 minutes.

Judges' Comments

"Jalapeño aroma, peppers dominate, nice malty caramel under. Nice controlled heat, not hot at all. Balanced. Heat grows as you drink it."

Runners-Up

Silver: Ed Seaman, Streamwood, IL, Blonde Ale with Pumpkin Pie Spices, Urban Knaves of Grain

Bronze: Jamil Zainasheff, Elk Grove, CA, Vanilla Robust Porter, QUAFF

Category 22: Smoke-Flavored and Wood-Aged Beer



Gold Medal

Sponsored by Alaskan Brewing Co

Brian St Clair, Cincinnati, OH, Wood-Aged Beer, Bloatarian Brewing League
"Dare to Roeselare"
Flanders Red Ale Aged in Oak

Ingredients

for 10 U.S. gallons (38 L)

10.0 lb	(4.5 kg) Vienna malt
2.0 lb	(0.9 kg) caramel Helles malt
2.0 lb	(0.9 kg) caramel Vienna malt
2.0 lb	(0.9 kg) aromatic malt
1.0 lb	(0.45 kg) Special B malt
3.0 lb	(1.36 kg) flaked corn
3.0 oz	(85 g) carafa III malt
2.0 oz	(56 g) Mt. Hood whole hops, 3.7% alpha acid (45 min.) Wyeast No. 3763 Roeselare blend yeast (2200 mL starter)

Original Specific Gravity: 1.053

Final Specific Gravity: [Unknown]

Boiling Time: 80 minutes

Primary Fermentation: 20 days at 69° F
(21°C) in glass

Secondary Fermentation: 17 months in
oak barrel

Directions

Mash grains at 158° F (70° C) for 90 minutes.

Judges' Comments

"Rich, sour complexity. Oak comes through and some slight mustiness. Beautiful balance between acetic and lactic acid. Sour fruit, Vienna malt toast. Oak barrel tannin holds up the sour character with malt, providing a great framework. Magnificent effort. Cheers!"

"Very complex interplay of sweet malt, hops, yeast, sour and wood. Excellent example of style."

"Well balanced with wood aging complementing the classical sourness of this style. Astringency is to style. Excellent base beer with wood aging complementing—nice effort."

Runners-Up

Silver: Joe Weimann, Oakdale, MN, Other Smoked Beer

Bronze: Paul Menchen, Longmont, CO, Other Smoked Beer

Category 23: Specialty Beer



Gold Medal

Sponsored by The Beverage People

Richard Skains, Rocky River, OH, Specialty Beer
2007 Homebrewer of the Year
[Untitled]
Chipotle Pepper Alder Smoked Bock

Ingredients

for 10 U.S. gallons (38 L)

10.25 lb	(4.65 kg) pilsner malt
8.0 lb	(3.63 kg) Munich malt
4.5 lb	(2.04 kg) Alder smoked malt
3.0 oz	(85 g) Tettnanger pellet hops, 3.7% alpha acid (90 min.)
0.75 oz	(21 g) Hersbrucker pellet hops, 3% alpha acid (15 min.) Wyeast No. 2206 Bavarian lager yeast Chipotle peppers

Original Specific Gravity: 1.076

Final Specific Gravity: [unknown]

Boiling Time: 120 minutes

Directions

Mash at 156° F (69° C).

Judges' Comments

"Very well balanced malt/smoke/chipotle with finishing heat. Creative and well balanced use of ingredients—heat is good without being over the top."

"Light pepper burn in finish—nice!"

"Wonderful! Just the right heat!"

Runners-Up

Silver: Chris Coval, Andy Coval, Philadelphia, PA, Specialty Beer

Bronze: Kerry Martin, Austin, TX, Specialty Beer, Austin Zealots

Category 24: Traditional Mead



Gold Medal

Sponsored by The Winemaker Shop

Edward Walkowski, Dalton, PA, Sweet Mead, S.A.A.Z. (Scranton Area Amateur Zymologists)
"Orange Blossom Mead"
Still, Medium Mead

Ingredients

for 6.5 U.S. gallons (24.6 L)

17.0 lb	(7.71 kg) 2006 Florida orange blossom honey
0.25 oz	(7 g) Fermox
	Laivin D-47 yeast (10 g)

Original Specific Gravity: 1.090

Final Specific Gravity: 1.030

Boiling Time: n/a

Primary Fermentation: 60 days at
64° F (18°C) in glass

Secondary Fermentation: 40 days at
64° F (18°C) in glass

Directions

Sulfite must to 50 ppm 24 hrs prior to pitching yeast. Filtered.

Judges' Comments

"Flavor is good, not overwhelming. Not cloyingly sweet."

"Strong honey flavor, lacking some tartness/acidity. Tastes a little young as well. Very delightful. We would like more."

"Nice honey flavor, balance works. Very nice, pleasant and fun. Bigger batches are required!"

Runners-Up

Silver: Thomas Eibner, St Paul, MN, Sweet Mead, Saint Paul Homebrewers Club
Bronze: Kristen and Orsolya England, Saint Paul, MN, Sweet Mead, Saint Paul Homebrewers Club

Category 25: Melomel (Fruit Mead)



Gold Medal

Sponsored by Bacchus & Barleycorn

Steve Fletty, Falcon Heights, MN, Pymment (Grape Melomel), Saint Paul Homebrewers Club
2007 Meadmaker of the Year
"Chateau Fletty Barrel Select"
Sparkling Medium Orange Blossom Riesling Pymment

Ingredients

for 6 U.S. gallons (22.7 L)

12.0 lb (5.44 kg) orange blossom honey
3.0 gallons (11.4 L) Riesling juice
2.0 gallons (7.6 L) water
Wyeast No. 3783 Rudesheimer wine yeast
1 cup honey added at kegging (to prime)

Original Specific Gravity: 1.129

Final Specific Gravity: 1.006

Boiling Time: n/a

Primary Fermentation: 36 days at 68° F (20° C) in glass

Secondary Fermentation: 14 days at 68° F (20° C) in glass

Tertiary Fermentation: 44 days at 68° F (20° C) in glass

Judges' Comments

"Great blend of Riesling and orange blossom. A little acidic booze gives a nice warm character that's not solventy."

"Very pleasant blend of honey sweetness and grape balance. Well made, very clean."

Runners-Up

Silver: Gordon Strong, Beavercreek, OH, Blackberry Melomel, Saint Paul Homebrewers Club
Bronze: Rick Reilly, Ron Stroh, Fargo, ND, Cyser (Apple Melomel), Prairie Homebrewing Companions

Category 26: Other Mead



Gold Medal

Byron Burch, Santa Rosa, CA, Open Category Mead, Sonoma Beerocrats
"Mixed Breed Beauty"
Still Medium with Lime and Spearmint

Ingredients

for 5 U.S. gallons (19 L)

18.0 lb (6.8 kg) "The Beverage People" clover honey
5.0 gallons (19 L) water
5.25 oz (155 mL) fresh squeezed lime juice
0.5 oz (15 mL) pectic enzyme
2.5 oz (71 g) tartaric acid
2.0 oz (56 g) "The Beverage People" yeast nutrient
1.5 tsp (7.4 mL) Irish moss
8.0 oz (227 g) bruised spearmint leaves
Prise de Mousse wine yeast (10 g)
6.0 g Sparkolloid to clarify

Original Specific Gravity: 27 Brix

Final Specific Gravity: unknown

Boiling Time: 5 min.

Directions

All ingredients except yeast and mint leaves are boiled for five minutes, skimming any scum that rises to the surface. Chill with immersion chiller; add yeast, and ferment. At summer temperatures, this should take three or four weeks. After fermentation, rack to soda keg, and submerge mint leaves (in a muslin bag) for two days. Remove mint and fine the mead with Sparkolloid, racking off of the settlings after three weeks. There should be at least two rackings after fining and prior to bottling. Note that 20 ppm SO₂ is added at each racking after the end of fermentation, and 30 ppm at bottling.

Judges' Comments

"Clean, well-fermented. Pure honey flavor, medium sweetness. Mint in balance. Lime is a nice addition—adds a crispness in finish and balances sweetness. Clover not apparent. Fairly sweet for medium. Wonderful. Clean flavors. Perfect foundation."

"Quite pleasant. The lime and mint are both easily identifiable and work well together. I've got a nice idea for my mint julep recipes."

Runners-Up

Silver: Brad Dahlhofer, Ferndale, MI, Metheglin, Fermental Order of Renaissance Draughtsmen (FORD)
Bronze: Shane Coombs, Warrenville, IL, Open Category Mead, Urban Knaves of Grain

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Category 27: Standard Cider and Perry



Gold Medal

Sponsored by
Woodchuck
Draft Cider

Joseph Franconi, Red Hook, NY, English Cider, Hudson Valley Homebrewers 2007 Cidermaker of the Year

Ingredients

5 gal (18.9 L) Freshly pressed Northern Spy apple juice
5 Campden Tablets
Premier Cuvee wine yeast
Sugar to taste

Directions

Sulfite apple juice with five crushed campden tablets and let sit for 24 hours. Pitch a starter of wine yeast. After fermentation is complete, rack to secondary carboy and age one year. Rack to keg with enough sugar to sweeten to taste and carbonate. This cider was stored for four years at which point it had developed all the flavors necessary for an English style cider. Bacteria or wild yeast may have been introduced at some point that turned the flavor from a slightly sweetened, apple-like cider into the English style cider it is now.

Runners-Up

Silver: Jeff Carlson, Grand Rapids, MI, Common Perry, Prime Time Brewers
Bronze: Edward Walkowski, Dalton, PA, Common Cider, S.A.A.Z. (Scranton Area Amateur Zymologists)

Category 28: Specialty Cider and Perry



Gold Medal

Sponsored by Woodchuck
Draft Cider

Gary Awdey, Eden, NY Cider with Spices

Ingredients

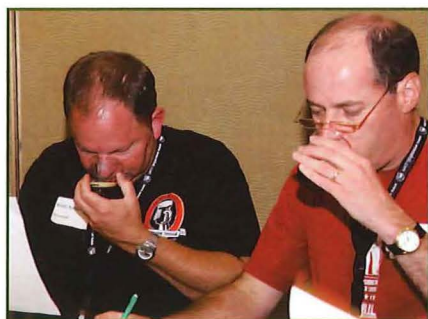
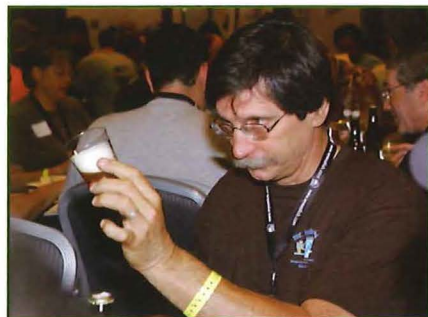
75% common cider (Jonagold, Liberty, Spy varieties)
25% English cider (Yarlington Mill variety)
1 cinnamon stick in 6 oz cider (see Directions)
1 tsp ground nutmeg in 6 oz cider (see Directions)

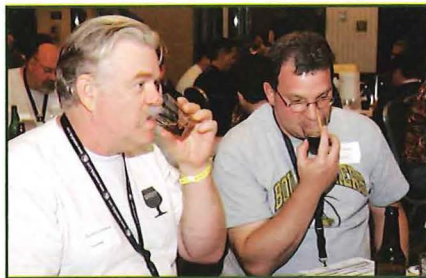
Directions

Ferment and age each batch of cider separately, then blend in proportions above. For spicing, add cinnamon stick to one bottle of cider and nutmeg to another. Cap bottles and pasteurize for 30 minutes at 140° F (60° C). Swirl and let cool overnight. Dose main batch with spiced cider to taste. Bottle and pasteurize main batch for 20 minutes at 150° F (66° C).

Runners-Up

Silver: John Jurgensen, Linda Jurgensen, Friendswood, TX, Applewine, Bay Area Mashtronauts
Bronze: Jesse Stremcha, Sarah Stremcha, Saint Paul, MN, New England Cider, Saint Paul Homebrewers Club





(continued on page 64)

KUDOS—BEST OF SHOW

AHA/BJCP Sanctioned Competition Program

February 2007

Beerfest, 229 entries—*Tony Wheeler, Melbourne, Victoria, Australia.*

March 2007

World Cup of Beer, 285 entries—*Mike Riddle, Napa, CA.*

April 2007

ALES Homebrew Open & AHA Qualifier Competition, 450 entries—*Chris Hillman, Winnipeg, MB.*

Mayfaire 2007, 352 entries—*Jamil Zainasheff, Elk Grove, CA.*

Black & Tan and I-74 Homebrew Club Challenge, 28 entries—*Doug Newberry, Batavia, IL.*

Big and Huge Homebrew Contest, 47 entries—*Two Gremskis, Milwaukee, WI.*

World Expo of Beer Competition, 252 entries—*Atwater D-Light, Atwater Block Brewery, Detroit, MI.*

13th Annual Eight Seconds of Froth/Liquid Poets Mugshot Challenge, 355 entries—*Aaron Bush, Littleton, CO.*

11th Annual Silver Dollar Fair Homebrew Competition, 167 entries—*Larry Rauen, Chico, CA.*

May 2007

Green Mountain Homebrew Competition, 152 entries—*Mickey Brown and Tom Miklinevich, Middlebury, CT.*

Spirit of Free Beer XV, 290 entries—*Ken Gillespie, Williamsburg, VA.*

2007 U.S. Open Homebrew Competition, 378 entries—*William Lynch, Waxhaw, NC.*

Goblets of Gold Mead Competition, 30 entries—*Severine Abrahamsen, Homer, AK.*

2007 Samuel Adams American Homebrew Contest - LongShot - Chicago, 532 entries—*Rodney Kibzey, Lombard, IL.*

Bloatarian Open, 135 entries—*Ron Mahan, Alexandria, KY.*

Enchanted Brewing Challenge, 64 entries—*Brian Ausderau, Albuquerque, NM.*

First Annual ABC Brews Crews Homebrew Competition, 107 entries—*Jason Pruette, Saline, MI.*

Amber Waves of Grain, 363 entries—*Bruce Franconi, Red Hook, NY.*

11th Annual B.E.E.R. Brewoff, 172 entries—*Matt Bobiak, Port Jefferson Station, NY.*

TRASH XVII, 183 entries—*Dennis Hock, Pittsburgh, PA.*

San Joaquin Fair Homebrew Competition, 90 entries—*Phil McGarry, Granite Bay, CA.*

Cascade Brewers Cup, 193 entries—*James Briske, Lake Stevens, WA.*

2007 Sacramento County Fair Home Brew Competition, 35 entries—*Jim Langlois, Sacramento, CA.*

2007 Wisconsin State Fair Homebrewer's Show, 223 entries—*Dan Schlosser, Wauwatosa, WI.*

11th Annual Celtic Brew-Off, 146 entries—*Eric Heinz, Houston, TX.*

Alameda County Fair Homebrew Competition, 102 entries—*Jeff Rose, Oakland, CA.*

The 25th Annual Oregon Homebrew and Microbrew Festival, 302 entries—*Doug and Mare Goeger, Corvallis, OR.*

12th Annual Big Batch Brew Bash, 73 entries—*Mike Heniff, Pearland, TX.*

15th Annual Great Alaska Homebrew Competition, 78 entries—*Steve Pierce, Juneau, AK.*

2007 California State Fair Commercial Craft Brewing Competition, 415 entries—*Chuck Silva, Green Flash Brewing Co, Vista, CA.*

3rd Annual MoreBeer! Forum Competition, 81 entries—*Dean Dunnivan, Concord, CA.*

June 2007

2007 Samuel Adams American Homebrew Contest - LongShot - San Francisco, 496 entries—*Mike McDole, Concord, CA.*

Sasquatch Homebrew Competition, 35 entries—*Cliff Huntington, Mark LeRutt, Portland, OR.*

13th Annual Boneyard Brew-Off, 152 entries—*Linda Owens & Joshi Fullop, Champaign, IL.*

2007 BUZZ Off, 269 entries—*Edward Bielaus, Rockville, MD.*

Albany Rotary 2007 Lobster Festival & 3rd Annual Microbrewery Festival and Competition, 28 entries—*C.H. Evan's Albany Pump Station, George de Piro, Albany, NY.*

Puget Sound Pro-Am Competition, 124 entries—*Tom Schmidlin, Redmond, WA.*

Aurora Brewing Challenge, 312 entries—*Matthew Smolak, Edmonton, AB.*

San Diego County Fair Homebrew Competition, 777 entries—*Earl Itrich, San Diego, CA.*

20th Annual Southern California Homebrew Championship, 205 entries—*Todd Peterson, San Dimas, CA.*

July 2007

VanCup 2007, 76 entries—*Takeshi Sugimoto, Susono-shi, Shizuoka.*

AHA SPECIAL EVENTS

September 22

AHA Rally—Elysian Brewing Co. @ Capitol Hill In conjunction with Ram Restaurant and Brewery. Seattle, WA. Contact: Kathryn Porter; Phone: 888-822-6273 x 123, E-mail: Kathryn@BrewersAssociation.org Web: www.AHAally.org

September 22

AHA Rally—Sebago Brewing Co. Portland, ME. Contact: Kathryn Porter; Phone: 888-822-6273 x 123, E-mail: kathryn@brewersassociation.org Web: www.AHAally.org

September 29

AHA Rally—Stone Brewing Co. Escondido, CA. Contact: Kathryn Porter; Phone: 888-822-6273 x 123, E-mail: Kathryn@BrewersAssociation.org Web: www.AHAally.org

October 11-13

Great American Beer Festival™ Denver, CO. Contact: Bradley Latham; Phone: 888-822-6273 x 145, E-mail: Bradley@BrewersAssociation.org Web: www.GABF.org

October 13

GABF Pro-Am Competition Denver, CO. Contact: Janis Gross; Phone: 888-822-6273 x 134, E-mail: Janis@BrewersAssociation.org Web: www.GABF.org

October 27

AHA Rally—Yazoo Brewing Co. Nashville, TN. Contact: Kathryn Porter; Phone: 888-822-6273 x 123, E-mail: Kathryn@BrewersAssociation.org Web: www.AHAally.org

November 3

AHA Teach a Friend to Homebrew Day Your Brewery, USA. Contact: Janis Gross; Phone: 888-822-6273 x 134, E-mail: Janis@BrewersAssociation.org Web: www.beertown.org/events/teach/index.html

November 3

AHA Rally—Raccoon River Brewing Co. West Des Moines, IA. Contact: Kathryn Porter; Phone: 888-822-6273 x 123, E-mail: Kathryn@BrewersAssociation.org Web: www.AHAally.org

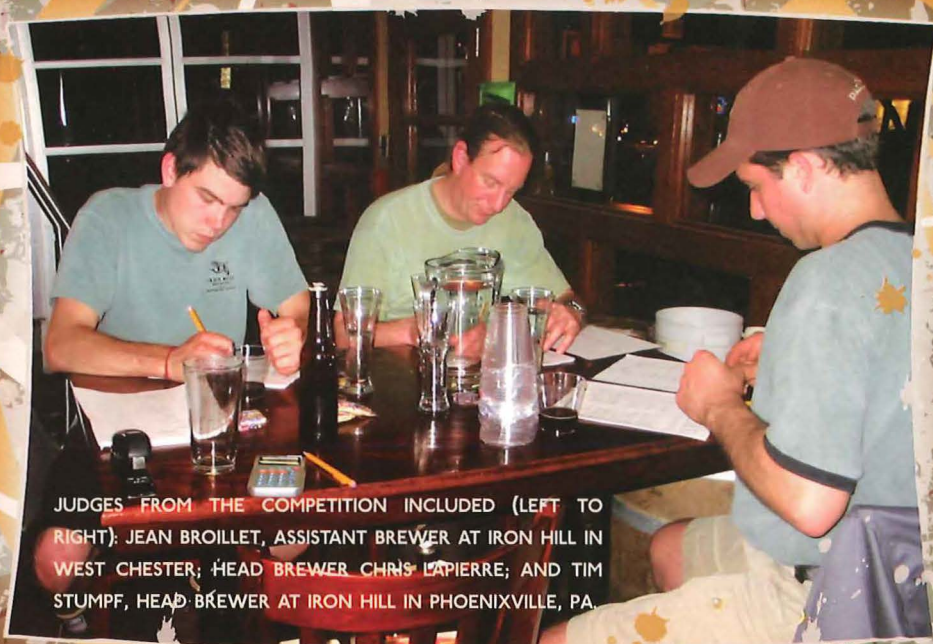
IRON BREWER

Show Down

By David Houseman



CHRIS LAPIERRE, HEAD BREWER OF IRON HILL BREWERY AND RESTAURANT IN WEST CHESTER, PA. PROVIDES WORT TO BUZZ HOMEBREW CLUB MEMBERS RON DAUBEL, DAN CAMPBELL AND KEVIN SOCHA.



JUDGES FROM THE COMPETITION INCLUDED (LEFT TO RIGHT): JEAN BROILLET, ASSISTANT BREWER AT IRON HILL IN WEST CHESTER; HEAD BREWER CHRIS LAPIERRE; AND TIM STUMPF, HEAD BREWER AT IRON HILL IN PHOENIXVILLE, PA.

The relationship between homebrewers and professional brewers has never been better when it comes to the Brewers United Zany Zymurgists (BUZZ) of Chester County, Pa. and the homebrewer-friendly Iron Hill Brewery and Restaurant in West Chester.

BUZZ has met at the Iron Hill Restaurant and Brewery for several years and enjoys an excellent relationship with the brewer, staff and management. Club members quaff head brewer Chris LaPierre's excellent beers when we're not drinking our own. Like most of the Iron Hill brewing team, LaPierre started out as a homebrewer (while a student at Syracuse University), going on to win three medals at the Great American Beer Festival and one World Beer Cup Award as a professional brewer.

One of LaPierre's prize-winning creations is a golden barleywine made with 100-percent pilsner malt, a big beer with an OG of 1.098. Since Iron Hill has an 8.5-barrel brewhouse, this requires two mashes to create sufficient gravity wort for a single fermenter of golden barleywine. Iron Hill takes only the first runnings, dumping the remaining wort from the mash tun prior to initiating a second mash, again only to take the first runnings.

Two years ago, LaPierre invited BUZZ club members to the Saturday morning brewing session of the annual Blond Barleywine to help ourselves to the second runnings using normal sparge techniques. Ten homebrewers eagerly arrived with containers to cart away wort ranging from 1.045 to 1.060, most of it toted away in plastic buckets.

In November 2005, when LaPierre was again planning his yearly double mash, he approached BUZZ with a proposition. BUZZ members could once again come in and get free wort from 100-percent pilsner malt. But this time, he suggested that we have a competition within the club to see who could make the best beer from this wort. Chris Clair, club member and current organizer of the club's Buzz Off competition, worked out a set of rules with LaPierre.

The second mash would be mash hopped, so that was another variable presented to BUZZ. Given that the (not so) secret ingredient was pilsner-based wort, the brewers would take the wort home, add other ingredients, hops and yeast, and the beers would be judged by a team of Iron Hill employees. Thus a new competition was born: The Iron Brewer, a rough take-off on the Iron Chef.

THE RULES

BUZZ club members who wanted wort put their names into a lottery. They could indicate if they preferred the mash hopped wort or plain wort. Names were



TABLE 1. 2006 IRON BREWER COMPETITION ENTRIES

David Houseman	16E Belgian Specialty
Ted Johnston	18C Belgian Tripel
Ted Johnston	16E Belgian Specialty
Ted Johnston	1E Dortmund Export
Christopher Clair	16E Belgian Specialty
Bill Wible, Jr.	1D Munich Helles
Bill Wible, Jr.	14C Imperial IPA
Patrick Lauletta	14C Imperial IPA
Ron Daubel	14C Imperial IPA
Devon Miller	18C Belgian Tripel
Russ Hobough	19A Old Ale
Bob Purrenhage	22A Classic Rauchbier

GROUNDHOG ORVAL CLONE

Ingredients

for 6.0 U.S. gallons (22.7 liters)

9.50 lb	(4.3 kg) pilsner malt
0.75 lb	(340 g) CaraMunich Malt
1.00 lb	(0.45 kg) Clear candi sugar or table sugar
1.5 oz	(42 g) Hallertau Hersbrucker (4.75 aa, pellets) 60 min
1.0 oz	(28 g) Spalter Spalt (5.30 aa, pellets) 15 min
1.0 oz	(28 g) Saaz (2.6 aa, pellets) 5 min
2.0 oz	(56 g) Styrian Goldings (5.25 aa, pellets) dry hopped for two weeks in secondary

Primary yeast:

WLP 510, WLP550, Wyeast 3522 or Wyeast 3787. Make a 1-liter starter and pitch into well-aerated wort.

Secondary yeast:

Brettanomyces bruxellensis

Original Target Gravity: 1.059

Final Target Gravity: 1.012

IBUs: 36

Note: Recipe assumes 77-percent mash efficiency; adjust amounts as necessary in your system.

Directions

Mash in at 130° F. Hold for 15 minutes and then raise to 150° F and hold for one hour until conversion is complete. Raise mash to 168° F for mash out. Vorlauf to clear wort then run out to kettle and sparge to collect 7.5 gallons of wort, not going below 1.010 in runoff. Add kettle sugar and boil for 90 minutes. Cool and pitch yeast into collected approximately 5.5 gallons of wort. Ferment at 68° F for two weeks, rack to secondary and pitch with Brettanomyces from the dregs from four bottles of Orval over a period of a week. Do enjoy the Orval. Add Styrian Goldings and dry hop for two weeks. Rack to bottling bucket, collecting about 5 gallons, add the dregs from last two bottles of the original Orval six-pack and 1.25 cups of light DME boiled in a cup of water to prime. Bottle and store in a relatively warm place for several weeks. The Brett character becomes more pronounced over time.

drawn for the order in which they would receive their wort. Once the wort for each batch was given out to those who wanted it, second or third helpings were available on a first-come, first-served basis—so some of us got 10 to 15 gallons of wort.

The luscious aroma of fresh wort wafted around us as we filled our buckets, or in some cases, empty cornies that had been

flushed with CO₂. There's something about hot wort on a cold December day to really kick off the holiday season. And what to our wondering eyes should appear when we took gravity readings of our wort? A whopping 1.080 for the second runnings! Wow. This opened up all sorts of possibilities of what to make with this wort.

Some rules were set up in advance. Brewers could add another pound of fermentables, could use specialty grains and could add whatever yeast and hops they wished. Any style could be made with this wort. Some got the 1.080 wort; others got wort down to 1.060. Some was mash hopped and some was plain wort. But in the end, the challenge was to make something different and unique from essentially the same base wort.

Free wort is almost as good as free beer, in some ways better since we had the opportunity to make with it what we wished. We each left the brewery firm in our belief that we would make the best beer from this wort. Our creations were widely varied. Ted Johnston made an excellent

tripel, Bill Wible made a great pale ale and Joe Lynne crafted a Helles. (For the complete list, see Table 1). For my attempt I made an Orval clone. By adding additional water to the boil, I got the final gravity down to 1.060 including in it a pound of sucrose to dry out the finish and some crystal malt to add a bit of color. Hops were exclusively Styrian Goldings. This was fermented with neutral ale yeast and then Brettanomyces was added to the secondary. Bottling was done with extra-light DME and additional Brett. (See recipe)

THE JUDGING

Each of the entrants in our Iron Brewer competition was asked to deliver three bottles to the brewery and retain six bottles that would later be served at a beer dinner for the winner of the competition. Judging this event was Mark Edelson, co-owner of Iron Hill and a BJCP and GABF judge, LaPierre, and Dan Bethard, head chef at Iron Hill in West Chester. Judging was not strictly based on the BJCP format; rather each beer was judged according to the form in Table 2 where emphasis was on the second (continued on page 53)



TABLE 2: IRON BREWER JUDGING FORM

Drinkability: 20 points

This is a two-pint test. Would the judges order a second one? Even the most creative use of the wort is rendered meaningless unless it's tasty and enjoyable.

Originality: 10 points

What was done with the wort? Since the wort was 100-percent pilsner malt, a pilsner would not score as highly as, say, a brown ale. But remember, the brown ale must still be drinkable since that's where the most points are!

Technical: 10 points

Are there any flaws? Astringency, fermentation or carbonation issues? Everything is in play here but only technical, not style, flaws are counted.

Style: 5 points

How well did the beer hit the style it was entered as? Style adherence counts...but not quite like a BJCP competition.

Overall: 5 points

A catch-all category of points where judges can award entries where the experiment was ambitious and admirable but fell short of expectations—or punish them for the pain and suffering!

Delicious! (40 – 50): How the heck did you do this and can I get more?

Yummy (30 – 39): Very enjoyable. Just some minor points.

Not Bad (20 – 29): Not bad, but probably a "one and done" beer.

"Interesting..." (10 – 19): ...but I wish I had ordered a small.

Marinade (0 – 9): Better luck next year.



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SO I MARRIED A HOMEBREWER

BY DIANA DAVIS

ILLUSTRATION BY MIKE MORAN



Some people think I'm nuts. I married a homebrewer. What in the world could have possessed me to happily scamper down the aisle and into the forever loving arms of a man whose bubbling, blobbing, odd-smelling hobby has severely cut down on my personal closet space and contributed to what some of my friends call "aroma couture"?

It's not as if I didn't know what I was in for. We first lived together for almost 10 years, a fact that already had me condemned as a lunatic in some minds. I was there when the whole homebrewing hobby was started by a well-meaning family friend on his birthday. My beloved's eyes widened with joy as he unwrapped the huge mysterious package to reveal a set of white buckets, odd hoses and assorted things I still have no clue the function of. Well-meaning, sure. It wasn't *her* party dress that caught the full fury of the annual cider fermentation. I'll tell you, the smell never fully goes away, and it really is too complex an explanation to satisfy the people I meet at parties. It's easier to just let them go on with the belief that I'm either soused or devoted to one of those odd French perfumes.

I remember the premier brew well. He put pineapple guavas in it. We all learn some of the best lessons the hard way, I guess. It was an interesting beer, and I say “interesting” in the same spirit here as someone who can’t think of anything nice to say. Thank goodness he never did it again.

The pineapple guava recipe went out the window, but enthusiasm didn’t. Ha! Enthusiasm couldn’t reach the window! It’d have to climb over carboys, chillers, fermenters, secondary fermenters, spoons, skimmers, cappers, endless boxes of brown bottles, bags of caps, kegs, CO₂ tanks, hoses, pipes, fittings, sanitizing supplies, huge pots and blow-off tubes. How can we have four beers, an ale, cider and mead fermenting amid my shoes, dresses, blouses and gowns when all the equipment is out here?

The mishaps and sacrifices have been many, but at least varied and entertaining. I’m proud to say only one bottle exploded, ever. And I really never liked that leopard-print shirt Mom gave me for my birthday, anyway. I’ll miss the negligee, though. My kitchen floor is lucky it was a mottled brown pattern to begin with, and really, the dog rarely sticks to it anymore. My stovetop gave up trying to look white years ago. Our housecleaner just laughs. I’ve learned to stop asking about the mysterious crusty stains in the closet carpet around the blow-off bucket, and after a half hour of patient explaining, so has she. Although why he seems to only brew the day after she comes and uses her super powers to scour the apartment sparkly clean still remains unclear.

Really, who needs a bathtub in these rushed, modern times? Like I have time to spare for that long, relaxing bubble bath in fragrant, scented, bubbly-soft water. Even if I never use it, though, I’m proud to say it’s the most sanitary tub in the building, despite the ever-floating brown bottles, caps and collection of Dr. Frankenstein-looking glassware. My guest bathroom has doubled as a keg and equipment storage for so long, I barely blink at the arrival of a new tall metal cylinder. Besides, who else can enjoy a relaxing glass of the finest brew



**IT'S NOT AS
IF I DIDN'T
KNOW WHAT
I WAS IN
FOR.**



in the most delicate of times? It beats those boring Uncle John books. Closet space is overrated, too. And counter space. And floor space. Who needs space indoors? That’s what outside is for, right?

I admit it, I’m guilty of adding fuel to the fire. Look, he’s just easier than many guys to shop for. I jaunt down to the supply store on the off chance he’s not there, look around madly for a half hour or so, and buy the thing with the name I remember him mentioning sometime in the year. I don’t know what a refractometer does, really, but it was well received. The wort chiller was difficult to wrap, copper tubing coiled like a cobra, but it did mean I get my kitchen sink back a whole lot faster and ice was once again available in the freezer. The beer gun wasn’t as fun as it sounds like it should be, but he seems to like it. Yes, I did orchestrate the gathering of funds for the first of the kegerators, and yeah, I went out and bought an entire matching bar to go with it, but I hated the kitchen table, and eating breakfast at a bar has an element of adventure and living life “on the edge.” He didn’t flinch when I spent my Christmas bonus on a wine fridge. He didn’t dare.

I have to say, I’ve met some of the most fun people I know through his club. I’m not sure why they all have goatees, with the exception of most of the women, but they really do know how to have a good time. They are some of the most cheery, friendly people I know, even before the fourth glass.

We’re always invited to parties with our non-brew friends, too. At each fling, we’re eagerly welcomed by our hosts, who rush open-armed as we come in the door to relieve us of our heavy clinking bags and replenish the bar as quickly as they can. OK, I’m just kidding. I’m sure we’re valued as guests for more than our endless supply of free tasty brew. Mostly sure, anyhow.

I could never say I live a boring life of predictability. Who knows what I’ll find the next time I come home from work? It’s exciting, seeing those huge pots heading for the stove, never being sure exactly what he’s going to brew up or if I’m going to spend the night cleaning wort off the stove, floors, countertops and ceiling. It’s an everyday thrill guessing what the sound and smell emanating from the depths of my walk-in closet really is.

How many girls can say their father is thrilled with his son-in-law? I’ve never seen Dad’s smile so sunny as the day he found out. All of his friends are so jealous! Their sons-in-law all pale in comparison! Programmers, engineers and surgeons. Can they whip up a case of nut brown ale? What do they know of hops in their world of technology, engineering, medicine and criminal law? Those men get microchips for Christmas, sweaters for birthdays and golf clubs for Father’s Day. My Dad suppresses a smug smile as he pops the caps off a few well-matured bottles of birthday brew and lets them all taste what they’re missing.

Photos courtesy of Diana Davis

"Tell me again about your daughter's husband's hobby, Fred. Something to do with stamps? Here, let me refill your glass. Oh, don't worry, it's no trouble—they sent me up a whole case! Plenty more where that came from!" He practiced his toast for a year and practically sprinted with me down the aisle on the blessed day.

Speaking of which, thanks to the homebrew club, my bill for a completely open bar was a big, fat zero. Zilch. Nada.

Yeah, I'm the crazy one.

Diana Davis lives with her homebrewing hobby, Cullen, in Sherman Oaks, Calif. 🍷

Iron Brewer Showdown *(continued from 49)*

pint rule: Is this good enough to drink a second pint?

As Table 1 shows, the 12 entries were quite varied ranging from a Dortmund and Helles more easily made from a pilsner malt wort than the Imperial IPAs and a number of Belgian ales. The Old Ale and Rauchbier certainly took ingenuity to get pilsner malt to yield these styles with the limitations on added fermentables. All involved were amazed at the styles that were created from the same starting point.

THE WINNERS

Third place in this unique competition was Clair with his Belgian Specialty, a Unibroue Maudite clone. Second place was Ted Johnston with his Tripel. And first place was yours truly with an Orval clone. All were Belgian styles that benefited from originality as well as drinkability. The announcement of the winners took place during the awards ceremony of the Buzz Off in June. First prize was indeed a wonderful beer dinner for four featuring a number of the Iron Brewer beers. The chef had prepared a one-of-a-kind dinner with each course paired to one of the Iron Brewer beers supplied by the entrants of the competition. The menu for this special dinner is shown in Table 3. The chef's pairings were excellent, blending as if they were just made to be together.

Even better, it's become an annual event. BUZZ members once again teamed with Iron Hill, collecting wort last December 29 for the second annual Iron Brewer competition. More club members participated this time, with entries including schwarzbier, Maibock, Northern German Altbier, California Common, Imperial IPA, Belgian Specialty, Oud Bruin, Belgian Tripel, English barleywine, classic rauchbier, ECU 28 clone and an herb beer containing lemongrass and ginger. John Reagan took first place with his Northern German Altbier, Jared Spidel was second with his Belgian Specialty, while Russ Hobaugh was third with his Schwarzbier. All the beers scored in the 30s, so there was no marinade for the cook but we're sure that there will be great food to go with these beers for the winner and his guests to enjoy.

Your club and the local breweries and brewpubs can have a close and symbiotic relationship like the one BUZZ and Iron Hill enjoy. If a brewery chooses to brew the winning entry in your homebrew competition, consider entering it in the GABF Pro-Am competition. Or create your own unique project like the Iron Brewer and include your professional brewing friends in your project. We are all craft brewers and these fun projects build great relationships—and great beer.

BUZZ member David Houseman is a BJCP Grand Master III certified judge and competition director for the BJCP as well as a regular contributor to the Commercial Calibration department in Zymurgy. He lives in Chester Springs, Pa. 🍷



TABLE 3: IRON HILL BEER DINNER MENU

Cheese Plate

Ossau iraty (French sheep's milk)
Farmhouse cheddar (Massachusetts)
Groundhog Orval Clone, David Houseman

Angel Hair Pasta

Red snapper, shrimp, clams and basil pesto sauce
Belgian Tripel, Ted Johnston

Grilled Beef Tenderloin Medallions

Sour cream smashed red skin potatoes
Asparagus spears, smoked Vidalia onion-portobello relish, marsala wine sauce
Classic Rauchbier, Bob Purrenhage

Old Fashioned Oatmeal Cake

Served warm with vanilla ice cream
Old Ale, Russ Hobaugh



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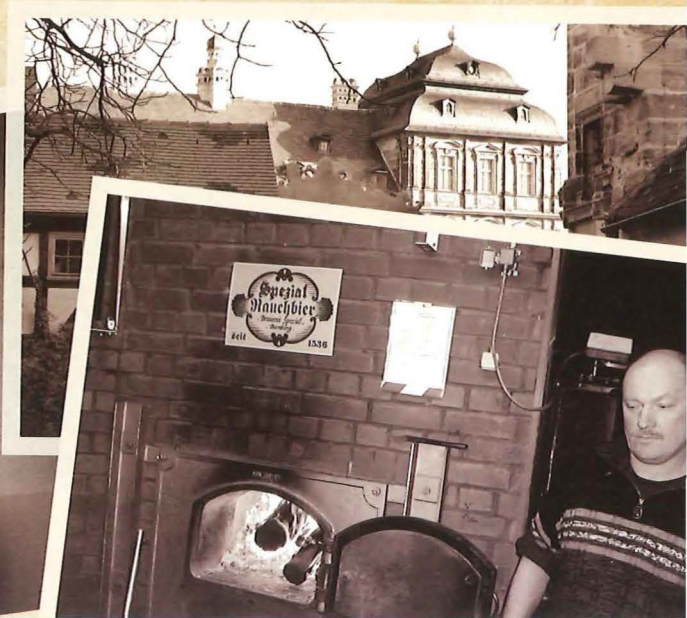
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Secrets of Brewing Better Lagers

By Steve Holle





In March 2006, I spent a week with three brewers touring nine breweries in Bamberg and Munich, Germany. Many of the breweries, especially in Bamberg, are small with aging equipment cobbled together over decades and crammed into centuries-old buildings with less than ideal floor plans for a modern brewery. Cleaning protocols often include only a brush and elbow grease, and fermentation is sometimes conducted in open fermenters. Yet, in spite of these challenges, each brewery produces great beer.

However, these breweries also use another safeguard. They ferment with lots of healthy yeast at cold temperatures. Each of the small breweries we visited obtains fresh yeast from a larger brewery nearby because they do not have the time, space or financial capacity to propagate their own yeast. The large breweries seem unconcerned about safeguarding a proprietary yeast strain. The yeast is treated just like any other ingredient. In fact, many of the brewers did not even know the specific yeast strain they were buying.

Lager yeast works and multiplies more slowly than ale yeast because the cooler fermentation temperature slows down the yeast's metabolic activity. This is the reason that brewers use larger quantities of pitching yeast for lagers compared to ales (typically 50 to 100 percent more yeast!). The Bamberg breweries usually obtain their yeast in sterile milk cans immediately before brewing and then pitch directly into the brew. Their pre-pitching protocol, if any, is usually limited to mixing the yeast slurry with a slotted spoon to homogenize and aerate.

Because the brewers pitch liquid slurries without counting cells, none of them knows (or seems to care) what pitching rate they use. They simply know what works best and repeatedly pitch the same volume of yeast. While measuring yeast cells based on volume can be inaccurate because the density of cells varies greatly from slurry to slurry, it appears they are pitching very high cell rates.

The German author Kunze uses a rule of thumb that 0.5 liters of thick slurry in 1.0 hectoliters of wort produces a pitching rate of 15 million cells/mL. Using this standard, it is evident that most of these brewers use pitching rates in excess of the normal 15-20 million cells/mL in use in many German breweries.

A high pitching rate allows for a rapid onset of fermentation that quickly lowers the pH of the green beer to an acidic environment inhibitory to many spoilage microbes. Large quantities of healthy yeast also rapidly consume oxygen and nutrients that feed slower growing spoilage microbes.

The combination of low pH, low nutrient levels, low oxygen, hop alpha acids, and increased levels of CO₂ and alcohol combine to create a hostile environment for unwanted bacteria and wild yeast.

Over-pitching can lead to its own problems (e.g. aging cells that lose their vitality and flavor characteristics), but these problems are typically only a concern when repitching over many generations. Serial repitching is a practice homebrewers can rarely employ because they don't brew often enough. Therefore, over pitching for homebrewers should rarely be a concern. Rather, homebrewers almost always under pitch according to commercial standards.

Our Bavarian brewers appear to avoid problems from over pitching by discarding the yeast after one or only a few brews, and frequently obtaining a fresh slurry. Through experience, brewers can tell how many times they can repitch before the beer flavor changes. Frequently introducing new pitching yeast helps ensure a vital (healthy) and viable (alive) yeast population for each batch. Furthermore, replacing the pitching yeast with one from a larger, more sophisticated brewery with higher sanitation standards helps the Bamberg brewers minimize the risk of infection from an open fermenter or unsanitary pipe work.

Finally, the brewers use traditional cold fermentation. Lager beer first gained popularity in medieval times because of its clean taste and stability. When Bavarian

Open fermenter at the ultra-modern Paulaner Brauhaus brewpub in Munich.



monks unknowingly selected yeast that could ferment at cold temperatures, they reduced the number of spoilage microbes that could survive only in a warmer environment. When beer was fermented cold and stored cold, it remained stable longer before souring.

Cold Fermentation

Our Bavarian brewers use traditional fermentation temperatures that include the following parameters. They chill the wort to 6-8° C (43 to 46° F) before they pitch yeast. More oxygen can be dissolved at cold temperatures, and traditional brewers believe cold starting temperatures produce a more pleasant taste. After pitching, the wort temperature free rises to 8-10° C (46 to 50° F) where it remains for about a week. After primary fermentation, the wort, with about 1.5° Plato of fermentable extract, is transferred to lagering tanks where the temperature is gradually reduced at a rate of 1° C per day to 1 or 2° C for four to six weeks of lagering. The gradual cooling prevents temperature

shock that would slow the yeast metabolic activity. During the lagering phase in sealed tanks, the yeast ferments the remaining extract, carbonates the beer, and reduces the green beer flavors of diacetyl (butter) and acetaldehyde (green apples/cider). Using naturally produced CO₂ is a requirement of the Reinheitsgebot (Germany purity law).

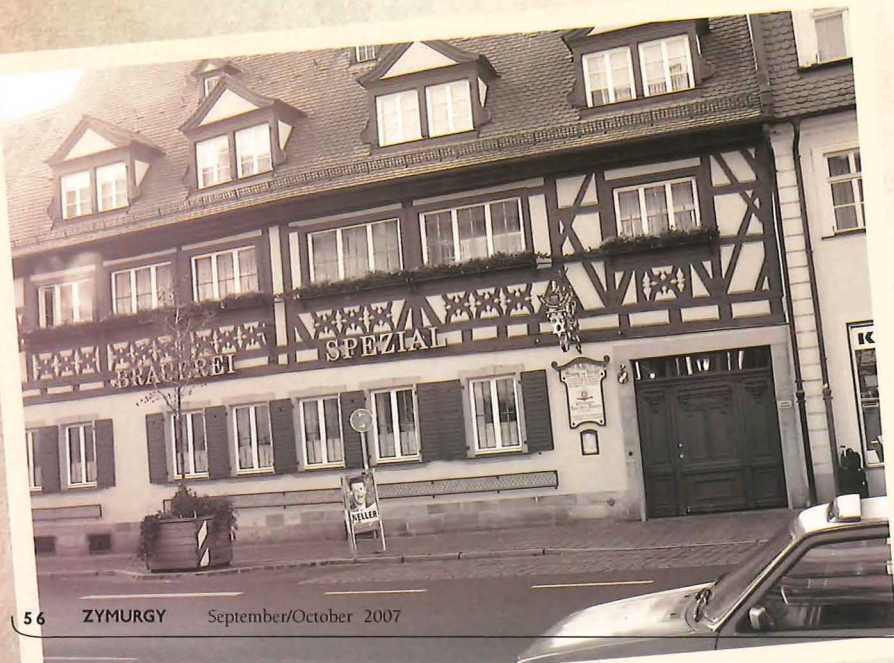
The cold temperature reduces the yeast's propensity to create fruity esters and spicy fusel alcohols that are signature characteristics of warm fermented ales. The characteristic crisp lager flavor is not so much due to the lager yeast's inability to produce esters and fusel alcohols, but more the fact that lager yeast ferment at temperatures at which ale yeast becomes inactive. In fact, lager yeast fermented at room temperature may produce high levels of esters and fusel alcohols like an ale yeast.

For this reason, the common homebrewer practice of pitching lager beers at room temperature and letting the green beer slowly cool to 10 to 11° C (50-52° F) can create problems. This suspect practice is popular because homebrewers typically under pitch, and the yeast will multiply more quickly at warm temperatures to compensate for the inadequate pitching rate; however, many unwanted flavor compounds are produced during the initial days of warm temperature and the beer can lose its signature lager character.

Homebrewing Tips

For homebrewers, brewing authentic lagers is a challenge for two reasons. First, there is the investment in a refrigerator

Bamberg, Brauerei Spezial, which also includes a hotel and Gasthaus.



Photos courtesy of Stephen Holle and Jim Parker

and probably an external thermostat. Secondly, there is the challenge of propagating enough yeast to produce an effective cold temperature fermentation.

Unless the brewer is prepared to pay for massive amounts of yeast slurry, the preparation of a starter is required. The question is how large must the starter be to produce enough pitching yeast? For a lager, a crude rule is to pitch a starter equal to at least 15 percent of the volume of wort to be fermented. That means for a 10-gallon batch, a 1.5-gallon starter is needed. (The sidebar accompanying this article provides more details on how to estimate the required pitching rate.).

To produce successful lager fermentations, homebrewers should always pitch enough yeast, aerate thoroughly, ferment at a cool temperature (10-11° C or 50-52° F), and give the beer enough lagering time so the yeast can eliminate young beer flavors.

A modern lagering technique (frowned upon by some brewing purists in Germany) is a diacetyl rest. Diacetyl is a buttery-tasting compound produced by yeast during primary fermentation and reduced by yeast during lagering. Yeast are more active at higher temperatures and can, therefore, reduce diacetyl more quickly and effectively when the temperature at the end of fermentation is allowed to rise to 20° C (68° F) for one-and-a-half to two days before cooling, racking and lagering at traditional cold temperatures. In theory, warm temperatures at the end of primary fermentation are less likely to produce fruity flavors than at the beginning of fermentation.

In judging homebrew contests, my overwhelming experience has been that most defects are related to poor fermentation management. If new homebrewers, in general, followed the example of these Bamberg brewers and pitched more healthy yeast, aerated their wort more effectively and controlled temperatures more precisely, the quality of their beer would improve dramatically.

Stephen R. Holle is an IBD Diploma Brewer, Great American Beer Festival judge and member of the North Texas Homebrewers Association.



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Yeast Propagation Basics

The following method of estimating pitching rate is based on a reasonable guess about how many yeast cells/mL of wort will be produced after the yeast stop multiplying. The assumptions are general and the number of cells produced can vary greatly by yeast strain and propagating conditions. Unless the brewer is prepared to count cells with a microscope, the following method is a reasonable, albeit less accurate, alternative.

In a 12° Plato wort that is adequately aerated, yeast typically multiply to a maximum density of 80 to 100 million cells per milliliter. For simplicity, our calculations will simply assume that our starter contains 100 million cells/mL.

Major factors that increase yeast cell growth are 1) increased temperature, 2) aeration, 3) stirring, and 4) yeast nutrients, especially amino acids and zinc. If the brewer really wants to get fancy, he or she can use a stir plate, continuously aerate the wort with an aquarium pump and sterile air filter, and add a yeast nutrient.

However, good results can be achieved by simply shaking the propagating vessel vigorously to initially aerate the wort, followed by intermittent swirling that 1) mixes the yeast and wort nutrients, 2) liberates inhibitory CO₂, and 3) intermittently aerates the wort to replace oxygen consumed by the multiplying cells. Once fermentation starts and significant CO₂ is produced, the opportunity to meaningfully aerate the wort is lost, but mixing still promotes growth. Theoretically, all of these factors should allow the brewer to approach the target 100 million cells/mL.

A stirred propagation is easily accomplished in an Erlenmeyer flask or glass jug with a sterilized foam stopper or cotton wad in the neck. The foam or cotton stopper will allow air to enter the flask for aeration, filter out airborne contaminants, and allow CO₂ to dissipate.

As previously explained, lager beer, due to cooler temperatures, requires a higher

pitching rate than ale. For a normal gravity beer of 12° Plato (1.048), a generally accepted pitching rate for ale is 10 million cells/mL, and for lager, 15 million cells/mL. The pitching rate is dependent on many factors and may vary from strain to strain. In particular, some ale yeasts may perform well at rates as low as 5 million cells/mL.

Assuming the starter contains 100 million cells/mL, allows for this simple rule of thumb: If the starter volume equals "X" percent of the volume of wort to be fermented, "X" million cells/mL of wort will be pitched.

Ale: A starter volume equal to 10 percent of the wort volume in the fermenter will provide a pitching rate of approximately 10 million cells/mL. For example, a starter of 0.5 gallons pitched into a 5-gallon batch would provide a pitching rate of 10 million cells/mL. (Likewise, if a lower pitching rate is desired, a 1-gallon starter pitched into a 20-gallon batch would provide a pitching rate of 5 million cells/mL.)

Lager: A starter volume equal to 15 percent of the wort volume in the fermenter will provide a pitching rate of approximately 15 million cells/mL. For example, a starter of 1.5 gallons pitched into a 10-gallon batch would provide a pitching rate of 15 million cells/mL.

However, the pitching rate needs to increase as the starting gravity of the beer increases because the yeast must work harder to ferment more sugar, and correspondingly, higher alcohol levels also stress the yeast. Therefore, it is prudent to increase the starter volume by the percentage increase in wort gravity above 12° Plato (1.048). For example, if the gravity increases by 50 percent from 12° Plato to 18° Plato (1.048 to 1.074), increase the starter volume by 50 percent, e.g. $(18 - 12) \div 12 = 50$ percent.

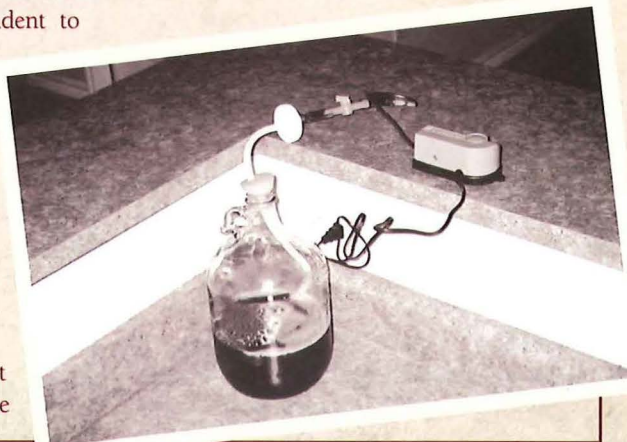
The entire starter, beer and yeast together, may be pitched into the

wort, usually at high krausen since this is when the yeast is in its most active state. However, some homebrewers, especially when making a lager beer, may be concerned that the large volume of beer in the starter may adversely affect the flavor of the beer. Because the starter was fermented warm and aerated constantly, the starter may be oxidized and contain non-lager flavors. If this is a concern, the following technique may be useful. (When brewing an ale, pitching the starter directly into the wort may be less of a concern because of the smaller starter volume, but personal experience (i.e., taste) should determine your choice.)

To remove the unwanted oxidized beer, let the starter wort fully ferment and the yeast settle out one to two days before brewing. Store the starter at the temperature at which it will ferment. This will acclimatize the yeast to its future environment. On brew day, siphon, or carefully decant, the beer from the starter, then add to the remaining slurry a small volume of sterile wort (say 10 percent of the original starter volume). Swirl the yeast to mix and aerate. Store the starter at the fermentation temperature while you finish brewing. When the yeast slurry is pitched into the wort a few hours later, it should be at high krausen, which will help ensure a quick onset of fermentation.

—Stephen R. Holle

One-gallon jug equipped with an aquarium pump and sterile air filter for continuous aeration.



Munich's Union Bräu

The most fascinating brewery that I visited on a 2006 trip to Munich and Bamberg was the brewpub Union Bräu on Max-Weber-Platz in Munich. In an attempt to replicate an old-fashioned brewery, Union Bräu operates one of the most archaic commercial brewing systems I have seen. Yet the brewery was able to produce very good beers, which I credit to the power of yeast and a fastidiously clean brewer.

Union Bräu is an excellent working museum that demonstrates how beer was made 100 years ago. Here is a quick rundown of the 10 hL (8.5-barrel) brewery.

Approximately 8 hL of water is mashed with 200 kg of malt (4:1 water to grist ratio by weight) in a combination gas-fired mash tun and kettle. The loose mash is conducive to the stirring that equalizes the mash temperature during the stepped infusion mash program. Acidification of the mash is accomplished with an addition of acidulated malt (Sauermais).

After starch-to-sugar conversion over a two-hour period at traditional temperature rests at 50° C (122° F), 62° C (144° F), 72° C (162° F), and finally mash out at 78° C (172° F), the mash is pumped to the lauter tun. The now empty mash tun/kettle is cleared of spent grains to accept the runnings from the lauter tun. After collecting the runoff from the lauter tun over a two-hour period through the addition of two 3-hL batch sparge water additions, 12 hL of kettle-full wort is boiled for one hour and 20 minutes. During the boil, four additions of whole hops are made. The cast out wort to the fermenter is 10 hL.

Since the whirlpool is a relatively modern discovery, Union Bräu doesn't have one. Consequently, the knockout wort is clarified by pumping the hot wort back into the lauter tun. The whole hop leaves are allowed to settle onto the false bottom where they act as a filter to separate the wort from the hot break.

The clarified hot wort is cooled and aerated by cascading it down a 100-year-old corrugated copper-cooling tower

(Berieselungskühler) chilled by cold water pipes inside the tower. The cooled 4° C wort runs into a floor drain and is pumped into an open wooden fermenter located in a self-contained fermentation room. The remarkable characteristic of the cooling tower is its location adjacent to the mill room where malt dust is a constant potential source of contamination, especially from lactobacillus bacteria commonly found in malt. Some type of impervious coating covers the inside of the wooden

fermenters, which is cleaned with a hand brush and a phosphoric acid-based cleaner.

The brewery provides several points for microbial contamination of the wort and beer. First, pumping the knockout wort back into the lauter tun exposes the wort to possible contamination, although the wort at this point is probably hot enough to destroy most contaminating microbes. However, the cooling tower exposes the chilled wort to airborne contaminants.

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Furthermore, the chilled wort collecting port in the floor is extremely unnerving. The beer ferments in open wooden fermenters at 6 to 8° C, or about 2° C cooler than most breweries. The green beer's only protection is its location in a self-contained room to limit the movement of airborne contaminants and the very cold fermentation. While open fermenters are rare in the U.S., they are not uncommon in Bavaria.

The brewery buys its yeast from Loewenbräu and pitches 1 kg of yeast slurry per 1 hl of wort. This equals

approximately 30 million yeast cells per ml of wort or about two times the conventional pitching rate. Without this massive quantity of yeast, I doubt the brewery could ferment successfully at the very cold temperatures it employs.

After about a week of primary fermentation during which the beer is fully fermented, it is mixed with partially attenuated green beer and pumped into stainless steel lagering tanks where it is lagered at near 0° C and carbonated by trapping the naturally produced CO₂ from the second-



Steve Holle, Yasubumi Sawamura, and David Bryant of The Brewing Science Institute

ary fermentation. The beer is then racked into lined wooden casks for serving.

My hero, Japanese-born and German-educated brewer Yasubumi Sawamura, spends two days brewing and three days cleaning each week. Yasubumi said he initially believed that he could never brew contamination-free beer when he first started working at Union Bräu. Yet he said he has never had an off-tasting beer, which is a tribute to his hard work since the whole brewery must be cleaned by hand. Secondly, the fact that he uses a large quantity of yeast ensures that the yeast can overwhelm and crowd out spoilage organisms. Finally, the cold temperatures inhibit the growth of other organisms because their metabolism and growth are drastically reduced by the cold.

Today, lager yeast are prized because they can ferment at cold temperatures and thereby produce fewer esters and higher alcohols than warm-fermenting ale yeast. In medieval times, when monks unknowingly isolated lager yeast by naturally selecting it when they fermented and stored their beer in caves cooled by lake ice, these beers gained favor because they were more biologically stable. In other words, they were less susceptible to off-flavors produced by bacteria and wild yeast that thrive in warmer temperatures. The reduced content of aromatic esters and fusel alcohols were of much less significance than the fact that the lager beer was less likely to go sour.

In this regard, Union Bräu is a throwback to the original attraction of lager yeast—it could produce clean-tasting, spoilage-resistant beer without the application of modern sanitation practices. The quality beer served at Union Bräu is a testament to the historic power of lager yeast and the dedication of one highly motivated brewer.

—Stephen R. Holle

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One way beer judges check their palates is by using commercial "calibration beers"—classic versions of the style they represent. Zymurgy has assembled a panel of four judges who have attained at least the rank of Master in the Beer Judge Certification Program. Each issue they will score two widely available commercial beers (or meads or ciders) using the BJCP scoresheet. We invite you to download your own scoresheets at www.bjcp.org, pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration.



With Oktoberfest on our minds, German malts were in the forefront for our judges for this issue. First up was Gordon Biersch's most popular beer, Marzen. While many *Zymurgy* readers might be familiar with the Gordon Biersch brewpubs that are scattered across the country, this beer came from the Gordon Biersch production brewery in San Jose, Calif. Gordon Biersch describes its Marzen as a smooth, mildly sweet, auburn-colored lager with 5.7-percent abv.

Oktoberfest beer is also referred to as Marzen. In Bavaria, it was brewed in March (Marzen in German) and stored in caves to be enjoyed during warmer weather. At the end of September, any remaining kegs of Marzen were consumed during the two-week celebration that became known as Oktoberfest.

Our judges liked the Marzen due to its malty richness but also found it to have a hoppy edge, "reflecting the West Coast source," mused panelist Beth Zangari.

Next up was a Belgian-style beer, Golden Monkey from Victory Brewing Co. in Downingtown, Pa. Golden Monkey is brewed with two-row German malt and Belgian yeast, and hovers between a Belgian Golden Strong Ale and a tripel, although it was judged as the latter.

"Strong and sensual, this golden, Belgian-style ale glows with goodness," says the Victory Web site. "The richness of German malts and Belgian yeast are tempered by a sparkling approach and overall light body. Considerable depth of character with abundant herbal, fruity notes make this one to savor."

Golden Monkey checks in at 9.5-percent abv, and panelist Gordon Strong said Golden Monkey is "good enough to be added to the BJCP Style Guidelines as a classic example." Panelist David Houseman recommends serving Golden Monkey at 55-60° F to "truly enjoy the complexity."

Our expert panel includes David Houseman, a Grand Master III judge and competition director for the BJCP from Chester Springs, Pa.; Beth Zangari, a Grand Master level judge from Placerville, Calif. and founding member of Hangtown Association of Zymurgy Enthusiasts (H.A.Z.E.); Scott Bickham, a Grand Master II judge from Corning, N.Y., who has been exam director or associate exam director for the BJCP since 1995; and Gordon Strong, a Grand Master III judge, BJCP president and principal author of the new BJCP Style Guidelines who lives in Beavercreek, Ohio.



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Gordon Biersch Brewing Co.
www.gordonbiersch.com

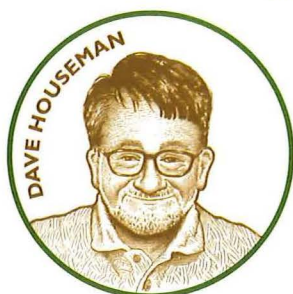
Victory Brewing Co.
www.victorybeer.com

BJCP Style Guidelines
www.bjcp.org



Gordon Biersch Marzen—Gordon Biersch Brewing Co., San Jose, Calif.
BJCP Category: 3B Oktoberfest/Marzen

THE JUDGES' SCORES FOR GORDON BIERSCHE MARZEN



Aroma: Pils and Vienna malt richness with moderate corn-like DMS. Very light toasted malt character. Slight peppery-spice note. No diacetyl. Alcohol not particularly evident. No fruity esters—clean lager fermentation. (9/12)

Appearance: Brilliant clarity. Amber with an orange tint. Adequate tan head falls fairly rapidly leaving some foam on the edge of the glass. (3/3)

Flavor: Light toasted maltiness with hints of chocolate. Rich melanoidins without caramel sweetness. Sufficient spicy hop bitterness to balance yet emphasize the malty, dry finish. Malt is not as soft and elegant as expected due to hop bitterness. Very low hop flavor—OK. No diacetyl. Light DMS. No esters. Finish is quite dry with chocolate malt notes. Spiciness finishes in flavor almost as a mild clove-phenol. (14/20)

Mouthfeel: Smooth; not creamy. Hop bitterness provides an edge to the maltiness. Drying mouthfeel from this medium bodied beer. Fairly highly carbonated—proper for style. (4/5)

Overall Impression: Quite drinkable Marzen that challenges some of its German cousins. Drying finish is a bit over the top even though the style should not be sweet. A few gravity points higher or a few less IBUs of bittering hops would help emphasize the maltiness and contribute to an even better drinking experience. Still, this would be great with Wiener Schnitzel and spaetzle. (7/10)

Total Score: (37/50)



Aroma: Roasty malt with fresh, bready character and clean fermentation. Very low dark chocolate undertone. No evident hop aroma. (9/12)

Appearance: Orange-amber with brilliant clarity. Tight pearly off-white, long-standing head forms of fine bubbles. (3/3)

Flavor: Rich toasty sweet full malt flavor with hint of smoke. Crisp balancing hop bitterness and slight cinnamon spicy hop flavor. Malt character becomes more toasty as the beer warms, with a bit of crystal flavor coming forward. Malt dominates. Clean fermentation; crisp finish with a lingering low hop bitterness. (15/20)

Mouthfeel: Medium full body with rounding medium carbonation. Some alcoholic warmth, but finish is crisp and somewhat dry. (5/5)

Overall Impression: Bottle notes suggest this beer is traditionally consumed during warm weather—which in the West lasts long into autumn. The malty sweetness and toasty quality were pleasantly more pronounced than expected, and the alcoholic warmth places this example toward the more festive side of the style. Though it has a little more hop bitterness, reflecting the West Coast source, perhaps, it stands up well against the traditional German examples (like Hacker-Pschorr). Very rich and enjoyable on its own or with roast chicken and spinach salad with hot bacon dressing. (7/10)

Total Score: (39/50)



Aroma: Toasted malt up front, just a hint of earthy roasted malt underneath. No caramel malt or hop, as appropriate. Esters are appropriately restrained. There is a bit of a papery, musty character that combines with the malt to lend a slight smokiness. (9/12)

Appearance: Brilliant clarity, as expected for a lager. Orange-copper color is on target for a traditional version of the style. Head retention is good, but not stellar—fades a little too quickly into scattered flecks of foam. (3/3)

Flavor: Firm toasted and biscuit malt notes, complex but not overly sweet. Roasted malt—perhaps dark Munich malt—comes through in the finish, which is a little on the dry side. No esters, and hops are only present as a balancing bitterness. The finish has a slight chalkiness and although there is a touch of oxidation, it does not detract too much from the smoothness. (16/20)

Mouthfeel: Slight astringency from roasted malt lingers a little too strongly, slight alcoholic warmth. Carbonation could be slightly higher. (4/5)

Overall Impression: Very nice beer that is only a minor tweak away from excellence. The Munich malt and slight roastiness remind me of some North German Altbiers, but the clean fermentation profile is clearly in the lager domain. A little less roast—perhaps a lighter Munich malt—would reduce the astringency and soften the finish. (7/10)

Total Score: (39/50)



Aroma: Toasty malt aroma—moderately strong, slightly sweet, very light caramel. Light spicy hops, and a soft sulfur aroma typical of many lagers. Clean and elegant. (10/12)

Appearance: Amber-orange color. Tall ivory head—mousse. Head retained well. Clear. (3/3)

Flavor: Toasty malt flavor starts slightly sweet but quickly turns dry, which lasts through the finish. Very clean lager fermentation character. Medium bitterness seems a little high for the style, but the dryness accentuates the bitterness. The malt flavor is perfect for the style. Slight sulfur in the finish. (17/20)

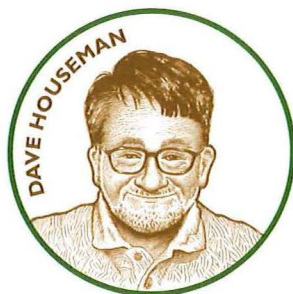
Mouthfeel: Medium body. Medium-high carbonation—somewhat high for the style. Slightly acidic finish, possibly from the higher carbonation. The bubbles tend to interfere with the malt flavors. (4/5)

Overall Impression: Seems a bit too bitter and/or too dry, but is very close to authentic German versions. The carbonation could be lower. Very tasty malt profile. The sulfur is a touch high, which suggests that longer lagering might improve the flavor profile. To my taste, the malt dried out too quickly; I would have preferred the malty flavors to linger on the palate longer. (8/10)

Total Score: (42/50)



THE JUDGES' SCORES FOR VICTORY GOLDEN MONKEY



Aroma: Spicy, peppery aroma up front. Light, pilsner maltiness with light fruity esters. No hop aroma. No DMS. No diacetyl. Some alcohol notes, more noticeable as the beer warms. No fusels. (10/12)

Appearance: Highly effervescent. Golden color. Substantial haze at serving temperature. Thick, long-lasting, white head. (2/3)

Flavor: Sweet pilsner maltiness initially with a peppery spiciness reminiscent of grains of paradise rather than yeast-produced phenols or particularly spicy hops. Alcohol is very evident but not hot and without fusels and contributes to the overall sweetness. Low yeast produced phenols and only moderate esters. Dry finish with a moderate bitter aftertaste. No diacetyl. Sweet malt yet dry finish provides for an interesting complexity that's not the most complex of Tripels but one of the most enjoyable. (17/20)

Mouthfeel: Medium bodied, a bit full for a style that is typically lighter given the high gravity. Some alcohol warming. High carbonation results in an overall lively mouthfeel. Creaminess is evident. (4/5)

Overall Impression: High alcohol (9.8-percent abv) makes this a sipping beer for me, something to be enjoyed with a goat cheese appetizer, garlic-mayonnaise fries or steamed mussels (both steamed in the Golden Monkey and enjoyed with the mussels). I personally like the fruitier Tripels but this is very drinkable since it is drier and more "digestible" than many. Serve at 55-60° F to truly enjoy the complexity. (9/10)

Total Score: (42/50)



Aroma: Sweet orange and lightly acidic lemony esters; biscuity malt, with some grassy notes and an expression of clove spice phenols. No overt hop aroma. (8/12)

Appearance: Brilliant golden, fine foam forms biscuity, persistent head with a pearly off-white surface. Fine bubbles continually rise; foam leaves lace on sides of the glass. (3/3)

Flavor: Complex, with lots of citrus, pear, banana and Double Bubble gum, with allspice phenols mid-palate. Light, crisp malt flavor is dominated by fruit and spice. Alcohol flavor is present with some acetate notes in the finish. No hop flavor, but balancing bitterness lingers at the end. (16/20)

Mouthfeel: Alcoholic warmth, medium light body with effervescent, prickly carbonation, and clean crisp finish. (5/5)

Overall Impression: Billed as a Belgian Tripel, the higher, more evident alcohol and more pronounced fruit and spice are more appropriate to a Belgian Golden Strong Ale in my humble opinion. Lots of fruit and spice up front. Aromas of citrus, but banana and pear in the flavor give greater complexity than is suggested by the initial impression. This is a wonderful fruit and cheese after-dinner drink, or a favored replacement for champagne at a Sunday brunch. Refreshing, but not light in the modern sense. (7/10)

Total Score: (39/50)



Aroma: Bready malt with a pleasant sugary character and a touch of honey and vanilla. Moderate pear and banana esters with some clove phenols. Alcohol is a little more assertive than in most Tripels. (9/12)

Appearance: Golden-bronze in color, with some haze from the yeast being roused during shipping. Head retention is good but carbonation is a little low for the style (but not enough to warrant a deduction). (3/3)

Flavor: Complex spectrum of flavors. Sugary malt up front with just enough dextrins to support the yeast contributions without being cloying. There is a little more emphasis on clove in the flavor compared to the aroma, but the same components are present here. The bitterness is elevated due to the alcohol and phenols—hop contribution is at the appropriate level, and there is an interesting woody/oak character in the finish. (16/20)

Mouthfeel: There is some alcoholic warmth, maybe a little more than expected, and the finish is a little harsh due to some astringency. A slightly higher carbonation level could lighten the body a little. (3/5)

Overall Impression: Very enjoyable Belgian-style ale. I would rate it a few points higher as a Golden Strong—closer to Duvel than Westmalle. My notes from a previous tasting of this beer mention that I found it a little cloying, but that was not at all the case in this sample. The balance is very good, and there are many layers of complex flavors that give it an interesting profile. One bottle was not quite enough, but I can remedy that easily enough now that it is being sold in my local grocery store. (7/10)

Total Score: (38/50)



Aroma: Pils malt aroma with a sugary sweetness—moderately strong. Light spice of hops and/or phenols plus a soft alcohol warmth. Very light esters. The pils malt dominates the other aromatics. (9/12)

Appearance: Tall, frothy white head, retained well. Somewhat cloudy, which detracts from the visual impact. Medium yellow color. (2/3)

Flavor: Sweet, clean pils malt, finishing medium-dry. Medium bitterness, which is lower than most Belgian examples but may be more suitable for American palates. Spicy flavor; moderate hop flavor with yeasty phenols. Fresh. Light alcohol flavor. Yeast complexity is restrained. Very light esters. (15/20)

Mouthfeel: Highly carbonated with mouth-filling bubbles. Medium-light body, but seems a little fuller with all those bubbles. Warming but not burning. (4/5)

Overall Impression: Better than most American versions but falls short of the dry bitterness and complexity of the best Belgian examples. However, it is very deceptive in its 9.5-percent strength—that is certainly true to the classic Belgian character. I remember this beer as being much sweeter in the past. I commend Victory for moving it closer to the classic profile. It's now good enough to be added to the BJCP Style Guidelines as a classic example. (7/10)

Total Score: (37/50)



AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR



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**August 24**

Colorado State Fair Homebrew Competition
Pueblo, CO. Contact: Deborah Wallace. Phone: 719-404-2080, E-mail: debbie.wallace@ag.state.co.us Web: www.coloradostatefair.com

August 25

LA County Fair Commercial Beer Competition Pomona, CA. Contact: Michael Cullen. Phone: 562-425-0588, E-mail: mcullen@calferm.org Web: www.calferm.org

August 26

Chelan County Fair Cashmere, WA. Contact: Travis Blue. Phone: 509-548-2379, E-mail: travisblue@hotmail.com, Web: www.co.chelan.wa.us/fa/index.htm

August 26

The Bruery Batch No. 01 Competition
Placentia, CA. Contact: Patrick Rue. Phone: 714-400-6092, E-mail: patrick@thebruery.com Web: www.thebruery.com

September 1

Michigan State Fair Home Brewing Competition Detroit, MI. Contact: Phil Kitkowski. Phone: 248-735-5596, E-mail: msf.homebrew@gmail.com Web: www.msffhomebrew.org

September 1

Byggvir's Big Beer Cup Shakopee, MN. Contact: G.L. (Gera) Exire LaTour. Phone: 612-636-9014, Contact: gera_latour@hotmail.com Web: www.rennfestbeercup.com

September 8

Santa Cruz County Fair Homebrew Competition Watsonville, CA. Contact: Mia Bossie. Phone: 831-336-4569, E-mail: bossies@cruzio.com Web: www.santacruzcountyfair.com

September 8

AZ Society of Homebrewers 13th Annual Oktoberfest Tempe, AZ. Contact: Barry Tingleff. Phone: 480-839-3988, E-mail: beer_me2@msn.com Web: www.azhomebrewers.org

September 8

Malt Madness Allentown, PA. Contact: Al Hazan. Phone: 570-421-1479, E-mail: hazan@ptd.net Web: www.lehighvalleyhomebrewers.org

September 8

Blue Ridge Brew Off Asheville, NC. Contact: David Keller. Phone: 828-691-1816, E-mail: bat-dave@blueridge.net Web: www.malt-nc.com

September 8

Topsfield Fair Homebrew Competition
Topsfield, MA. Contact: Dick & Karen MacPherson. Phone: 978-774-7404, E-mail: dickmac@comcast.net Web: www.northshorebrewers.org

September 9

Tulare County Fair Homebrew Competition
Tulare, CA. Contact: Bert McNutt. Phone: 559-592-8175, E-mail: bert@tchops.org Web: www.tchops.org

September 9

Great Frederick Fair Frederick, MD. Contact: Mike Lamb. Phone: 301-676-2053, E-mail: fredfairbrew@yahoo.com Web: www.fredfairbrew.com

September 15

Schooner Homebrew Championship Racine, WI. Contact: Rick McNabb. Phone: 262-878-1008, E-mail: yankeehomebrewer@sbcglobal.net Web: www.theschooner.org

September 15

River City Roundup Fair & Festival Omaha, NE. Contact: John Fahrner. Phone: 402-733-3586, E-mail: jfahrner1@cox.net Web: www.rivercity-roundup.org/dcf/beer

September 15

12th Annual Dayton Beerfest Beavercreek, OH. Contact: Ronald Roberts. Phone: 937-429-6899, E-mail: rrtemp@sbcglobal.net Web: www.hbd.org/draft

September 16

State Amateur Brewers Show of South Australia Adelaide, South Australia, AU. Contact: Mike Leupold. Phone: 61 08 8278 6696, E-mail: mikehal@picknowl.com.au Web: www.sabsosa.com

September 22

Commander SAAZ Interplanetary Homebrew Blastoff Cocoa Beach, FL. Contact: Glenn Exline. Phone: 321-636-6925, E-mail: gexline@saaaz.org Web: www.saaaz.org

September 28

FOAM Cup Tulsa, OK. Contact: Dave Knott. Phone: 918-461-2605, E-mail: dave@highgravity-brew.com Web: www.alemakers.com

September 29

Mid South Fair Memphis, TN. Contact: Jeannie Parrish. Phone: 901-495-8733, E-mail: john.moranville@autozone.com Web: www.midsouthfair.org

October 6

12th Annual Music City Brew Off Nashville, TN. Contact: Tom Vista. Phone: 615-207-2952, E-mail: hoppod@hotmail.com Web: www.musiccity-brewers.com

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VicBrew 2007, Victorian Amateur Brewing Championship Melbourne, Victoria, AU. Contact: Mark Hibberd. Phone: +61 03-9580 0372, E-mail: mhibberd@melbpc.org.au Web: www.vicbrew.org

October 9

AHA Club-Only Competition Bock Dallas, TX. Contact: Larry Kemp. Phone: 817-595-3511, E-mail: kempbrewing@aim.com Web: www.beer-town.org/homebrewing/schedule.html

October 19

Dixie Cup XXIV Houston, TX. Contact: Doak Procter. Phone: 281-274-5948, E-mail: dixiecup@foamrangers.com Web: www.crunchyfrog.net/dixiecup

October 20

Pacific Brewers Cup San Pedro, CA. Contact: Robert Wise. Phone: 714-828-4709, E-mail: wise.robert@epa.gov Web: www.LBHB.org

October 20

Valhalla: The Meading of Life Philadelphia, PA. Contact: Suzanne McMurphy. Phone: 215-753-7211, E-mail: theimann@verizon.net Web: www.valhalla-mead.com

October 21

Devil's Thumb Home Brew Festival Petersburg, AK. Contact: Petersburg Chamber of Commerce. Phone: 907-772-3646, E-mail: nancy@vikingtrvl.net Web: www.petersburg.org

October 21

National Organic Homebrew Challenge Santa Cruz, CA. Contact: Amelia Slayton. Phone: 831-454-9665, E-mail: 7bridges@breworganic.com Web: www.breworganic.com/competition

October 27

Queen of Beer Women's HBC Placerville, CA. Contact: Elizabeth Zangari. Phone: 530-626-1941, E-mail: bierbeth@yahoo.com Web: www.haze-club.org

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Sunshine Challenge 2007 Orlando, FL. Contact: Michael Urban. Phone: 407-977-5494, E-mail: mjurban@cfl.rr.com Web: www.cfhb.org

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TRUB Open Durham, NC. Contact: Jason Alarcon. Phone: 919-624-2058, E-mail: jason@kge.org Web: www.trubclub.com/index.html

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Oktober's Best Zinzinnati Cincinnati, OH. Contact: Rick Franckhauser. Phone: 513-921-4945, E-mail: franckenbrew@yahoo.com Web: www.maltinfusers.org

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Oktoberfest and German Beer Festival
Dromana, Victoria, AU. Contact: Rodney Patterson. Phone: + 0401 333477, E-mail: rodpatrick100@yahoo.com.au

by Charlie Papazian



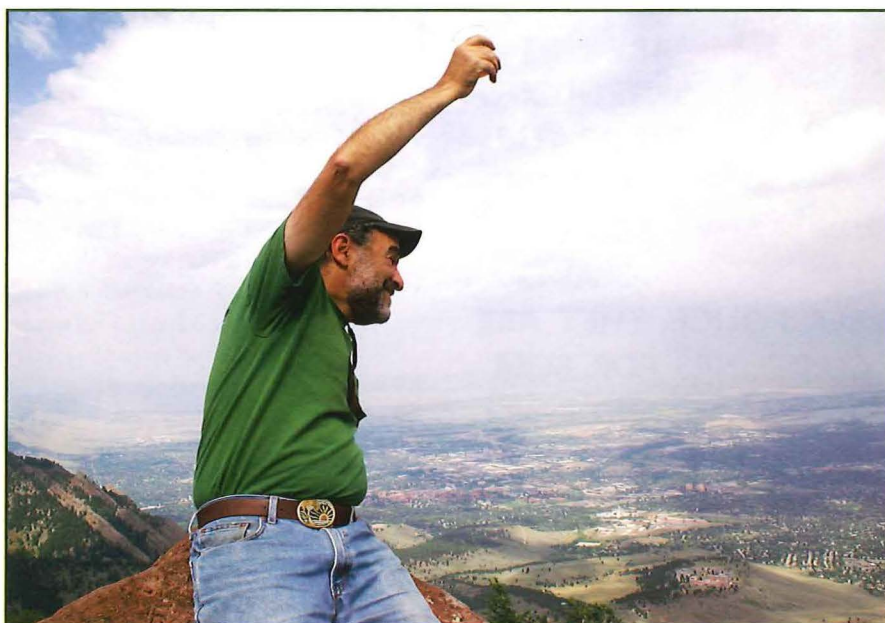
A Return to Innocence

The world is largely a “me too” world. We’re all involved to some degree in the copycat phenomenon. It exists everywhere. That which is innovative and successful is copied. When history is kind, we get to call these successful innovations “traditional.” I’ve said this several times in this column of 29 years: pilsener, stout, IPA, wheat beers and all the other “classics” were once new and innovative. They succeeded, were copied and are now considered traditional.

Beer style guidelines are not intended to be the “law” of self-proclaimed beer police. They are guidelines for beer reverence and inspiration for necessary and continued innovation. One frontier I am beginning to observe is the marriage of ingredients of local origin and indigenous cultural processes when it comes to beer formulation. It was less than a year ago that I tasted several specialty beers brewed by the poets of the brewers’ world—Italian small craft brewers.

Several were striving to develop their beer with ingredients purely indigenous and identifiable to their community and environment. They presented for tasting a beer whose base foundation was a Belgian wit, but instead of the traditional coriander and orange peel, they added uniquely flavored tree lichen from the forest surrounding their village. Another added a unique citrus fruit grown only in the valley from which they lived.

Italians are not the only ones endeavoring to capture the uniqueness of their community and environment. Look to the United States. Alder smoked beer and spruce tip flavored beer do the same thing for brewers of the Northwest. Perhaps it is hickory, mesquite or maple smoked malt in other parts of the country. These are



Innocently and indigenously high.

but a few simple examples. You and I know there are hundreds if not thousands of local flavors we can impart to our brews. I observe that it is not just about

using unique ingredients, but seeking the cultural process of your environment and blending them into the essence of beer formulation.

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In this world of homogeneity, copycats and me-too-ism, all craft brewers strive for identifying and protecting their uniqueness. It is about going where no other has gone before. Whether a brewer is a homebrewing craft brewer or a profes-

sional craft brewer, this becomes a real issue. The values of uniqueness, community, personality and innovation are so very important. It's important to convey this to the beer enthusiast who has become excited about the world of brown ales, stouts, porters, pilseners, wheat

beers, lambics, alts, pale ales, India pale ales, barleywines and all the rest of commonly brewed craft beer styles. Continued appreciation of these successful, innovative traditions is the foundation for the continued evolution of our craft. But let's not *(continued on page 70)*



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Ozark, Missouri

Return to Innocence Mountain Juniper Chokecherry Bock

Mash/Extract Recipe

Ingredients

for 5 U.S. gallons (19 liters)

4.0 lb	(1.82 kg) light malt extract syrup or 3.2 lb (1.5 kg) light DRIED malt extract
4.0 lb	(1.82 kg) amber malt extract syrup or 3.2 lb (1.5 kg) amber DRIED malt extract
1.0 lb	(454 g) smoked malt
8.0 oz	(225 g) honey malt
8.0 oz	(225 g) aromatic malt
2.0 oz	(56 g) chocolate malt
1.0 oz	(28 g) German Caraffe® debi- tized black malt
12.0 oz	(340 g) fresh cut mountain juniper boughs with berries
1.0 oz	(28 g) Perle hops 7% alpha (7 HBU/196 MBU) – 60 minute boiling
1.8 oz	(52 g) Vanguard hops 3.5% alpha (6.3 HBU/176 MBU) – 45 minute boiling
1.25 oz	(35 g) Mt. Hood hops 6% alpha (7.5 HBU/210 MBU) – 15 minute boiling
0.5 oz	(14 g) Santiam hop pellets 5.0% alpha. – DRY HOPPED
2.0 oz	(56 g) Cascade whole hops – DRY HOPPING
7.0 lb	(3.2 kg) crushed chokecherries
0.25 tsp	(1 g) powdered Irish moss
	German or Bavarian type lager yeast
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.064 (16 B)
Approximate Final Gravity: 1.018 (4.5 B)
IBU's: about 41
Approximate color: 15 SRM (30 EBC) +
deep redness of cherry
Alcohol: 6.1% by volume

Directions

Heat 2 quarts (2 l) water to 172° F (77.5° C) and add crushed grains to the water. Stir well to distribute heat. Temperature should stabilize at about 155° F (68° C). Wrap a towel around the pot and set aside for about 45 minutes. Have a homebrew.

After 45 minutes add heat to the mini-mash and raise the temperature to 167° F (75° C). Pass the liquid and grains into a strainer and rinse with 170° F (77° C) water. Discard the grains.

Add to the sweet extract you have just produced more water, bringing the volume up to about 2.5 gallons (9.5 l). Add malt extract, juniper boughs and 60-minute hops and bring to a boil. The total boil time will be 60 minutes. When 45 minutes remain add the 45-minute hops. When 15 minutes remain add the 15-minute hops. When 10 minutes remain add Irish moss. After a total wort boil of 60 minutes turn off the heat.

Immerse the covered pot of wort in a cold water bath and let sit for 15-30 minutes or the time it takes to have a couple of homebrews.

Strain out and sparge hops and direct the hot wort into a sanitized fermenter to which 2.5 gallons (9.5 l) of cold water has been added. If necessary add cold water to achieve a 5.5 gallon (21 l) batch size. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident ferment at temperatures of about 55° F (12.5° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hops for dry hopping plus crushed chokecherries. Continue secondary at 55° F (12.5° C) for two to four weeks. Rack from secondary to a third fermenter leaving behind the hops and chokecherry sediment. "Lager" the beer at temperatures between 35-45° F (1.5-7° C) for four to eight weeks. Prime with sugar and bottle or keg when complete.

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.

Water Treatment and pH

By Steve Holle

Editor's Note: The following discussion presents a step-by-step overview of some important calculations for the advanced homebrewer. The procedures are excerpts from *A Handbook of Basic Brewing Calculations* that have been modified for use by the homebrewer. Many of the scientific principles supporting the calculations that are explained in detail in the book are only summarized in this discussion to focus on applying the calculations to a typical brew.

The usefulness of the equations is illustrated through the brewing of 10 gallons of beer (12 °Plato, 35 IBU) using a typical homebrewing system consisting of a 15-gallon mash/lauter tun and 15-gallon kettle. The steps are presented sequentially so that the reader can understand how the various steps and outcomes relate to each other.

Calcium in brewing water is important because it protects alpha-amylase enzymes from heat inhibition, stimulates mash enzymes to improve yields, lowers pH, limits formation of malt oxalates that

lead to haze and gushing, and promotes yeast health and flocculation. Minimum levels of calcium (Ca) are typically considered to be 50 to 100 parts per million (ppm). Most tap water will not contain these levels of Ca, so additional Ca is usually added.

Calcium is usually added in the form of calcium sulfate (gypsum) or calcium chloride. These salts are not 100 percent Ca, since they also contain water along with sulfate or chloride ions. Gypsum typically contains 23 percent of its weight as Ca. Calcium chloride has a strong tendency to absorb humidity, and the amount of water attached to the salt (which is influenced by how well the salt is sealed against humidity) will determine what percentage of its weight is Ca. The percentage weight of Ca can range from 36 percent when no water is attached (anhydrate) to as low as 18 percent (hexahydrate). If we don't know the form of calcium chloride that we are working with, the dihydrate form of calcium chloride is common and it contains 27 percent Ca by weight.

To adjust our water for the correct amount of Ca, we must first know the existing level in our water and subtract it from the desired level. (Unless a laboratory can test the water, this information is best obtained from the municipal water supply.) For example, if we want 100 ppm of Ca and our water already has 25 ppm, 75 ppm of Ca must be added (100 – 25). Since 0.025 oz of CaCl_2 in 1 gallon provides 50 ppm (see Table 1), we would need to add 0.0375 oz/gal to

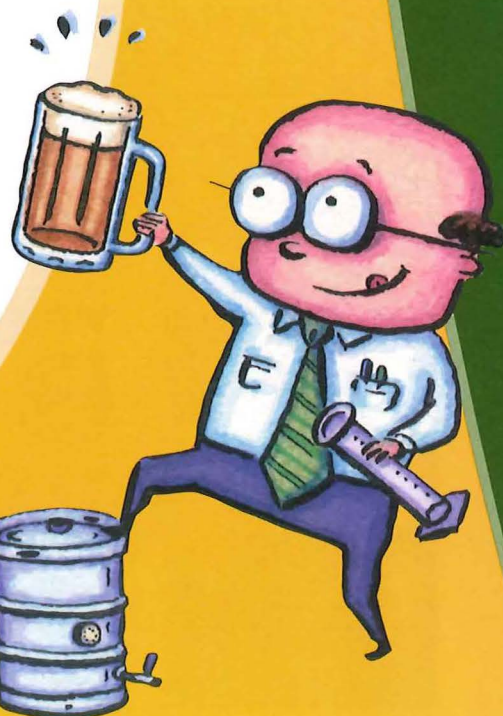


TABLE 1.

Ounces of Dihydrate CaCl_2 (Calcium Chloride) and CaSO_4 (Calcium Sulfate, a.k.a. Gypsum) that produce 50 ppm Ca (Calcium) in Water

	10 gal	1 gal
CaCl_2	0.25 oz	0.025 oz
CaSO_4	0.30 oz	0.030 oz

obtain 100 ppm of Ca ($[75 \text{ ppm} \div 50 \text{ ppm}] \times 0.025 \text{ oz}$). Since we have 14.5 gallons of mash and sparge water, we multiply 14.5 gallons \times 0.0375 oz/gal to obtain a total of 0.54 ounce of CaCl_2 . If we don't know how much Ca is presently in our water, it's probably a good idea to add at least 50 ppm.

Mash pH

To optimize wort quality, the mash pH typically should not exceed 5.8, and most texts indicate that a range of 5.4 to 5.6 is preferred. The term pH means "percent hydron" and refers to the amount of hydrogen ions (H^+) in solution. The more hydrogen ions in solution, the more acidic the solution becomes. Non-carbonate and carbonate forms of calcium have opposite effects on raising or lowering pH, and the net change is referred to as residual alkalinity. When mashing, non-carbonate forms of calcium (CaCl_2 , CaSO_4) react with malt phosphates to release hydrogen ions and lower pH. Alkaline carbonate forms of calcium (i.e. calcium carbonate, CaCO_3) mop up hydrogen ions and raise pH when they react with phosphates.

Based on an equation by a German researcher, Paul Kohlback, we can esti-

mate that 50 ppm of Ca will lower mash pH by about pH 0.06, and 50 ppm of CaCO_3 will raise pH by about 0.084. If we assume that our water analysis indicates that there are 85 ppm of alkalinity in the form of CaCO_3 to go along with the adjusted level of 100 ppm of Ca, we can estimate what the effect of the water ions will be on the mash pH. (see chart below)

Therefore, the combined effect of the non-carbonate and carbonate forms of calcium in our water would cause the pH to be 0.023 higher than if we used distilled water (neutral pH 7.0) in the mash.

While these two salts have an effect on the mash pH, the net change in pH produced by their offsetting effects is usually minor in comparison to the acidifying effects of the malt. Due to reactions between amino acids (i.e. proteins) and sugars in the malt during kilning, acidic color compounds known as melanoidins are formed. Consequently, the more highly kilned or roasted the grain, the lower the malt pH rating will be; therefore, darker malts have lower pH ratings.

Table 2 indicates some approximate pH values for a congress mash of varying malts. A standard laboratory mash known

as a congress mash is produced with distilled water and typically has a specific gravity of about 1.032 (8 °P), while most beers are typically produced from stronger wort of \pm SG 1.048. Low gravity worts generally have a higher pH than high gravity worts, as demonstrated by the rising pH of the wort during sparging as the runnings from the lauter tun become progressively more dilute.

Table 2. Typical Congress Mash pH and Color (EBC) of Various Malts

Malt	pH	EBC
Wheat	6.10	3.5
Pils	5.93	2.8
Helles	5.88	3.3
CaraPils	5.75	4.4
Munich	5.65	15
CaraHell	5.48	22.5
CaraDunkel	5.30	126
Roasted	5.07	1,450
Acidulated	3.50	3.5

Malt pH ratings are not accurate tools for predicting mash and wort pH, but they may give a sense of the effect of certain malts on pH. For example, if we want to brew our beer using 50 percent pale malt of pH 5.9 and 50 percent crystal of pH 5.5, a weighted average of the two produces a theoretical congress mash pH of 5.79.

$$\begin{array}{rcl} 50\% \text{ Pale ale:} & 0.5 \times 5.90 \text{ pH} = & 2.95 \\ 50\% \text{ Munich:} & 0.5 \times 5.65 \text{ pH} = & 2.82 \\ \hline 100\% & & 5.77 \text{ pH} \end{array}$$

However, a weighted average fails to account for all the factors affecting pH, including the buffering capacity of malts and the fact that pH is really a negative logarithm (e.g. pH 5.8 means 10^{-5.8} and pH 5 means there are 10 times more H^+ ions than at pH 6). For this reason, low pH malts (say under pH 5.6) may have more of an effect on reducing pH than their pH values might indicate in a simple weighted average.

Professional brewers directly may add food grade acid to the mash and verify pH with a meter. For a homebrewer without a pH meter, using acidulated malt may be a more manageable method to influence pH than acid. However, with-

Ion	ppm	pH/50 ppm		pH	
Ca	100	- 0.060	x	100/50	= -0.120
CaCO_3	85	+ 0.084	x	85/50	= +0.143
					+0.023



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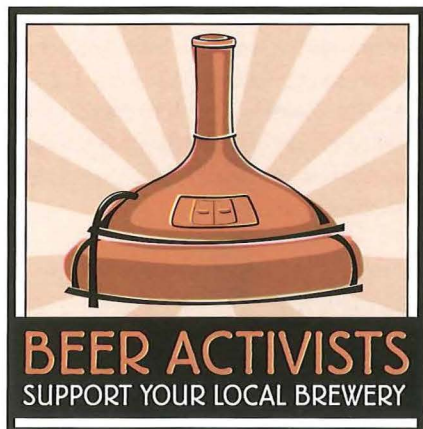
out the use of a pH meter, it may be prudent to use no more than 3 to 5 percent acidulated malt for pale beers (less for amber and probably none for very dark beers) even though the weighted average pH value may indicate a higher amount of acidulated malt is needed to reach the desired 5.6 pH.

88% Pale ale: $0.88 \times 5.90 \text{ pH} = 5.19$
 12% Acidulated: $0.12 \times 3.50 \text{ pH} = 0.42$
 100% 5.61 pH

In the end, the best way to obtain consistency is to check the pH of the mash, wort and beer with a pH meter. Most beer styles have a pH between 4.2 and 4.4, but no higher than 4.6. To fall within this range, the mash pH must be between 5.4 and 5.6. Chemical reactions during boiling reduce the pH further (typically between 5.1 and 5.2), and acids created during fermentation lower the beer pH to the final range of 4.2 to 4.4. Ultimately tasting and trial and error can indicate if your beer will benefit from more or less acidification.

In the next For Geeks Only installment of Basic Brewing Calculations we will take a look at mashing and achieving target gravity.

Steve Holle is author of *A Handbook of Basic Brewing Calculations*. He is a member of the Brewers Association, Master Brewers Association of the Americas and Beer Judge Certification Program, and is an associate member of the Institute and Guild of Brewing, London.



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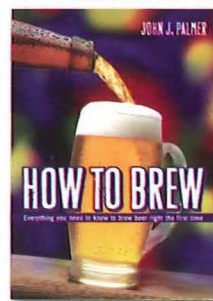
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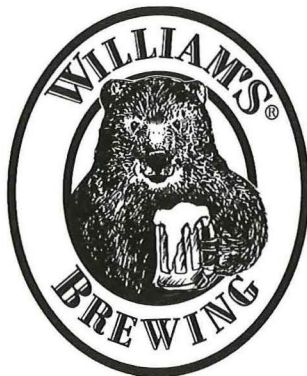


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World of Worts (continued from 66)

have our beer culture become simply mired in the "now" of beer.

I have my standby brews of Czech style light lager, pale ale, bitter, German rauchbier, German dunkel, IPAs, lambics, barleywines and other everyday brews currently on tap. But every once in a while I really get a hankering to break out and find my local mojo—my return to innocence, so to speak.

Return to Innocence Mountain Juniper Chokecherry Bock

All-Grain Recipe

Ingredients

for 5.5 U.S. gallons (21 liters)

6.0 lb	(2.7 kg) Pilsener malt
4.0 lb	(1.82 kg) Munich malt
1.0 lb	(454 g) smoked malt
8.0 oz	(225 g) honey malt
8.0 oz	(225 g) aromatic malt
4.0 oz	(113 g) German Sauer malt
2.0 oz	(56 g) chocolate malt
1.0 oz	(28 g) German Caraffe® debitterized black malt
12.0 oz	(340 g) fresh cut mountain juniper boughs with berries
0.75 oz	(21 g) Perle hops 7% alpha (5.25 HBU/147 MBU) – 60 minute boiling
1.5 oz	(42 g) Vanguard hops 3.5% alpha (5.25 HBU/147 MBU) – 45 minute boiling
1.25 oz	(35 g) Mt. Hood hops 6% alpha (7.5 HBU/210 MBU) – 15 minute boiling
0.5 oz	(14 g) Santiam hop pellets 5.0% alpha. – DRY HOPPED
2.0 oz	(56 g) Cascade whole hops – DRY HOPPING
7.0 lb	(3.2 kg) crushed chokecherries
0.25 tsp	(1 g) powdered Irish moss
	German or Bavarian type lager yeast
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.064 (16 B)

Approximate Final Gravity: 1.018 (4.5 B)

IBUs: about 41

Approximate color: 15 SRM (30 EBC) + deep redness of cherry

Alcohol: 6.1% by volume

Directions

A step infusion mash is employed to mash the grains. Add 12.5 quarts (12 l) of 140° F (60° C) water to the crushed grain, stir, stabilize and hold the temperature at 132° F (53° C) for 30 minutes. Add 6 quarts (5.7 l) of boiling water and add heat to bring temperature up to 155° F (68° C) and hold for about 30 minutes. Raise temperature to 167° F (75° C), laut and sparge with 3.5 gallons (13.5 l) of 170° F (77° C) water. Collect about 5.5 gallons (21 l) of runoff. Add 60-minute hops and juniper boughs and bring to a full and vigorous boil.

The total boil time will be 60 minutes. When 45 minutes remain add the 45-minute hops. When 15 minutes remain add the 15-minute hops. When 10 minutes remain add the Irish moss. After a total wort boil of 60 minutes turn off the heat and place the pot (with cover on) in a running cold-water bath for 30 minutes. Continue to chill in the immersion or use other methods to chill your wort. Strain and sparge the wort into a sanitized fermenter. Bring the total volume to 5 gallons (19 l) with additional cold water if necessary. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at temperatures of about 55° F (12.5° C) for about one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hops for dry hopping plus crushed chokecherries. Continue secondary at 55° F (12.5° C) for two to four weeks. Rack from secondary to a third fermenter leaving behind the hops and chokecherry sediment. "Lager" the beer at temperatures between 35-45° F (1.5-7° C) for four to eight weeks.

Prime with sugar and bottle or keg when complete.

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CATS AND ME-TOO-ISM,
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So last fall, I made the mental effort to look around and notice where I lived. The result: Return to Innocence Mountain Juniper Choke Cherry Bock. Along the mountain trail, my wife, Sandra, and I harvested low-bush berry-laden mountain juniper. The month before, Sandra had harvested 7 pounds of robust and flavorful chokecherries, freezing them for a future creation. I reminisced fondly about the smoked and juniper flavored Gotlandsdrücke of Sweden and wanted to brew something unique to my mood, with local ingredients. The result is a bock strength, subtly smoked cherry-juniper flavored specialty that represents in part where I work, live, love, dance and play.

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

Charlie Papazian is founder of the American Homebrewers Association. 

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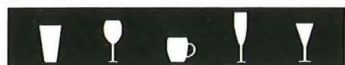
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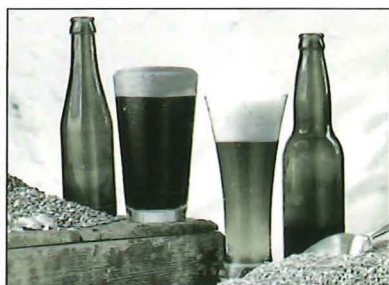
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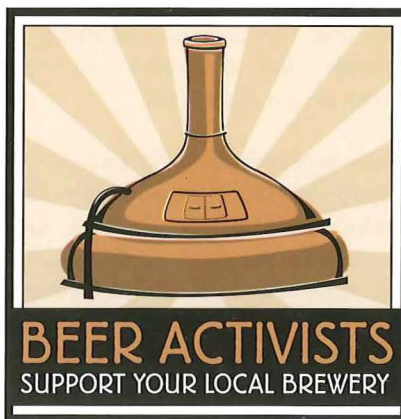
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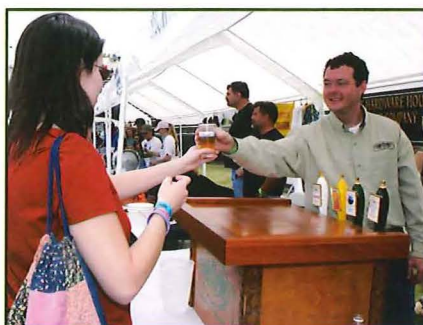


Now in its ninth year, the Charlotte Oktoberfest was originally conceived as a club fundraiser with the goal of raising enough money to purchase a keg of Oktoberfest beer for a club party. The club party is now gone, but the festival endures and is thought to have become the largest beer festival organized and run by a homebrew club in the nation.

Held under Carolina blue skies and near ideal autumn weather of the Piedmont, the increasingly popular festival boasts more than 6,000 craft beer lovers from across the region. It is solely planned by the Carolina BrewMasters of Charlotte, N.C.

The festival's wild success can only be attributed to the dedication of the organizers and club membership in promoting craft beer and homebrewing to the public. "We like to take care of all the brewers and volunteers," said festival organizer Justin Mitchell. "If we make this the best festival we can for them, they will in turn make it the best beer festival possible for our patrons." Continual improvement and passion for quality beer is what makes this festival a favorite of the many "beer geeks" that make attendance mandatory year after year.

There is little doubt what lures beer aficionados from across the region that day. On September 29, 2007, more than 350



different craft beers from over 100 regional craft breweries as well as national and international breweries will be available for sampling. The impressive list of commercial beer grows each year, with several winning medals at the Great American Beer FestivalSM.

In addition to the commercial offerings, many finely crafted homebrews will also be available for sampling that day. Local clubs from the Carolinas are invited to showcase their homebrews to event patrons at each year's event.

"We are very fortunate to have a close relationship with all the Carolina clubs," said Carolina BrewMasters president Brian Beauchemin. This year's unofficial goal is to dispense more than 100 kegs of homebrew, with offerings such as Boo Boo's Blueberry Ale and Barfly Barleywine.

Each year, great stories emerge out of the festival. Last year, as local homebrewer

Tom Nolan's Baltic Porter recipe was being served, he received notice that it took a first-ever gold medal at the GABF in the Pro-Am competition (brewed by Jamie Bartholomaeus of Foothills Brewery). Attendees were lucky enough to enjoy samples of this incredible beer, celebrate their win and most importantly spend the day with good beer friends. To the Carolina BrewMasters, this is really what beer is all about.

To add to the magic that is Charlotte Oktoberfest, last year over \$25,000 was donated to the National Multiple Sclerosis Society from event proceeds. Beer people care!

Tony Profera, who contributed his homebrewing gadget ideas to the January/February issue of Zymurgy, is a member of the Carolina BrewMasters homebrew club. For more information on the Charlotte Oktoberfest, go to www.charlotteoktoberfest.com.

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