

AHA National Homebrew Conference coverage inside

Vol. 27 No. 5 September/October 2004 The Journal of the American Homebrewers Association

# ZYMOLOGY

FOR THE HOMEBREWER AND BEER LOVER

## Beyond Barley

Other fun fermentables for the home zymurgist

Why not wine?

Simple cider

Make it mead

Sake strategies

Pursuing pulque

Plus

33

beers, ciders, meads, sake  
and pulque you can brew



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### DARK ABBEY type for 9 1.

*Starting specific gravity : 1.070 Alcohol content : 8 %.*

One of the most well known Belgian specialties : an Abbey style beer with vinous character due to its high alcohol content. Deep amber, full flavoured with lots of malt aroma with caramel notes. Improves with long maturation times and can be kept for several years !

### AMBIORIX type for 15 I.

*Starting specific gravity : 1.060 Alcohol content : 6,5 %.*

Amber beer with a red copper tint. Slightly acidic palate at first but with a nice fruity aroma. Moderate hop bitterness. Comparable with the well known beer of Roeselare.

### DIABOLO type for 9 1.

*Starting specific gravity : 1.071 Alcohol content : 8 %.*

Belgian specialty beer : Strong, golden coloured beer with a thick and long lasting head (lacy). Characteristic aroma of devil type Belgian beers, soft palate with a slightly sweet aftertaste. Improves with long maturation times and can be kept for several years !

### KRIEK type for 12 1.

*Starting specific gravity : 1.053 Alcohol content : 5,5 %.*

Kriek is the best known of the famous Belgian fruit-beers, made by macerating cherries in beer. A slightly acidic, sweet aromatic beer with a red topper tint. Each kit contains pure cherry juice of at least 3 kg of cherries ! This beer gives you the perfect balance of fruitiness without tasting like grenadine as some commercial kriek's do.

### OLD FLEMISH BROWN type for 12 1.

*Starting specific gravity : 1.060 Alcohol content : 6 %.*

A dark brown beer with a woody notes flavor a slight liquorice aftertaste that also compares with the Dutch Bock-beers.

### CHRISTMAS type for 7 1.

*Starting specific gravity : 1.065 Alcohol content : 8%.*

Dark, strong and full-bodied Belgian beer, sweeter than Abbey style beers. Strong malt flavour and aroma. Improves with long maturation times and can be kept for several years !

### WHEATBEER type for 9 1.

*Starting specific gravity : 1.053 Alcohol content : 5%.*

Very similar to the well known Belgian "Witbieren" : pale, opaline colour with low alcohol content. A real summer beer with a pleasant aroma, mild hops and a smooth malt character. Slightly acidic and thirstquenching. Based on an old recipe using barley, wheat, oat flakes and a secret herb mixture with coriander and sweet orange-peel.

### GRAND CRU type for 9 1.

*Starting specific gravity : 1.075 Alcohol content : 8%.*

Gold opaline coloured, with strong flavour of grains and even bread. Very little hop aroma. Very mouthfull with light fruit notes and a pleasant sweetness. Also this kit contains wheat malt and a special herb mixture.

### TRIPLE type for 9 1.

*Starting specific gravity : 1.075 Alcohol content : 8%.*

Triple is a well known, deep golden coloured, Belgian specialty. Due to its high malt contents it has a very pleasant aroma and taste, mouthfull, full bodied and even a bit herbaceous. High alcohol content.

### FRAMBOOS type for 12 1.

*Starting specific gravity : 1.053 Alcohol content : 5,5%.*

FRAMBOISE or raspberry beer, is a Belgian specialty. Together with the BREWFERM KRIEK, this FRAMBOISE is the only fruitbeer kit available in the world. Each kit has an equivalent of 2 kilo of raspberries. This FRAMBOISE beer han a very delicate aroma and is ideal as a refreshing summer-beer or as a surprising aperitif !

### PILSNER type for 15 1.

*Starting specific gravity : 1.042 Alcohol content : 4,6 %.*

Light, blond beer, with a moderate bitterness and dry finish, comparable with the commercial Lager or Pilsner beers. Low alcohol content.

### GOLD type for 12 1.

*Starting specific gravity : 1.053 Alcohol content : 5,5 %.*

A real deluxe pilsner type with more malt flavor than the normal Lagers. Moderate hop bitterness. Comparable with the Scandinavian deluxe-Beers.

### GALLIA type for 12 1.

*Starting specific gravity : 1.055 Alcohol content : 5,5 %.*

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To make quality beer and brewing knowledge accessible to all.

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# ZYMURGY®

*Zymurgy \zī'mər jē\ n: the art and science of fermentation, as in brewing.*

### VIVA LAS VEGAS

The American Homebrewers Association National Homebrewers Conference and National Homebrew Competition were the biggest yet. And the fun that happened in Vegas didn't stay in Vegas as hundreds of happy homebrewers went home with memories of four days of beer and fun.

*By Jim Parker*

### WHY NOT WINE?

Brewers are sometimes intimidated about trying their hand at wine, but they shouldn't be. Veteran winemaker, brewer and meadmaker Byron Burch, who has been teaching people to make beer, wine and mead for more than 30 years, explains why wine is actually simpler to make than beer.

*By Byron Burch*

### MAKE IT MEAD

They don't call it nectar of the gods for nothing. One sip of mead can launch an exploration that could wind up with you opening your own meadery. Just ask David Myers of Redstone Meadery.

*By David Myers*

### THE SIMPLICITY OF CIDER

For those who seek simplicity in their fermenting life, cider is a good choice. You can keep it as simple or make it as complicated as you like. Dick Dunn, moderator of the Cider Digest, gets you started.

*By Dick Dunn*

### THE TROUBLE WITH SAKE

Making sake really isn't all that difficult—it just takes time and attention to details, such as measuring by volume, not weight. Fred Eckhardt leads you through the steps to making quality sake.

*By Fred Eckhardt*

### PURSUING PULQUE

Pulque was once considered a gift from the gods, reserved for the ruling class. It has been called magical because of its spontaneous fermentation and is even known as an aphrodisiac. Modern homebrewers can make a variation of this ancient drink.

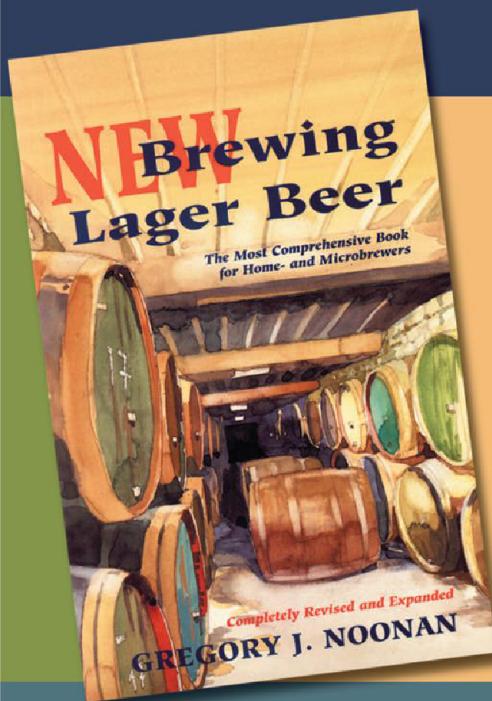
*By Jim Parker*

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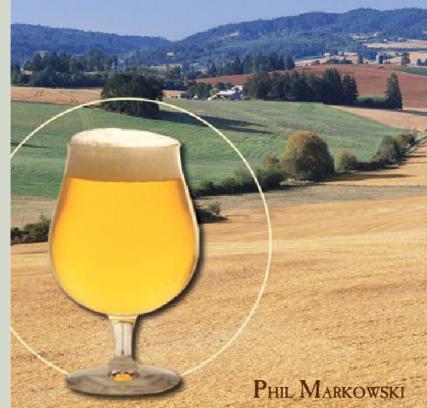
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BY PAUL GATZA

# Great American Beer Festival®

**A**h! A nice, hoppy Brutal Bitter from Rogue Ales is just what I needed to get rid of writer's block.

This year marks a threshold for me. This will be the year that I will have been to more Great American Beer Festivals than I have missed (12 of the 23). My first experience was as a steward for the competition side of the judging. Actually I was a floating steward, and my job was as the randomizer of the leftover beer from small categories and entries that did not make it to the final round. I had the "Central Scrutinizer" theme from Frank Zappa's Joe's Garage album going through my head, but changed it to "I am the Central Randomizer."

After two full days of volunteer randomizing, I stepped into my first GABF in 1993 and was astounded at the sights and sounds. I decided to start with the A's. Fortunately that brought me to the booth of the Alaskan Brewing Company, where I had my first taste of Alaskan Smoked Porter. In fact it was my first smoked beer that I can recall, although I had been a homebrewer for several years and had joined the Hop Barley and the Alers homebrew club the previous year. The beer had such an incredible depth of complexity and excellence of flavor that I will never forget my experience. My first beer at the GABF was an epiphany.

I discovered many other great new beers and beer styles that night that inspired me to go further with my own brew kettle. It certainly invoked a greater passion that drove me to brew far more often and in a variety of styles I hadn't even heard of at that time.

As the years have poured by, I recall each new beer that knocked my socks off. New Glarus' Belgian Red, Pizza Port Solana Beach's Cuvee de Tomme, Russian River's Hop Harvest Ale, Sam Adams' Triple Bock, then Millennium, then Utopias, Dogfish Head's Midas Touch, Baltimore/DeGroen's Doppelbock and Rauchbier, Boscos' Juniper Stone Beer, Deschutes Black Butte Porter, Hoptown's



**John Maier, brewmaster at Rogue Ales, and the King (aka Paul Gatz).**

DUIPA, Sierra Nevada's Celebration Ale and Bigfoot, Iron Hill's Old Tom, Celis White and Moylan's Double IPA—these are just a handful of wonderful beers that I first tasted on the festival floor. I wonder what great new beers this year will hold. My mouth waters just to consider the old friends I'll enjoy there.

The 23rd Great American Beer Festival will be held at the Colorado Convention Center in Denver on September 30, October 1 and 2, 2004. The festival was founded by the American Homebrewers Association in 1982, and gets better each year.

## Changing Choices of American Beer Drinkers

I have looked at the continuing craft beer revolution in my last couple of articles. Here is a quick chart by style that demonstrates the shifting style choices of American beer drinkers.

### Change in U.S. Beer Sales from 1998 to 2003 by Volume

Economy Lager .....	-16%
Lager .....	+3%
Pale Ale .....	+36%
Amber Ale .....	+54%
Wheat Beer .....	+22%
Stout .....	+19%

## AHA National Homebrewers Conference Sets Record Attendance

What an amazing conference 776 of us enjoyed in Las Vegas over Summer Solstice. The three organizing groups, SNAFU, QUAFF and Maltose Falcons, did an amazing job of bringing in a hospitality filled event. The group partnered with University of Nevada-Las Vegas for a pre-conference beer and food pairing event that served as a great kickoff to a great weekend. The Pro Brewers Night brought in dozens of brewers from Nevada and neighboring states

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who served up smashing beers. The Beer Rush Club Night sponsored by Beer, Beer and More Beer included a stunning array of themed club booths and costumery. Elvis the King even returned to Vegas for one night only as emcee of the Grand Banquet sponsored by Rogue Ales.

The crew of the AHA National Homebrew Competition finished the judging of the final round of the 4,443 entries (the largest beer competition ever on this or any other planet.) The hospitality suite went round the clock. The speakers did a great job covering a range of interesting and useful topics. We'll be tapping their expertise for some *Zymurgy* pieces over the next couple of years. There were even rumors of a secret showing of the 1981 film "Homebrew Madness," which was banned by both the Cannes Film Festival and the U.S. Department of Homeland Security for its scandalous content.

I tip my glass to Tyce Heldenbrand, John Curtis, CJ Monson, Jamil Zainasheff, Drew Beechum and the rest of the organizing crew. You guys threw a great party for your friends, and raised the bar for the Baltimore crew next June.

**Paul Gatz** is director of the American Homebrewers Association.

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BY JIM PARKER

# Going Against the Grain

**H**omebrewers, by nature, are a restless and inquisitive breed. After all, if we were satisfied with the status quo, we wouldn't take up brewing in the first place; we'd settle for whatever beer was placed in front of us.

Most start out brewing extract beer, possibly from preformulated kits. But soon that's not enough. The next step is partial mash, where there is more to play with and more control over the finished product. That's good enough for some, but others must push further into all-grain brewing. And once we've gotten a handle on the mash-sparge-boil-ferment process, many of us go looking for the next challenge.

This special issue of **Zymurgy** is devoted to what we hope will be the next challenge for many of you: other fermented beverages you can make and share with friends.

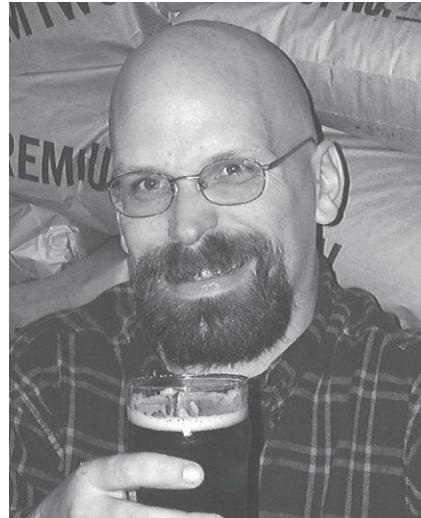
With fall's harvest nearly upon us, there will be a bounty of new fermentables to test your zymurgistic skills. We have rounded up a cast of experts to lead you through the first steps of fermenting outside the beer box.

Byron Burch has been teaching people to make quality wine, beer, mead and cider for more than 30 years. On page 26, he helps break down the walls between brewing and winemaking and dispenses with some of the myths about which is more difficult.

Dick Dunn is moderator of the Cider Digest, an Internet forum for discussion of cider and cider making. On page 34, he explains why he has settled on cider as his fermented beverage of choice and extols the simplicity of cidermaking.

Rice may be available year-round, but fall is definitely the start of sake brewing season. Fred Eckhardt, who has been writing about beer and sake longer than he cares to admit, demystifies the long but simple sake brewing process on page 38.

David Myers' story is a familiar one to anyone bitten by the fermentation bug. First you taste



something so wonderful you just *have* to try your hand at making it yourself. Then you become so obsessed with your new hobby that it threatens to take over your life. Then you simply give in and accept your fate, making your new love your livelihood. In Myers' case, that love is mead. Read about his journey from his first taste of Charlie Papazian's prickly-pear mead to the opening of Redstone Meadery on page 30.

Yours truly explores the mythical and mystical history of pulque—possibly North America's first fermented beverage—and offers some tips about making a modern-day version on page 42.

And just so you don't think we've forgotten this is a beer magazine, I take a look at alternative grains on page 46.

Our expert panel of beer judges gets into the mead and cider mood by using the newly released Beer Judge Certification Program style guidelines for mead and cider to judge a commercial mead and a commercial cider. If you've never judged a mead or cider—or even if you have—we invite you to get your own bottles of our featured meads and judge along.

This is also the issue where we pay tribute to the winners in the recent American

Homebrewers Association National Homebrew Competition. This year's winners had to rise to the top of a record field of 4,443 entries. Look for the winning recipes starting on page 54.

If you weren't one of the record 776 homebrewers who gathered in Las Vegas June 16-19 for the American Homebrewers Association National Homebrew Conference, you can get a little taste of what you missed on page 22 and also in Gary Glass' Clubs Column on page 13. If that isn't enough to make you mark your calendars for Baltimore, June 16-19, 2005, then I don't know what will do the trick.

As promised, For Geeks Only returns this issue with Chris Bible telling you everything you ever wanted to know about wort chillers but were too lazy to sit down and work out the numbers.

This issue we also debut a new regular column called Try This at Home. Each issue, we will introduce you to a new food or beverage you can make at home. I kick off the series with an overview of home coffee roasting, one of my newest hobbies.

After reading the July/August issue of **Zymurgy**, many of you were probably left wondering if perhaps I hadn't remembered to roast my morning's beans before editing. First, I managed to leave the Dear Professor column completely out of the magazine—for the first time in this magazine's history. My apologies to the Prof and his many fans. Rest assured, the Professor is back in his rightful place on page 17.

Then, I mangled three recipes in my stories on Widmer Hefeweizen and Pete's Wicked Ale, as well as the Strange Brews column. Look for corrected versions of these recipes in Dear Zymurgy on page 11. I apologize to anyone who ended up with the world's strongest, most bitter hefeweizen.

That's not what I had in mind for the next great brewing challenge.

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



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BJ's Restaurant & Brewery  
Brea, Oxnard, West Covina, Woodland Hills

BJ's Pizza & Grill  
Huntington Beach, La Jolla, Laguna Beach,  
Long Beach, Los Angeles, Newport Beach,  
Seal Beach

BJ's Restaurant & Brewhouse  
Arcadia, Burbank, Cerritos, Cupertino,  
Huntington Beach, Irvine, La Mesa, San Jose, Thousand Oaks, Valencia

O'Brien's Pub  
San Diego

Oggi's Pizza & Brewing Co.  
Encinitas, Escondido, Huntington Beach,  
Mission Valley, Mission Viejo, San Diego (3),  
Santa Clarita, Vista

Rock Bottom Restaurants  
Irvine, La Jolla, Long Beach,  
San Jose, San Diego

Rogue Ales Public House  
San Francisco

Russian River  
Santa Rosa

Santa Barbara Brewing Co.  
Santa Barbara

Stone Brewing Co.  
San Marcos

### COLORADO

5280 Roadhouse & Brewery  
Littleton

Backcountry Brewery &  
Restaraunt  
Frisco

BJ's Pizza Grill & Brewery  
Boulder

Boulder ChopHouse & Brewery  
Boulder

Dillon Dam Brewery  
Dillon

Flying Dog Brewery  
Denver

Glenwood Canyon Brewing Co.  
Glenwood Springs

Great Divide Brewing Co.  
Denver

### HOPS GRILLHOUSE AND BREWERY

Aurora, Colorado Springs,  
Denver, Golden, Littleton,  
Lone Tree, North Glenn

Ironworks Brewery & Pub  
Lakewood

Left Hand/Tabernash Brewing Co.  
Longmont

Odell Brewing Co.  
Fort Collins

### OLD CHICAGO

Aurora, Boulder, Broomfield, Colorado Springs (3), Denver (3), Ft. Collins (2), Grand Junction, Greeley, Lakewood, Littleton, Longmont, Silverthorne, Superior, Thornton, Westminster, Wheatridge

Oskar Blues  
Lyons

### PHANTOM CANYON

Colorado Springs

Pumphouse Brewery & Restaurant  
Longmont

Redfish Brewpub  
Boulder

Redstone Meadery  
Boulder

Rock Bottom Restaurants  
Denver, Englewood, Westminster

Rockies Brewpub  
Boulder

Rockyard Brewing Co.  
Castle Rock

Smugglers Brewpub & Grille  
Telluride

Walnut Brewery  
Boulder

Wynkoop Brewing Co.  
Denver

### CONNECTICUT

Hops Grillhouse and Brewery  
Manchester, Newington, Waterbury

Willimantic Brewing Co.  
Willimantic

### DELAWARE

Iron Hill Brewery and Restaurant  
Newark

Stewarts Brewing Co.  
Bear

### FLORIDA

Dunedin Brewery  
Dunedin

Hops Grillhouse and Brewery  
Boynton Beach, Bradenton, Brandon,  
Clearwater, Coral Springs, Daytona Beach,  
Ft. Lauderdale, Ft. Myers, Gainesville,  
Jacksonville, Lakeland, Miami, Naples,  
Ocala, Orange Park, Orlando (2 locations),  
Palm Harbor, Pembroke Pines, Plantation,  
Pompano Beach, Port Richey, Sanford,  
St.Petersburg, Stuart, Tampa (3 locations),  
West Palm Beach, Winter Park

### GEORGIA

Hops Grillhouse and Brewery  
Douglasville, Duluth, Kennesaw (2)

### HAWAII

Kona Brewing Co.  
Kailua-Kona

### IDAHO

Old Chicago  
Boise (2)

### ILLINOIS

Elmwood Brewing Co.  
Elmwood

Flossmoor Station Restaurant &  
Brewery  
Flossmoor

Goose Island Brewpub  
Chicago (2)

Old Chicago  
Rockford

Mickey Finn's Brewery  
Libertyville

Piece Brewery  
Chicago

Rock Bottom Restaurants  
Chicago, Warrenville

### INDIANA

Buffalo Wild Wings  
Indianapolis

Rock Bottom Restaurants  
Indianapolis

Upland Brewing Co.  
Bloomington

### IOWA

Court Avenue Brewing Co.  
Des Moines

Old Chicago  
Bettendorf

Raccoon River Brewing Co.  
Des Moines

Rock Bottom Restaurants  
Des Moines

### KANSAS

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

### MARYLAND

Hops Grillhouse and Brewery  
Owings Mills

Rock Bottom Restaurants  
Bethesda

### MASSACHUSETTS

Rock Bottom Restaurants

Boston, Braintree

Watch City Brewing Co.  
Waltham

### MICHIGAN

Arbor Brewing Co.  
Ann Arbor

Big Buck Brewery & Steak House  
Ann Arbor

Hereford & Hops Steakhouse &  
Brewpub  
Bay City, Escanaba

### MINNESOTA

Hops Grillhouse and Brewery  
Eden Prairie, Maple Grove

### MISSISSIPPI

Hops Grillhouse and Brewery  
Jackson

### MISSOURI

### MISSOURI

Hops Grillhouse and Brewery  
Jackson

### NEBRASKA

Old Chicago  
Lincoln (2), Omaha (4)

Thunderhead Brewing  
Kearney

Upstream Brewing  
Omaha

### NEVADA

Chicago Brewing Co.  
Las Vegas

Rosemary's Restaurant &  
Rosemary's at the Rio Hotel  
& Casino

Las Vegas

### NEW HAMPSHIRE

The Portsmouth Brewery  
Portsmouth

### NEW JERSEY

Triumph Brewing Co.  
Princeton

### NEW MEXICO

Blue Corn Café & Brewery  
Albuquerque, Santa Fe

Il Vincio Brewing Co.  
Albuquerque

### NEW YORK

CH Evans Brewing Co. at the  
Albany Pump Station  
Albany

Ellicottville Brewing Co.  
Ellicottville

Lake Placid Pub & Brewery  
Lake Placid

Lake Placid Craft Brewing Co.  
Plattsburgh

Southampton Publick House  
Southampton

### NORTH CAROLINA

Hops Grillhouse and Brewery  
Charlotte, Huntersville, Matthews,  
Pineville

### OHIO

Brew Kettle, Taproom and  
Smokehouse  
Strongsville

Hops Grillhouse and Brewery  
Beavercreek, Maumee

Rock Bottom Restaurants

Cincinnati, Cleveland

Willoughby Brewing Co.  
Willoughby

### OREGON

BJ's Restaurant Bar & Brewery  
Eugene, Portland (2)

Laurelwood Public House & Brewery  
Portland

Old Chicago  
Beaverton, Gresham, Portland (2)

Pelican Pub and Brewery  
Pacific City

Rock Bottom Restaurants  
Portland

Rogue Ales Brewery  
(includes Brewer's on the Bay)  
Newport (2), Portland

PENNSYLVANIA  
Barley Creek Brewing Co.  
Tannersville

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

Rock Bottom Restaurants  
King of Prussia, Pittsburgh

Triumph Brewing Co.  
New Hope

SOUTH CAROLINA  
Hops Grillhouse and Brewery  
Columbia (2), N. Charleston, Spartanburg

TENNESSEE  
Boscos Brewing Co.  
Memphis, Nashville

Hops Grillhouse and Brewery  
Memphis

TEXAS  
Big Buck Brewery & Steakhouse  
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BJ's Restaurant & Brewhouse  
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Salt Lake City

Moab Brewery  
Moab

Squatter's Pub Brewery  
Salt Lake City, Salt Lake Airport

Uinta Brewing Co.  
Salt Lake City

VIRGINIA  
Hops Grillhouse and Brewery  
Alexandria, Richmond (2)

Rock Bottom Restaurants  
Arlington

Williamsburg Brewing Co.  
Williamsburg

WASHINGTON  
Rock Bottom Restaurants  
Bellevue, Seattle

Rogue Ales Issaquah Brewery  
Issaquah

WASHINGTON D.C.  
District Chophouse & Brewery

WISCONSIN  
Angelic Brewing Co.  
Madison

Hereford & Hops Steakhouse  
& Brewpub  
Wausau

Milwaukee Ale House  
Milwaukee

Northwoods Brewpub  
Eau Clair

Old Chicago  
Madison

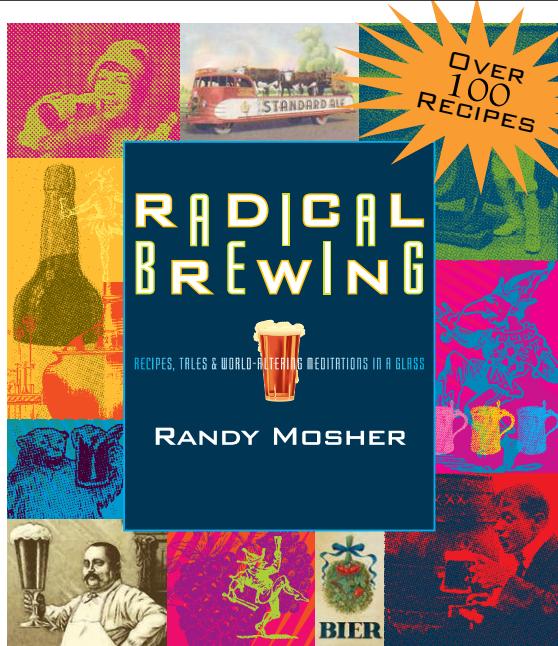
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Restaurant  
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# CALENDAR

AMERICAN HOMEBREWERS ASSOCIATION

## AUGUST

- 26** Evergreen State Fair. Monroe, WA. AHA/BJCP SCP. Contact: Steve Titterness, Phone: 425-343-7398, Fax: 360-653-4546, E-mail: steve@ezhomebrew.com Web: <http://ESFCompetition.homestead.com/home.html>
- 27** AHA Club-Only, Category 17 Wheat Beer. Woodland Hills, CA. AHA SCP. Hosted by Steve Cook and the Maltose Falcons. Entry Deadline: 8/20. Fee: \$5. Contact: Steve Cook, E-mail: [Scook4208@msn.com](mailto:Scook4208@msn.com) Web: [www.beertown.org/homebrewing/schedule.html](http://www.beertown.org/homebrewing/schedule.html)
- 28** Minnesota State Fair Home Brew Contest. Hopkins, MN. AHA/BJCP SCP. Sponsored by Minnesota Home Brewers Association. For Minnesota residents only. Entry Deadline: 8/6-20. Fee: \$5. Contact: Jim LaRocque, Phone: 952-927-6303, E-mail: [larocqueman@netzero.com](mailto:larocqueman@netzero.com) Web: [www.mmbrewers.com/events/mnfair](http://www.mmbrewers.com/events/mnfair)
- 29** Brewing in the Hills. Waverly, NY. AHA/BJCP SCP. Sponsored by The Club at Shepard Hills. Fee: \$2. Contact: Tom Koons, Phone: 607-565-9500 x 13, Fax: 607-565-7327, E-mail: [tkoons@shepardhills.com](mailto:tkoons@shepardhills.com) Web: [www.shepardhills.com](http://www.shepardhills.com)

## SEPTEMBER

- 4** Baker County Fair. Halfway, OR. AHA/BJCP SCP. Contact: Linda Collier, Phone: 541-742-2790, E-mail: [licol\\_99@yahoo.com](mailto:licol_99@yahoo.com)
- 4** Dogwood Winter Ale Homebrew Competition. Adairsville, GA. AHA/BJCP SCP. Dogwood Brewing Co., TheBeerCellar.com and Northwest Georgia's First Runnings host this special homebrew competition for homebrewers who have tried the recipes Dogwood has released of every Winter Ale since 1998. The winner gets to help brew Dogwood Winter Ale 2004 at the brewery in Atlanta. Entry Deadline: 8/27. Fee: \$5. Contact: Crawford Moran, Phone: 404-367-0500, Fax: 404-367-0505, E-mail: [aracauna@hotmail.com](mailto:aracauna@hotmail.com) Web: [www.thebeercellar.com](http://www.thebeercellar.com)

- 11** River City Roundup Fair & Festival. Omaha, NE. AHA/BJCP SCP. Contact: John Fahrer, Phone: 402-733-3586, E-mail: [jfahrer@archerserve.com](mailto:jfahrer@archerserve.com) Web: [www.rivercityroundup.org/dcf/beer](http://www.rivercityroundup.org/dcf/beer)
- 11-18** 4th All About Beer Magazine Brew Cruise. Boston, MA. Seven-night Fall Foliage Cruise through New England and Canada on Royal Caribbean's newest ship, Jewel of the Seas (maiden voyage May 2004). Contact: Michael Weil, Magic Happens Travel & Cruises, Phone: 919-678-9800, 800-824-4968, E-mail: [travel@magichappens.com](mailto:travel@magichappens.com) Web: [www.magichappens.com](http://www.magichappens.com)
- 11-12** 6th Annual Blue Ridge Brew Off Homebrew Competition. Asheville, NC. Sponsoring Club: Mountain Ale and Lager Tasters (MALT). Entry Deadline: 8/27. Fee: \$6 for 1st entry, \$5 for each additional. Contact: David Keller, Phone: 828-625-9894, E-mail: [batdave@blueridge.net](mailto:batdave@blueridge.net) Web: [www.malt-nc.com](http://www.malt-nc.com)

- 12** Tulare County Fair Homebrew Competition. Visalia, CA. AHA/BJCP SCP. Open to the state of California. Division and class specifications per BJCP 1999 available at [www.tchops.org](http://www.tchops.org) or fair office. Entry forms, available online, must be received by 8/25. Beers received 9/7-11. No entry fee. Cash prizes! Contact: Bert McNutt, Phone: 559-592-8175, E-mail: [bert@tchops.org](mailto:bert@tchops.org) Web: [www.tchops.org](http://www.tchops.org)
- 24-25** 7th Annual Cactus Challenge. Lubbock, TX. The premier homebrew competition of the South Plains. Entry Deadline: 8/23-9/10. Judging on 9/17, 18 and 25. Fee: \$7. Contact: Bryan Theall, Phone: 806-791-2739, Fax: 806-795-1392, E-mail: [president@ale-iantsociety.org](mailto:president@ale-iantsociety.org) Web: [www.ale-iantsociety.org](http://www.ale-iantsociety.org)

AMERICAN HOMEBREWERS ASSOCIATION

## • KUDOS •

### SANCTIONED COMPETITION PROGRAM BEST OF SHOW

#### MARCH 2004

Hudson Valley Homebrewers Competition, 251 entries—**David Sherfey of Warwick, NY**

#### APRIL 2004

BOSS Challenge, 161 entries—**Zbig & Sylvia Banach of New Lenox, IL**  
U.S. Open, 243 entries—**Ken Hilton of Greenville, NC**

9th Annual Hurricane Blowoff—**Joe Simon of West Palm Beach, FL**

#### MAY 2004

8th Annual Silver Dollar Fair Homebrew Competition, 101 entries—**Jim Livingston of Paradise, CA**

Upper Mississippi Mash-out, 300 entries—**Thomas Eibner of St. Paul, MN**  
San Joaquin Fair Homebrew Competition, 50 entries—**Rick Stanton of Stockton, CA**  
Sunshine Challenge, 507 entries—**Jimmy Paige of Houston, TX**

12th Annual Great Alaska Homebrew Competition, 46 entries—**Pete Devaris of Anchorage, AK**

2004 BUZZ-OFF—**Rick Garvin & Christine Lewis of McLean, VA**

8th Annual Celtic Brew-Off, 101 entries—**Richard Graham of Bedford, TX**

10th Annual BUZZ Boneyard Brewoff, 193 entries—**Mark Hanciaux of Danville, IL**

#### JUNE 2004

Mt. Baldy Cup, 9 entries—**René DiPaola of Hobart, IN**

**AHA SCP** = American Homebrewers Association Sanctioned Competition Program. **BJCP** = Beer Judge Certification Program. The Calendar of Events is updated weekly and is available from the Association of Brewers: [info@aob.org](mailto:info@aob.org) or [www.beertown.org](http://www.beertown.org) on the web. To list events, send information to **Zymurgy** Calendar of Events. To be listed in the November/December Issue (Vol. 27, No. 6), information must be received by September 1, 2004. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months prior to the event. Contact Kate Porter at [kate@aob.org](mailto:kate@aob.org); (303) 447-0816 ext. 123; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679.

#### 24-25 FOAM Cup 2004.

Bartlesville, OK. AHA/BJCP SCP. Oklahoma's only AHA sanctioned homebrew competition and a leg of the High Plains Brewer of the Year Award. All BJCP/AHA categories accepted. Sponsored by: Fellowship of Oklahoma Ale Makers. Entry Deadline: 9/10-17. Fee: \$6. Contact: Robert Gulley, Phone: 918-925-6409, E-mail: [okierat@alemakers.com](mailto:okierat@alemakers.com) Web: [www.alemakers.com](http://www.alemakers.com)

#### OCTOBER

- 9** Maltose Falcons 30th Anniversary Party. Woodland Hills, CA. Warner Center Marriott. 6:30 pm. Fee: \$45 for non-members, \$50 at the door. Contact: Jim Kopitzke, Phone: 818-884-8586, E-mail: [anniversary@maltosefalcons.com](mailto:anniversary@maltosefalcons.com) Web: [www.maltosefalcons.com/](http://www.maltosefalcons.com/)

- 9** 8th Annual Pacific Brewers Cup. Cypress, CA. AHA/BJCP SCP. Competition, open to all homebrewers, at Rock Bottom, Long Beach, CA. Fee: \$6. Contact: Robert Wise, Phone: 562-889-2572, Fax: 714-828-4709 E-mail: [wise.robert@epa.gov](mailto:wise.robert@epa.gov)

**September 30–October 2** Association of Brewers' Great American Beer Festival®. Denver, CO. AHA/BJCP SCP. Contact: Association of Brewers, Phone: 888-U-CAN-BREW, Fax: 303-447-2825, E-mail: [info@aob.org](mailto:info@aob.org) Web: [www.beertown.org](http://www.beertown.org)

**Geezuz U Gyze**

Dear *Zymurgy*,

No mashing instructions for Pete's (p.26) or Widmer Bros. (p.28) in the July/August *Zymurgy*? Why not post corrections (as a regular practice) at Beertown?

Waiting to infuse,  
RBA

Hi Jim,

Just an observation on a recipe typo. The July /August edition of *Zymurgy* has a Widmer Hefeweizen Clone recipe. The 5-gallon All-Grain recipe shows a total of four 5-ounce hop additions.

I doubt anyone would brew 5 gallons of beer with 20 ounces of hops, but hey?

Otherwise, keep up the nice job!

Regards,  
Bob Heinlein  
Kennywood Brewing Supply

Hey Jim,

What happened to the two clone recipes of yours in the July/August *Zymurgy*?

1) No mashing or extract brewing schedule whatsoever.

2) Completely wrong conversion to kg (you are supposed to divide by 2.2 to go from lbs to kg not multiply like you did).

3) The Widmer Hefeweizen recipe calls for almost 14 lb of grain for a 1.046 beer! (I believe that it should read 0.5 lb of Munich not 5.0 lb especially since your incorrect kg equivalent would indicate this).

Not very good editing for an editor-in-chief. Can you post brewing instructions for these two beers somewhere?

Jim Bentson

*Dear Readers,*

*I suppose I could add the half-dozen other e-mails we received pointing out the errors of my ways in the July/August issue, but in the interest of saving trees, I won't.*

*And, I suppose I could say I was just testing you guys to see if you were reading our recipes.*

*Or, I could say I was just trying to generate some letters since the Dear Zymurgy cupboard has been bare since I took over editorship.*

*But the simple fact is: I screwed up. And I am sorry. I'd say it won't happen again, but we all know that editing, like beer making, is not always perfect. All we can do is swallow our mistakes and move on to the next batch a bit more carefully. The idea of posting corrections on Beertown is a good one. We'll see what the possibilities are.*

*Here are the recipes.*

**Widmer Hefeweizen Clone****Ingredients for 5-gallon batch (19 L)****All-Grain Recipe**

4.5 lb (2.04 kg) two-row pale malt  
3.5 lb (1.59 kg) malted wheat  
0.5 lb (226 g) Munich Malt  
3.0 oz (84 g) Crystal malt (40L)  
0.5 oz (14 g) Tettnanger hops (4.5% alpha acid) 60 minutes  
0.5 oz (14 g) Cascade hops (5.4% alpha acid) 45 minutes  
0.5 oz (14 g) Cascade hops (5.4% alpha acid) 30 minutes  
0.5 oz (14 g) Cascade hops (5.4% alpha acid) 10 minutes  
Wyeast American Wheat yeast

- OG: 1.046
- IBU: 31.1

Single infusion mash at 152° F (67° C). Ferment at 68° F (20° C) for one week. Rack into secondary for one week and package.

**Extract Recipe**

4.0 lb (1.8 kg) Briess Brewers Gold liquid malt extract  
2.0 lb (.9 kg) Briess Weizen malt extract  
0.5 lb (226 g) Munich malt  
3.0 oz (84 g) Crystal malt (40L)  
0.5 oz (14 g) Tettnanger hops (4.5% alpha acid) 60 minutes  
0.5 oz (14 g) Cascade hops (5.4% alpha acid) 45 minutes  
0.5 oz (14 g) Cascade hops (5.4% alpha acid) 30 minutes  
0.5 oz (14 g) Cascade hops (5.4% alpha acid) 10 minutes  
Wyeast American Wheat yeast

- OG: 1.046
- IBU: 31.1

Steep grains in 5 gallons of 156° F (69° C) water. Add extract and bring to a boil. Ferment and package as for all-grain recipe.

**Pete's Wicked Ale Clone****Ingredients for 5 U.S. gal (19 L)****All-Grain Recipe**

7.0 lb (3.2 kg) two-row pale malt (substitute six-row for historical accuracy)  
2.9 lb (1.3 kg) 60 L crystal malt  
2.0 oz (56 g) chocolate malt  
0.5 oz (14 g) Chinook (10.8% alpha) 45 minutes  
1.0 oz (28 g) Cascade (5.4% alpha) 15 minutes  
0.5 oz (14 g) Cascade (5.4% alpha) at knockout

- OG: 1.053 (13 °Plato)
- IBU: 30

Single infusion mash at 155° F (68° C).

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Ferment at 68° F (20° C) for one week or until final gravity of 1.012. Rack into secondary for one week, or until clear, and package.

### Extract Recipe

(for old school historic accuracy)

- 4.0 lb (1.8 kg) Light Dry Malt Extract
- 2.9 lb (1.3 kg) 60 L crystal malt
- 2.0 oz (56 g) chocolate malt
- 0.5 oz (14 g) Chinook (10.8% alpha)  
45 minutes
- 1.0 oz (28 g) Cascade (5.4% alpha)  
15 minutes
- 0.5 oz (14 g) Cascade (5.4% alpha)  
at knockout

- OG: 1.053 (13 °Plato)
- IBU: 30

Steep grains in 5 gallons of 156° F (69° C) water. Add extract and bring to a boil. Ferment and package as above.

Send your letters to "Dear Zymurgy," P.O. Box 1069, Gresham, OR 97030, fax (303) 447-2825 or e-mail [jim@aob.org](mailto:jim@aob.org). Hey homebrewers! If you have a homebrew label that you would like to see in our magazine, email it to [kelli@aob.org](mailto:kelli@aob.org).

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BY GARY GLASS

## Beer Rush '04

**B**eer, mead, food and costumes. It's the best event homebrewing has to offer—Club Night at the AHA National Homebrewers Conference just keeps getting better! If you were there, you know what I mean. If you weren't, start making plans now to be in Baltimore next June! The huge ballroom that housed Club Night was packed with 635 homebrewers eager to sample from the 27 clubs signed up to serve their finest brews and grub.

Beers available at Club Night ran the gamut from your standard pale ales to Randy Mosher's Aunt Jemima's Maple Buckwheat Ale that was pouring at the Chicago Beer Society table. The Maltose Falcons of Woodland Hills, Calif. brought their multitap bar (which includes two beer engines!) and were serving up among their many flavors four saisons—one for each season. They also had a slot machine tap that poured only when you hit the jackpot. Speaking of unusual serving devices, the Southern Nevada Ale Fermenters Union (SNAFU), one of the conference's host clubs, had a cactus that poured beer and a papier-mâché dog that urinated chili pepper mead.

Oh mead, oh my! There were some truly outstanding meads in the house. AHA director Paul Gatz's tasty boysenberry mead was flowing at the Hop Barley and the Alers booth, where the soothing sounds of reggae mixed with questions like "what kind of yeast did you use for that strong ale?" Alers members could easily be spotted as they all had donned tie-dyed shirts, sunglasses and dreadlocks. The Great Northern Brewers of Anchorage, Alaska brought several varieties of mead for their Club Night table. Former AHA Meadmaker of the Year Steve Schmitt was kind enough to pour me a sample. Pete "Beer Dude" Ricks had an excellent dessert honey mead along with a few other options at the Arizona Society of Homebrewers booth.



**2005 Baltimore Conference Committee Chair Les White (center) and the Germans look forward to crabs from Chesapeake Bay next June.**

Among the food options, there was a doppelbock ice cream at the SNAFU booth that was getting rave reviews. Hop Barley and the Alers brought along some jerk chicken that fit in nicely with their Rastafarian theme. The Frederick Original Ale Makers (FOAM), one of the organizing

clubs of next year's conference in Baltimore, showed off one of Maryland's main attractions with a delectable crab dish. They also displayed their stylish foam crab hats—I don't know about you, but I think this is a fashion statement that is on the verge of really taking off!

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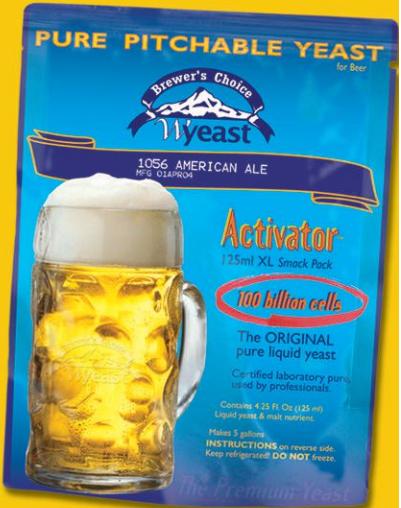
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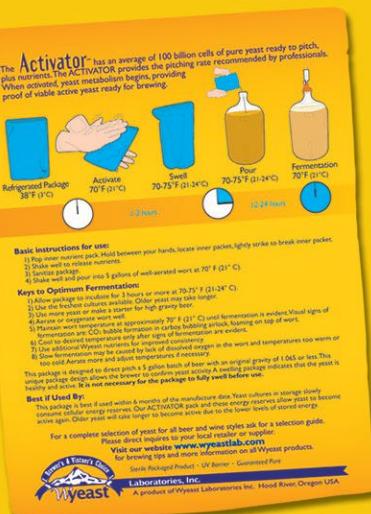
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Ingredients for 5 U.S. gal (19 L)

- 1 can Coopers Light Malt Extract
- 1.5 lb Coopers Light Dry Malt Extract
- 1.5 lb Weyermann Smoked Malt
- 1.0 lb Carafa
- 2.0 oz (56 g) Hallertauer, 4.5% alpha acid (60 min)
- 0.25 oz (7 g) Hallertauer, 4.5% alpha acid (20 min)
- 0.25 oz (7 g) Hallertauer, 4.5% alpha acid (2 min)
- Wyeast 2308 Munich Lager Yeast or White Labs WLP830 German Lager Yeast
- 0.75 C (180 ml measure) corn sugar for bottling

- Original specific gravity: 1.051
- Final specific gravity: 1.012

- IBU: 30
- ABV: 5.2%

Steep grains in 1 gallon of 150° F water for 20 minutes. Remove grains and sparge with 1 gallon of 170° F water. Stir in extract and bring to a boil. Add bittering hops and boil 40 minutes. Add 0.25 oz Hallertauer. Boil 18 minutes and add 0.25 oz Hallertauer. Boil another 2 minutes then turn off burner. Pour into fermenter with enough cold water to make 5 gallons. When temperature is below 68° F, pitch yeast and aerate well. Ferment at 50° F for two weeks or until fermentation is complete. Raise temperature to 65° F for a two-day diacetyl rest. Rack the beer and age for a month at 30° F. Prime with corn sugar and bottle.

## 2003-2004 Homebrew Club of the Year Top 26

Rank	Points	Club
1	262	.Quality Ale and Fermentation Fraternity (QUAFF)
2	170	.Great Northern Brewers
3	158	.Society of Akron Area Zymurgists (SAAZ)
4	152	.Saint Paul Homebrewers Club
5	136	.Urban Knaves of Grain
6	134	.Ale & Lager Enthusiasts of Saskatchewan (ALES)
7	98	.Edmonton Homebrewers Guild
8	70	.Maltose Falcons
9(T)	62	.Bay Area Mashtronauts
9(T)	62	.Kansas City Bier Meisters
9(T)	62	.Underground Brewers Club of Connecticut
12	60	.Strange Brew Homebrew Club
13	58	.Upstate New York Homebrewers Association
14	54	.Southern Nevada Ale Fermenters Union (SNAFU)
15	44	.Hop River Brewers
16(T)	42	.Prairie Homebrewing Companions
16(T)	42	.Prime Time Brewers
18	40	.Foam Rangers
19(T)	34	.Brewers United For Real Potables (BURP)
19(T)	34	.Niagara Association of Homebrewers
21(T)	30	.Austin Zealots
21(T)	30	.Fellowship of Oklahoma Ale Makers (FOAM)
23(T)	28	.Arizona Society of Homebrewers
23(T)	28	.Central Florida Homebrewers
23(T)	28	.Foam on the Range
23(T)	28	.Society of Northeast Ohio Brewers (SNOBS)

**2004-2005 AHA Club-Only Competitions  
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See [www.beertown.org/homebrewing/schedule.html](http://www.beertown.org/homebrewing/schedule.html) for complete schedule



Month	Style or Name	Cat. #*	Host
Sept/Oct	Smoke-Flavored & Wood-Aged Beer	22	Mountain Ale & Lager Tasters
Nov/Dec	IPA	14	James River Brewers
Jan/Feb	Irish Red Ale	9D	MUGZ
Mar/Apr	Sour Beers	17	New York City Homebrewers Guild
May	Extract Beers	ALL	Hogtown Brewers

\*Category numbers refer to the 2004 version of the BJCP Guidelines, see [www.bjcp.org/stylecats04.html](http://www.bjcp.org/stylecats04.html).

In my book, the best food in the house was at the Surf City Brewers booth. This four-member San Diego, Calif. club was offering samples of the best sausage I've ever had—kielbasa and roasted garlic sausage. To go with their homemade sausages, the club had some beer mustards made from scratch. These included a wit Dijon and mustards made with Alaskan Smoked Porter and Stone Arrogant Bastard. The helles they had on draught was delicious as well.

Decked out in medieval costume and guarding a castle that surrounded their booth, Henderson, Nev.'s Harvest Moon Brewers most definitely had the most elaborate get-ups of the event. Knights bedecked in homemade chain mail and brandishing spears (I wonder what the other hotel patrons thought of these guys as they rode the elevator down to the lobby that night!) stood outside the castle entrance sipping homebrew and describing the finer details of authentic medieval dress. These guys without a doubt earned the award for the best costumes/booth design at Club Night—the prize for which was the pissing dog draught system. I imagine it would make a great conversation piece for the next time the in-laws visit!

So what's your club planning for next year's conference? Guess we'll find out in Baltimore.

#### 2004 AHA Club of the Year

Being just a few hours' drive from Las Vegas, it's no surprise that Quality Ale and Fermentation Fraternity (QUAFF) had a large contingent of members on hand for the AHA National Homebrew Competition awards ceremony at the National Homebrewers Conference to lift the Homebrew Club of the Year trophy up on stage for the fourth year in a row. With a sizeable 64-point lead over the next highest-ranking club going into the second

round of the National Homebrew Competition, it was going to be tough for anyone to catch them. Then QUAFF member Jamil Zainashoff, the 2004 Ninkasi Award Winner, racked up an incredible six medals, earning the club another 26 points on his own. Eight other club members also took medals.

You would think that after winning the Club of the Year title three years in a row, club members would have thought to sit a little closer to the stage. They definitely got their exercise as they walked from the back of the banquet hall to the stage 15 times before the whole club came up to accept the Club of the Year Award. By the time all the National Homebrew Competition medals had been given out, QUAFF had racked up 262 points and had a 92-point lead over the first runner-up.

That first runner-up club was the Great Northern Brewers who moved up from the number three spot in the 2003 competition.

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Next was the Society of Akron Area Zymurgists (SAAZ) who improved upon their fourth place finish in 2003.

The Ale & Lager Enthusiasts of Saskatchewan (ALES) came in at an impressive sixth place in the Club of the Year rankings despite having all of their second-round entries

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rejected by U.S. Customs (what a nightmare!), meaning all of their 134 points came from the first round. Look out for this club next year when their entries earn second-round points!

See the table in this column for all of the top-ranking clubs in the 2003-2004 competition.

### **Beertown Club Locator**

Help us keep our online club locator up-to-date! Please check out your club's listing on [www.beertown.org](http://www.beertown.org). Just select Homebrew Clubs from the Locator drop down box on the right side of the beertown pages. Homebrew clubs are arranged alphabetically by city. If

your club is not listed, use the online form to add it. You can also make corrections to listed clubs or delete clubs that no longer exist via the online form. Thanks for your help!

### **Extract Club-Only Competition**

The AHA thanks Terrence Garland and the Bluff City Brewers of Memphis, Tenn. for hosting the Extract Club-Only Competition on May 20. This competition covered all of the BJCP beer categories. Entries were required to have extract making up at least 50 percent of the fermentables in the recipe. This was the last of six competitions in the August to May

2003-2004 cycle, with points going toward the Homebrew Club of the Year trophy. Points are awarded on a 12-8-4 basis for first, second and third place in the club-only competitions. First, second and third places in the first and second rounds of the AHA National Homebrew Competition earn points on a 6-4-2 basis.

Of the 42 entries the winners were:

#### **First Place**

Francis Divilio, Jr. of Norman, Okla. Representing the High Plains Draughters with Mike's Saison

#### **Second Place**

James Paige of Houston, Texas Representing the Foam Rangers with Oobie Doobie, an American-style barleywine

#### **Third Place**

Terry Felton of Holland, N.Y. Representing The Sultans of Swig with Tannery Brick Dark, a schwarzbiere

Congratulations to all of the winners, and thanks to all of the club representative brewers who entered!

### **Smoke-Flavored & Wood-Aged Beers AHA Club-Only Competition**

The October AHA Club-Only Competition is Smoke-Flavored & Wood-Aged Beers, covering BJCP Category 22 in the new 2004 BJCP Style Guidelines. This competition is hosted by Jay Adams and the Mountain Ale & Lager Tasters of Black Mountain, N.C. One entry of two bottles is accepted per AHA registered homebrew club. Entries require a \$5 check made out to AHA and an entry/recipe form and bottle ID forms. More information on the Club-Only Competitions and forms are available at [www.beertown.org](http://www.beertown.org).

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Entries are due October 9, 2004. Judging will be held October 21, 2004. E-mail for questions or those interested in judging is [goosepoint@teleplex.net](mailto:goosepoint@teleplex.net).

**Gary Glass is project coordinator for the Association of Brewers.**

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BY PROFESSOR SURFEIT

## Feeling Bleachy

Dear Professor,

I recently read an article in a "major" wine magazine about TCA (2,4,6 trichloranisole), the chemical compound responsible for off flavors in corky wines. It seems one of America's largest wine producers has entire wineries that are tainted with TCA. They suspect that chlorine-based products that had been used to clean the winery may be the culprit. "When chlorine comes in contact with phenols and mold, the combination can create TCA."

Professor, could this ever be a problem for beer makers who clean with bleach? Could we be drinking "corky" beers and not even know it? (It is harmless to humans, by the way). Should we start smelling bottle caps when the waiter opens our beer?

Signed,  
Feeling Bleachy

Dear Feeling,

Corks will have their own microflora of bacteria residing on their surface. Cork is also an organic compound. The combination of bleach with those particular conditions evidently gives rise to "corky" wine character.

Brewers who use bleach to sanitize are not very likely to get corky characters, but if there is any residue of bleach that ultimately comes in contact with beer the resulting reactions between chlorine bleach and organic compounds give rise to flavors and aromas in beer often described as chlorophenolic. It is reminiscent of plastic Band-Aid aroma.

I rinse my bottle caps in a bit of neutral spirits like high alcohol cheap vodka or grain alcohol. This doesn't require additional rinsing.

Hope this helps.

Quirky,  
The Professor, Hb.D.

ILLUSTRATION BY JOHN MARTIN

## Bumper Cropping Yeast

Dear Professor,

I have questions regarding the skimming of top cropping yeast strains. First, how much should be taken and how do you measure that? I'm concerned that if too much is taken it will affect the ongoing fermentation, robbing it of proper yeast saturation. Secondly, once collected does the yeast have to be stepped up again or can it be pitched directly into another batch? I'm intrigued with the concept of skimming yeast but would like to know more before trying it.

Thanks,  
Thom Tash

Dear Thom,

*The amount of yeast you would need to harvest to pitch into your next batch of ale*



will not significantly affect the existing fermentation. So don't worry about the amount. All you will need is about a pint of skimmings. When to crop is dependent on the strain of ale yeast and the temperature you are fermenting. Temperatures too cool will drop the yeast back into the ferment. Some strains of yeast do not flocculate to the top very consistently. If you have the right strain of yeast and it is cropping at the surface (usually and only for a brief period of time; 24 to 48 hours) you will see not only foam at the top, but also puddles of yeast forming among the foam. This is the time to skim.

Use sanitized equipment. Dipping screen strainers in sanitizing solution will not sanitize the equipment. Woven metal strainers need to be boiled in water. You can use a large shallow stainless steel spoon to skim as well. I don't advise using wooden or plastic utensils.

Place the skimmings in a sanitized glass jar and place a fermentation lock configuration on top. Do not seal the container! The yeast will settle out to the bottom within a day. You can use it immediately or you can keep it at cool temperatures for a few days and still use to pitch and expect vigorous activity.

Note that if you are skimming a stout and pitch the yeast into a pale ale, you will end up with an amber ale. If you skim an India Pale Ale and pitch the yeast into a mild ale, you will end up with a somewhat more bitter mild ale. Yeast will carry over some degree of color and bitterness from the batch it has been harvested from.

This all being said, it is imperative that your fermenting beer be pure of yeast and that you don't expose the harvested yeast to bacteria or wild yeast.

Good luck and keep on skimming,  
The Professor, Hb.D.

## Beer Streams

Dear Professor,

Well, let me start off by saying that I just started kegging recently, so am still a novice in regard to how to deal with kegs. Below lists the events that occurred on March 20, 2004.

I am on my way to a NCAA tourney party with my corny full of Return of Walter Payton Tribute Coffee Stout. One thing I realize is that I forgot my CO<sub>2</sub> tank—no big deal, I thought. This being my first keg, I thought it would hold a constant pressure and not need additional CO<sub>2</sub> to maintain the levels inside. Well after about a half hour, I successfully swayed the majority away from the water that they were drinking (light beer) and we were now in business. After about seven to eight pours, there no longer was pressure inside the corny, so two friends and I went back to my place to get the CO<sub>2</sub> tank.

We are now back at the party with the CO<sub>2</sub> tank. This is where the fun begins! Let me start off by saying that I was at my friend's brother's father-in-law's house. The man looks just like Uncle Junior from "The Sopranos." We are in his beautifully finished basement with a nice pool table, bar, etc. The owner and his wife are playing Texas Hold 'Em right around the corner.

It is now time to attach the CO<sub>2</sub> to the corny. Now blame this on us not thinking or on the Arrogant Bastard that I was drinking (thanks Tony!) but we forgot to check out the PSI gauge prior to attaching the CO<sub>2</sub> to the tank. So without thinking, I turn on the gas, and in about six seconds, CAH-BLAMMOW, the tapper on the other side shoots off, and we now have beer spraying in a stream over the pool table, onto the wall on the other side and all over the carpet. My friend Scott decides to take one for the team, jumping in front of the stream while I panick to turn off the gas.

So I turned off the gas, released all pressure inside the corny and just looked at the hell that was unleashed. Wow! I couldn't believe what I was seeing. We quickly got towels and cleaned everything up. Somehow no beer sprayed on the pool table or the ceiling tiles! Beer did get on the far wall, which was cleaned up nicely, as well as the far ceiling, which luckily was painted using a semi-gloss paint. Damage control at its finest! Now during this, the owners, who we could see playing cards, didn't even realize what was going

on! But wait, a seat cushion had some stout on it! So the owner's daughter quickly placed it in the wash. Well, 30 minutes later, the stain is out, but the seams in the cover are now destroyed! The daughter then takes the cover upstairs, goes into a closet and begins hand-sewing the cover! At this point, I wanted nothing to do with the keg. I told my friend that we were not going to mess with this anymore. However, the majority felt that they were being teased, having only been able to try one glass each of the Coffee Stout. We then took the keg and CO<sub>2</sub> outside, properly dialed the regulator and the rest was history!

Cheers,  
Ryan Glover

Dear Ryan,  
*Holy smokes! Lesson learned—at a price.  
And worth sharing with our readers.*

Dialing for stout,  
The Professor, Hb.D.

## Crying over Soured Lambic

Hi Professor,

I have a question I hope you can answer concerning lambic beer. My brother made a recipe for Lindemans Framboise from the book *Clone Brews*. The problem is, it turned real sour after six months of fermenting. He tossed it out. Well, I made the same recipe and it has fermented two months, but I don't want mine turning sour like his. What can I do differently to make this beer a success?

Thanks,  
R MAC

Dear R MAC,  
*I can't tell if your brother is the problem, or just the beer.*

*I've tasted really excellent results with Charlie Papazian's lambic style beers. About two years ago that rascal Charlie wrote about it in **Zymurgy** (November/December 2001). It was called Left Hand Kriek.*

*I really can't tell you what to do differently without knowing what both of you did. But I'll try to help. Generally Charlie tells me he combines ale yeast with lambic cultures right from the start. Then after about three to four*

*months he finds a good lambic beer someone else has brewed and adds that culture. Success is all about the cultures you introduce to the beer and when you do it—that's what I think. Controlling the temperature at various stages also is critical. You don't want to get the ferment or storage too warm. You also don't want to introduce oxygen into the aging brew. This will result in acetic acid (vinegar).*

*See the past **Zymurgy** article. It was a pretty good one if I do say so myself. And the resulting beer was the best homemade cherry lambic I have ever tasted.*

*Sour beers can sometimes really mellow with age. Too bad your brother threw his beer out!*

Don't cry for me Lambicina,  
The Professor, Hb.D.

## California Common Water

Dear Professor,

Quite a few members of our local homebrew club, the St. Louis Brews, are in the habit of treating brewing water to better match the regional variations needed for specific styles. One style that we have been unable to find accurate data on is "California Common." We were hoping that you might be able to dig through the vast library at the Surfeit Institute and give us the water specifics for the classic version of this style that we love so well.

Cheers,  
Bob Beckmann

Dear Bob,

*My colleague and expert witness to thousands of brews, Ray Daniels, tells me there is about a page worth of info in his bestselling book, *Designing Great Beers*. He tells us that generally the water should be soft with less than 80 ppm of carbonate and a very small amount of calcium sulfate (36 ppm calcium, 20 of sulfate). I'd say get the carbonate under 80 or so and then let her rip.*

So you heard the man...let 'er rip,  
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@aob.org.

BY JIM PARKER

# Angel City Founder Buys SoCal Brewing

**M**ichael Bowe, two-time California Homebrewer of the Year and founder of Angel City Brewing, has purchased Southern California Brewing Co. and plans to merge the two companies.

Southern California Brewing was founded in 1988 and features a German-made brewhouse. Angel City was founded in 1997.

Besides the German-style Angel City Lager, the brewery also produces the award-winning Angel City Ale, a malty amber ale, and Angel City Vitzen, a German style hefeweizen fermented with a special proprietary yeast from Germany.

Bowe plans to add Angel City Dark, a Munich dunkel style lager, an English style India pale ale and Angel City Abbey, a Belgian-style strong ale. He also plans to install a bottling line capable of producing 12-ounce and 22-ounce bottles and six-packs.

Angel City Brewing was featured in the Fine Living Networks show about beer airing this past June.

"I'm very excited about combining Angel City Brewing and Southern California Brewing Co., and I know Southern California beer consumers will benefit from this marriage made in beer heaven," Bowe said.

## Siebel Announces Scholarship Winner

John McGill of Bristol, Tenn. was announced as the winner of the Siebel Institute of Technology's fifth annual 2004 Lallemand Scholarship at the American Homebrewers Association's National Homebrewers Conference in Las Vegas, Nev.

McGill, a brewer since 1968, in recent years created an all-stainless homebrewing system "that puts many brewpubs to shame." His enthusiasm for both the science and art of brewing "makes him an ideal candidate for the Concise Course at the World Brewing Academy/Siebel Institute," according to a Siebel press release.

The Lallemand Scholarship is awarded annually to a member of the American Homebrewers Association and includes full tuition to the fall WBA Concise Course at the Siebel Institute in Chicago (November 1-12, 2004), plus a stipend of \$1,000 to assist with travel and accommodations.

The winner is drawn at random from entries submitted by members of the American Homebrewers Association at the National Homebrewers Conference each year. To find out more about the World Brewing Academy Concise Course, visit the Web site at [www.siebelinstitute.com/course\\_desc/concise\\_tech.html](http://www.siebelinstitute.com/course_desc/concise_tech.html). For more information on the scholarship, go to [www.beertown.org/homebrewing/scholarship.html](http://www.beertown.org/homebrewing/scholarship.html).

## Have You Hugged Your Yeast Today?

Perhaps you missed out on the pet rock fad, but you're not too late to get your very own cuddly pet yeast. Giant Microbes, a Delaware company specializing in plush doll representations of common microscopic organisms, has released a yeast plush doll called Beer and Bread.



The soft and fuzzy 5-inch yeast doll, complete with two little buds, joins a line-up that includes everything from the common cold to bad breath to the Ebola virus. There is even a Martian life microbe plush doll.

The Giant Microbes line was introduced in 2002 and is targeted at patients, parents, pediatricians and science buffs. Each of the dolls comes with an image of the real microbe and information about the microbe.

The Beer and Bread microbe costs \$5.95. For more information, or to order any Giant microbe—from athlete's foot to flesh eating virus—go to [www.giantmicrobes.com](http://www.giantmicrobes.com).

## Sexy Sounding Beer

It's not just a Pavlovian response—knowing that a tasty beer awaits—that gets you excited when you hear the pop of the top of a beer bottle and the gurgle and fizz as it is poured into a glass. Scientists say the sound itself is tempting your taste buds.

German acoustics expert Friedrich Bluter is advising brewers in that country on how to make their beers more appealing to beer lovers. Bluter runs Synotec, a company specializing in the analysis of product noise. He says the sound of the bottle, glass and fizz can make the taste buds ring.

Bluter believes that the design of a bottle can make all the difference to the sound the beer makes when poured, which the expert believes can make the pouring of beer an almost sexual experience for the drinker. "The shorter the distance between bottle belly and neck, the more harmonious and more erotic the beer sounds when it is poured out," Bluter told the *Süddeutsche Zeitung*.

Bluter blames the less-than-erotic tones of Bavarian wheat beer bottles for the slump in those beers' sales. He says Kolsch has an even less sexy sound. "If the brewers manage to generate deep, slow vibrations as heard with the Czech Pilsner, their beer could become even more successful."

## Swedish Brewer Makes GM Beer

It may not be PC Europe, but a Swedish brewer has produced a beer using a portion of genetically modified corn.



A consortium of the world's largest biotech companies led by Monsanto Co. helped fund Kent Persson's new light lager produced with the usual hops and barley—and a touch of genetically engineered corn.

Persson hopes to profit from the notoriety his biotech brew is generating, while biotech companies hope it can gently sway consumers as European regulators slowly reopen the continent to genetically altered foods.

In Europe, so-called GM foods must be clearly labeled. No such standard exists in the United States.

In fact, most of the European Union's 457 million residents are adamant about their food being kept free from any sort of modifications, genetic or otherwise. That

might help explain why Kent beer is hardly a barroom hit.

The brewer won't say how many bottles have been sold since the beer was unveiled earlier this year in Denmark and Sweden. But he says 4,000 bottles are on their way to stores and pubs in Germany and he's in talks with stores in the United Kingdom.

In April the EU lifted a six-year moratorium on new biotech food, but just barely. The previous month, it approved the sale of a modified strain of sweet corn, grown main-

ly in the United States. But any food containing that corn must be labeled as genetically modified.

U.S. farmers argue that the labeling amounts to a de facto ban, and the Bush administration says it will continue pushing its biotech trade complaint at the World Trade Organization.

The corn in Kent was approved for use in 1998, before the European moratorium started, and is grown in Germany. The Monsanto-created corn seed is spliced with a bacterium's gene to resist the corn borer pest without the need for insecticides. The other companies involved in the project are Bayer CropScience, DuPont, Plant Science Sweden, Svaloef Weibull and Syngenta.

Greenpeace activists chased Kent-laden beer trucks in Sweden and Denmark, discouraging store and tavern owners from buying the brew when it was first introduced, and Greenpeace continues to pressure big grocery chains to avoid stocking it.

Dan Belusa, a Greenpeace spokesman, said the protest encouraged ICA, a large Swedish grocery store chain, to remove Kent from its shelves.

Kent is now being sold through the Swedish state-owned liquor monopoly, Systembolaget in southern Sweden, and there have been no protests. But its availability is limited.

### \$700 for a Bud Light?

From the "only in Nebraska" file: An Omaha man drove 315 miles and paid \$700 for the honor of drinking a Bud Light in Tryon, Neb.

Well, OK, so maybe it wasn't just any Bud Light; it was the first legal beer ever sold in the town.

Fred Jalass outbid the crowd at the Iron Horse Saloon on July 9 for the rights to drink the first legal beer in McPherson County's 114-year history. Tryon is the county seat of McPherson County and is about 35 miles from North Platte.

The ceremonial first pour was preceded by an auction for the first beer, with proceeds going to a scholarship for a McPherson County High School student.

Auctioneer Denny Isabell of North Platte, who arrived with his crew in a white

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stretch limousine, called for \$1,000, but soon accepted an opening bid of \$100. The bidding went up \$50 at a time and reached \$500 before it stalled.

"This is the fun part," Isabell said as the crowd took a breath. "You can go ahead and bid and see who gets stuck with it."

There was a round of laughter.

In deference to patrons who still oppose tippling, the saloon will include a dining room where booze won't be served.

### A-B Completes China Brewery Buyout

Anheuser-Busch has completed China's first-ever contested takeover involving foreign companies by acquiring nearly all of the stock of Harbin Brewery Ltd.

Anheuser-Busch said it now owns 99.66 percent of China's fourth-biggest brewery, a month and a half after its takeover offer trumped a rival offer from SABMiller.

Hong Kong stock exchange rules require minority shareholders to sell their shares in a listed company at the offer price once the buyer owns more than 90 percent of the stock.

Anheuser-Busch's victory came after a months-long struggle—and failure—by SABMiller to take control of Harbin Brewery. The South Africa-based beer maker already controlled 29 percent of Harbin Brewery as well as 49 percent of China Resources Breweries Ltd., Harbin Brewery's biggest competitor in its home market of northeast China.

SABMiller twice tried and failed to buy a block of Harbin Brewery shares once owned by the local government. In a surprise to SABMiller as well as to analysts, Anheuser-Busch bought the stake and forced SABMiller's hand.

The South African brewer responded by offering to buy out all other SABMiller shareholders, including Anheuser-Busch. SABMiller wanted to combine China Resources Breweries and Harbin Brewery to cut costs. They promised that no jobs would be lost and top Harbin Brewery managers would remain in place.

Harbin Brewery executives didn't agree. They advised shareholders to reject SABMiller's takeover offer and openly welcomed Anheuser-Busch's investment.

Anheuser-Busch, the only company in the world that produces more beer than SABMiller, already owned 10 percent of China's biggest beer producer, Tsingtao Brewery Co. and it regards China—the world's biggest beer market and growing at 6 percent a year—as crucial to its future.

Harbin, based in the northeastern Chinese city of the same name, makes Hapi beer, a brand with little recognition outside its home region. Still, Harbin Brewery is big enough in China's fragmented beer market to rank fourth on the list of China's biggest brewers by volume.

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

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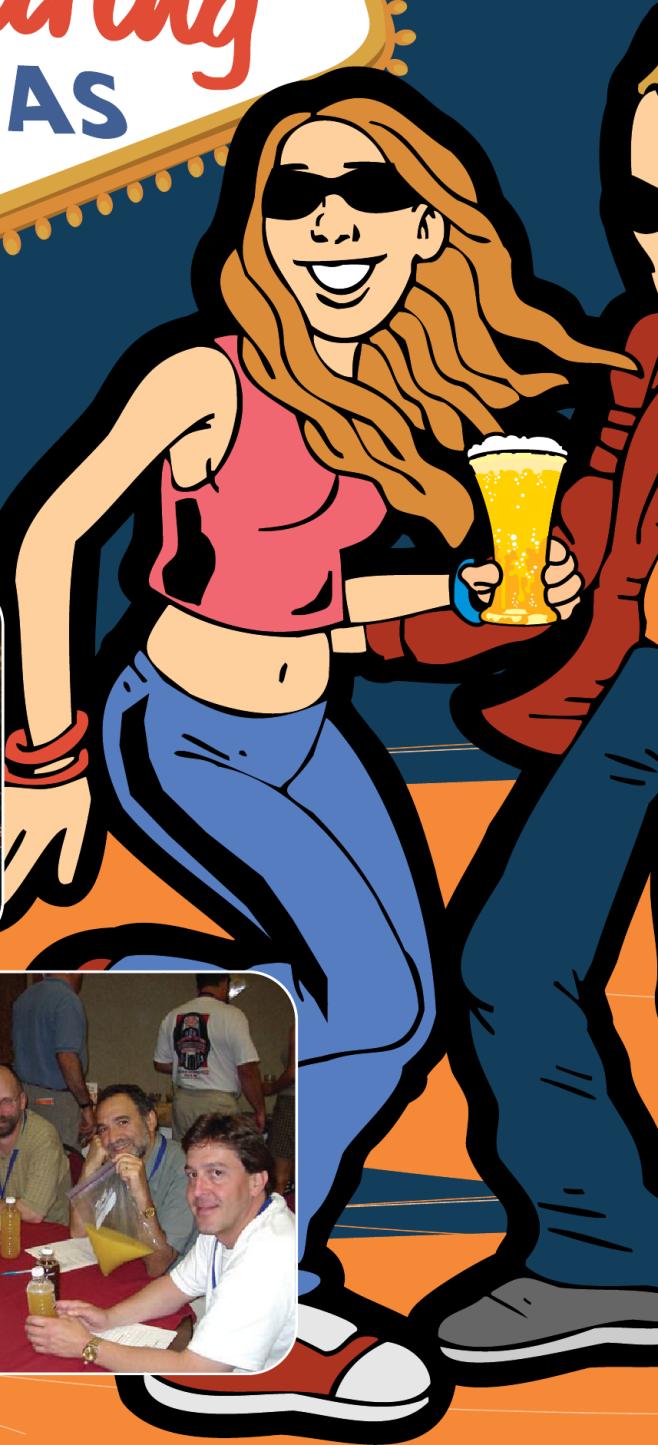
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# HBC Rolls Sevens in Vegas

## WELCOME

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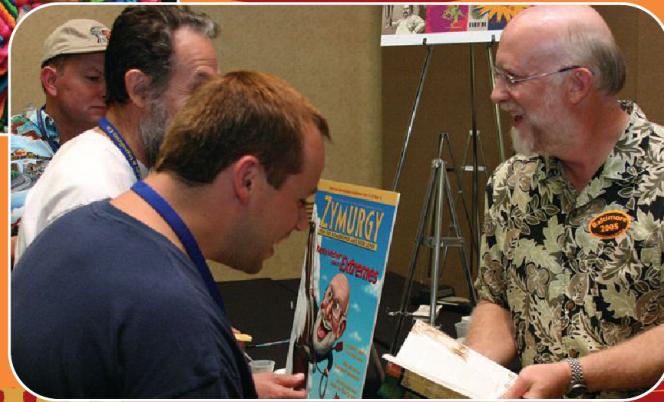
# By Jim Parker



Some said the American Homebrewers Association was taking a gamble by holding its 26th annual National Homebrewers Conference in Las Vegas June 17-19, but everything came up sevens with record attendance, a record number of entries in the National Homebrew Competition and three days filled with the proper mix of education and imbibing in Sin City.

The final tally of 776 attendees for Beer and Loafing in Las Vegas topped the previous record of 769 attendees at the 2003 conference in Chicago. The National Homebrew Competition became the largest homebrew competition yet with 4,443 total entries judged, a leap of more than 1,000 over 2003's entries.

The record attendance and competition entries proved AHA president Charlie Papazian's pre-conference proclamation that "Homebrewing is alive and rocking." Even Elvis himself—who looked surprisingly like a recently shaved AHA director Paul Gatza—showed up for the grand banquet and awards ceremony. .... ►



The fun started after a full day of judging with a pre-conference food and beer pairing event at the University of Nevada-Las Vegas. The food and beverage department at the university teamed with local home and craft brewers to pair a wide range of beers with everything from stuffed olives to beer cheese soup to quail to cheesecake.

Fred Eckhardt got the official show rolling at the opening toast, leading the assembled brewers in a sing-a-long. Gatz and Tyce Hildebrand of the local organizing committee also offered words of welcome.

Then it was time to get down to business. Speakers at the conference ranged from professional brewers such as Geoff Larson of Alaskan Brewing, Vinnie Cilurzo of Russian River Brewing, Tom Nickel of Oggi's and Tomme Arthur of Pizza Port to noted homebrewers like Randy Mosher and Ray Daniels. The speakers' list even dipped into the halls of academia, with Dr. Robert Wallace of Iowa State University delivering a spirited lecture on the botany of beer.



After days of educational seminars, attendees were ready to kick back with plenty of great beer. Thursday night featured Pro Brewers Night with more than two-dozen craft breweries presenting their wares in an informal festival setting. Many of the brewers themselves were on hand to hobnob with the homebrewers.

Friday night, it was the homebrewers' turn to show off with the popular Club Night festivities. More than 30 clubs brought in

anything from handfuls to truckloads of great homebrew. Individual booths ranged from simple tables with a jockey box and a few chilled corny kegs to the elaborate castle, complete with robe-draped "monks" and chainmail-garbed guards, of the Harvest Moon Brewers. Homebrewers could test their luck against a beer-dispensing slot machine or take their chances at getting mead from a leg-lifting dog statue.

Brewers also brought other homecrafted goodies such as sausages, mustards and jerk chicken. The event, which was scheduled to end at 11 p.m., didn't close until after 4 a.m. Attesting to Las Vegas' "24 hours of fun" mentality, there was still plenty of great homebrew to be found at that hour. A hospitality suite, staffed by a rotating selection of homebrew clubs, kept the beer pouring around the clock.

The other Friday highlight was the keynote luncheon. Papazian dusted off his hilarious 1981 homemade film, "Homebrew Madness," a parody of the government's "Reefer Madness" 1936 propaganda film.

After another full day of seminars on Saturday, it was time to announce the winners in what has become the world's largest beer competition. With the 4,443 first-round entries judged at 10 sites across the U.S. and Canada—including a separate cider site—the 2004 AHA National Homebrew Competition judged more than twice the number of beers

## NATIONAL HOMEBREW CONFERENCE BY THE NUMBERS

More than 1,000 total volunteer hours

776 total attendees

610 grand banquet attendees

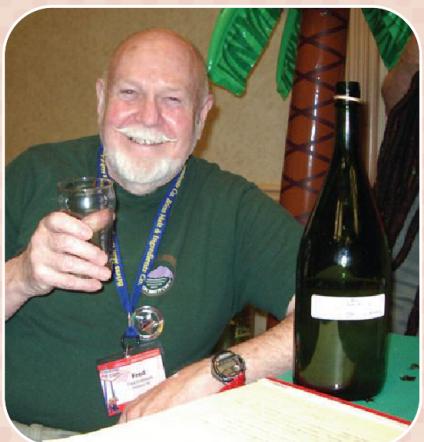
65 hours of great homebrew in the hospitality suite

46 states represented, plus Canada

24 hours of educational seminars

2 Elvis sightings (Club Night and Grand Banquet)

1 Super-8 cult classic movie ("Homebrew Madness," by Charlie Papazian and Charlie Matzen)



entered in the Association of Brewers Great American Beer Festival in 2003. The entries came from 1,058 brewers in 46 states, plus Washington D.C., Japan and Canada.

A total of 649 beers and meads advanced to the second round in Las Vegas. All ciders are judged in one round at the cider site. After three days of intense judging, gold, silver and bronze medals were awarded in 29 categories. For a complete winners list, see page 54.

In addition to the individual awards, the AHA also presented five special awards:

- Homebrewer of the Year Award to the beer winning best of show in the 29 categories: "Rocket" Rod Romanak of Kailua-Kona, Hawaii and Kona Coast Barley Boys Homebrew Club for his robust porter.
- Ninkasi Award to the winningest brewer: Jamil Zainasheff of Elk Grove, Calif. and QUAFF Homebrew Club.
- Meadmaker of the Year for the best of show mead: Joe Formanek of Bolingbrook, Ill. and Urban Knaves of Grain Homebrew Club for his varietal mead.

## NATIONAL HOMEBREW COMPETITION BY THE NUMBERS

4,443 total entries (2003 total: 3,340)

1,058 brewers participating

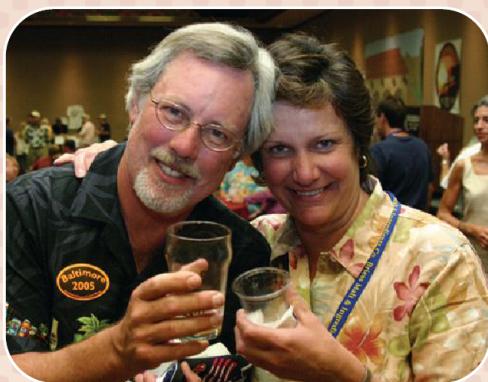
740 beers and meads advancing to the second round

649 beers and meads judged in the second round

108 judges and 28 stewards in the second round

87 individual medals awarded

29 styles judged



“**THERE'S  
A LOT OF  
BEER IN THIS  
BEER.**”

- Mike Bardallis, 3 a.m.

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

# WHY NOT

WE have a saying here in California's wine country: "It takes a lot of beer to make good wine." There's truth in that, of course. If you work at a winery during the grape harvest, you can't drink much wine while struggling through very long days.

An occasional beer, however, may help get a winery "cellar rat" past the 12- to 18-hour shifts on through to November, when things calm down.

The saying also implies that there's not as much difference between "beer people" and "wine people" as the relative images of beer and wine initially seem to suggest. As someone who makes both beer and wine, I'd have to agree.

## BEER PEOPLE MAKING WINE

To illustrate, let me namedrop a bit, and mention two prominent beer people who have been to my shop, not in a beer related capacity, but as winemakers.

Don Barkley, still head brewer at Mendocino Brewing Company and creator of Red Tail Ale, makes wine at home.

Fritz Maytag, longtime owner of Anchor Brewing Company and "Father of the Good Beer Movement in America," grows grapes and makes wine. If memory serves, Maytag has been known to make cider as well.

Without question, serious homebrewers can also be good winemakers. The ability to appreciate subtleties in one craft is likely to be translatable to a related field of endeavor. A good palate for beer should carry over to wine, whether you make the wine or just enjoy it.

If that's true, then why aren't more homebrewers also winemakers?

First, some brewers are put off by the length of time wine takes to age. Though some fruity white wines can be bottled within just a few months, red wines are usually not bottled for nearly a year, and sometimes longer. That's a long time to tie up your storage capacity if space is limited.

Some brewers may not like being limited to only one time of year. Beer is a year-round activity and, in a technical sense, you can have virtually total control over the recipe.

Working with grapes, however, requires waiting for the harvest to come around on its own terms, making only minor adjustments to what nature gives you. It immerses you in the seasons, the annual cycle of life, death and rebirth. Perhaps this cycle reminds us too much of our mortality, and encourages a humility we're not used to embracing.

Perhaps more obviously, some brewers really don't like wine, though I doubt that this is a widespread phenomenon.

Based on years of experience teaching both brewers and wine-

makers, however, the number one reason more brewers aren't wine-makers is, quite simply, fear.

I can't begin to recall how many times over the years a brewer has, almost timidly, asked me how much harder wine is to make than beer. The reverse is never asked. It seems the wine industry has done its job well, creating a mysterious and intimidating aura for their product. This is unfortunate.

Winemaking and brewing are both crafts likely to yield success immediately, and with either one, you can have the joy of spending the rest of your life refining your skills without ever mastering everything there is to know.

At its most basic level, however, wine is far easier to make than beer. A 12 percent alcohol, 3.5 pH solution is much less susceptible to contamination than a 5 percent alcohol, 4.4 pH solution. Some things can go wrong with wine, but it's a much easier process to control.

## THE CRUSH

Let's set the scene. After the grapes are picked, the winemaking process begins. In the case of red wines, grapes are run through a device that crushes the grapes (breaks the skins) and removes the large stems. Stem removal allows red wines to ferment in contact with the skins (that's where the color comes from) for several days without becoming excessively tannic.

It should be mentioned that the scene during crushing would probably horrify many brewers at first. The juice that flows is ugly, muddy looking stuff that ranges from a grayish green to a dull and opaque pink.

As the machine separates the crushed grapes and spits out the large stems along with a few bees and spiders, a lambic brewer might feel right at home. Other brewers, assessing the scene, might be tempted hold up some sort of talisman to protect themselves from contamination.

The initial ugliness is deceptive, though, and that's where that extra alcohol and acidity come in, making wine more stable than beer and winemaking the easier of the two crafts. A scene that would give most brewers nightmares doesn't destroy the wine. Once the wine has been fermented and aged, that strange looking juice with a bee floating in it might well become a luminous and remarkably delicate Pinot Noir.

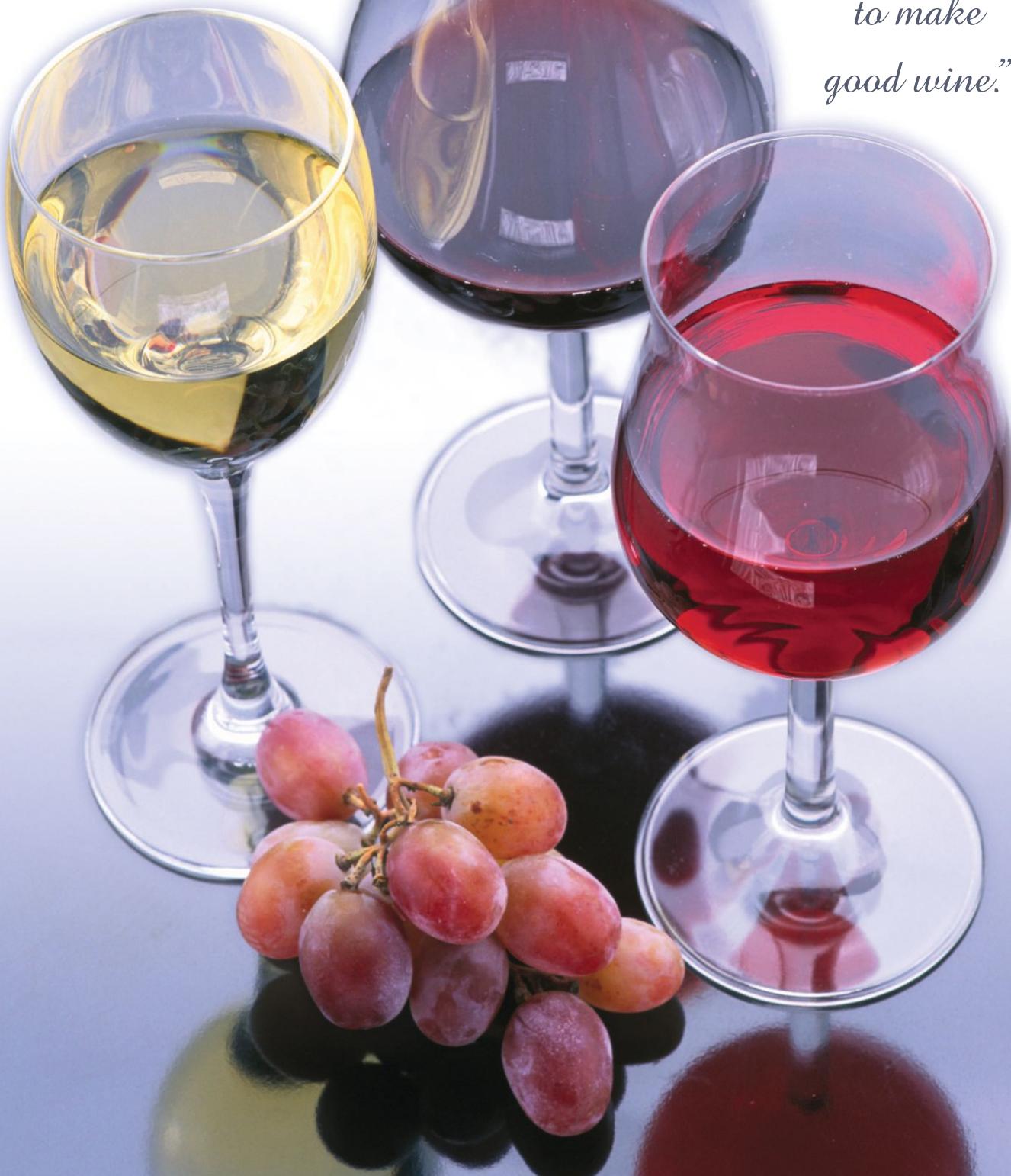
## TESTING

As soon as the crushing takes place, the sugar and total acid levels are tested, and if adjustments are needed, they can be made at that time.

# WINE?

BY BYRON BURCH

*"It takes  
a lot of beer  
to make  
good wine."*





*If you're already brewing,  
you already own at least some of the  
equipment necessary for wine*

Most winemakers follow the industry's lead and measure sugar using the Brix (aka "Balling") scale, rather than specific gravity. This is a more or less direct reading of the percentage of sugar in the juice.

Note also that total acid is not the same as pH, which sophisticated winemakers also test. Total acidity is a way to measure the tartness present in wine, which affects the flavor balance, while pH measures only the stable acids that help keep the wine sound. This makes sense if you consider that acetic acid (vinegar) will add to a wine's perceived tartness, but it will obviously not improve a wine's stability.

As soon as these tests have been done and any necessary corrections made, the must is "sulfited." Must is a winemaker's word describing the unfermented state, roughly equivalent to the brewing term wort.

Sulfite refers to potassium or sodium metabisulfite, which winemakers use in small amounts as a spoilage retardant and antioxidant. It is added prior to fermentation and each time the wine is transferred, as well as at bottling time.

## FERMENTATION

Next, the yeast is added. Many yeast strains are available, and the choice will be determined by the kind of grapes being fermented, fermentation conditions or (as with beer yeasts) the precise characteristics desired in the wine. Yeasts might be selected for alcohol tolerance, for example, or because they will work well at a particular temperature.

Red wines are fermented "on the skins," because the skins contain the color. During fermentation, the skins are pushed up by the escaping gas and form a solid mass on the surface. Twice a day, they are pushed back down and submerged in the ferment-

ing wine. After fermentation, which usually takes one or two weeks, the wine is pressed out, leaving the skins behind.

With white wines, pressing takes place within 24 hours of crushing and before yeast is added, so fermentation takes place with the juice alone.

Two other differences between the making of red wines and white wines should be mentioned. One involves the temperature of fermentation. White wines are best fermented under cool conditions. Studies have shown that aromatic quality is improved if white wines are fermented cooler than 70° F. With reds, however, allowing the temperature to reach 85° F or so at least briefly during fermentation helps with color extraction.

The other difference involves a bacterial action called Malolactic Fermentation (MLF). This process converts malic acid, a natural acid present in grapes, into the softer lactic acid. MLF lessens the younger, fruitier character of a wine, and leaves the wine seeming older and "winier." That's why it is considered desirable in red wines, but less so in most whites. Usually, wine is inoculated with malolactic bacteria (*Oenococcus oeni*) around the end of fermentation.

## AGING

The rest of the winemaking process is relatively routine. The wine is moved into topped up oak, glass or stainless steel containers, and left in storage. Periodically it is moved off the sediment to a new container, topped up and stored again.

Because the sulfur dioxide obtained by sulfiting the wine dissipates rapidly, the wine is sulfited again whenever the wine is moved, and again at bottling.

## FINING

There's a bit more to the process, of course. Somewhere along the way, the wine is fined. Various fining agents ranging from isinglass to skim milk may be used depending on the exact situation. These agents are mixed into the wine and take fine particulates with them as they drop to the bottom of the container.

It is also possible to filter your wine, should you choose to do so. However, the vast majority of home winemakers content themselves with fining.

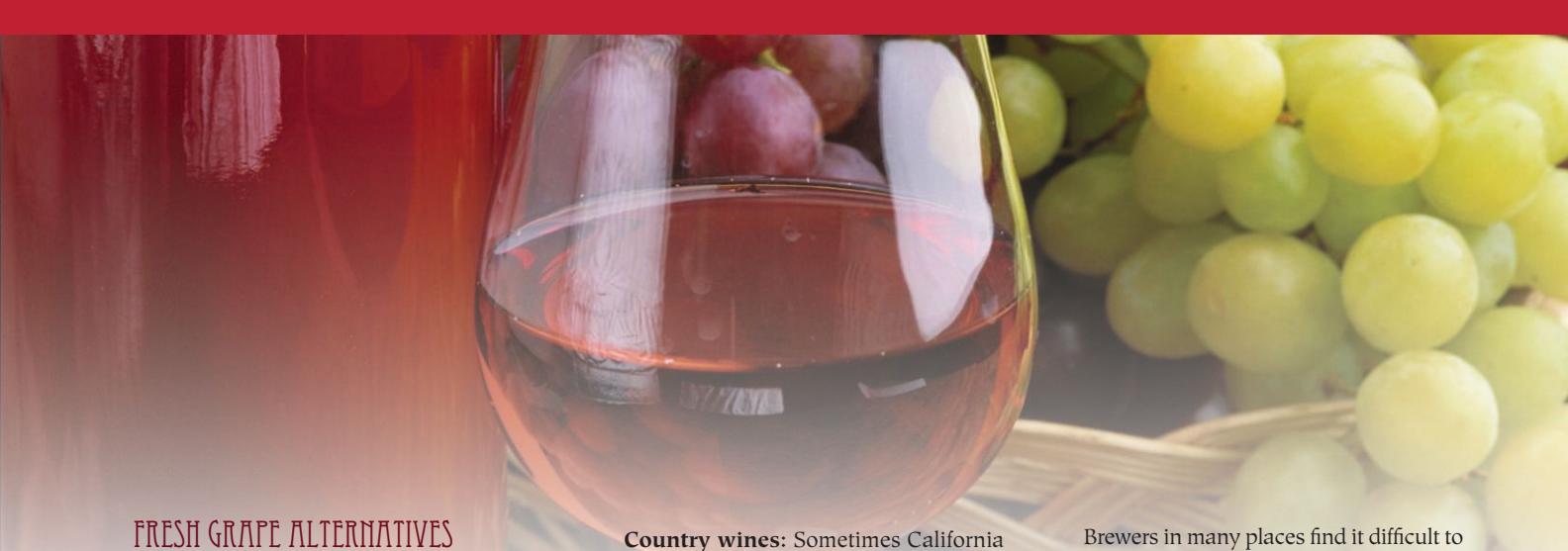
After leaving the wine for a few weeks to allow the fining agent to settle out, the wine is moved off the settling at least twice more, and then it can be bottled. This will normally be sometime in the spring for white wines, and in the early fall for reds.

## BOTTLING

The first step in bottling is to taste the wine. If you wish to sweeten it, any live yeast cells possibly remaining have to be inactivated with potassium sorbate. The sweetening itself is done by heating up sugar and water to make a simple syrup (much like a homebrewer priming his beer).

With no active yeast remaining, however, this syrup is used for sweetness rather than carbonation, and sweetening can simply be done to taste.

Once this has been done and a final dose of sulfite added, the wine is siphoned into bottles, corked and set aside into storage for a minimum of two months. This allows wine a chance to recover from the handling, or "bottle shock," of the entire bottling process. Unless your wine requires further bottle aging, it is now ready to be enjoyed whenever you wish.



## FRESH GRAPE ALTERNATIVES

Although wine grapes are being grown in many places these days, most people will not have a ready source of fresh grapes easily available. They can, however, still enjoy excellent homemade wines. There are at least three alternatives to consider, depending on your circumstances.

**Frozen grapes or juice:** In the 1970s, a California winemaker named Peter Brehm began to experiment with the freezing of crushed wine grapes (pressed juice in the case of white wines) which could then be shipped under refrigeration, bringing premium quality grapes to winemakers outside the traditional grape growing areas.

Up to that point, East Coast winemakers wanting vinifera grapes were usually limited to bulk wine grapes from California's Central Valley. These were shipped by rail or truck, often arriving in poor condition.

Freezing proved remarkably successful, and Brehm Vineyards in Albany, Calif., still freezes and ships grapes from premium vineyards in California, Oregon and Washington.

**Juice kits:** In recent years, another alternative has surfaced in the form of wine kits. Actually, wine kits have been around for decades, but the early ones weren't as good as some are now. There are some quite decent juice-pack kits on the market. Some are made entirely from juice, with color already having been extracted from the skins in the case of reds. Other kits are mostly juice with a small amount of concentrate to facilitate shipping. These kits are self-contained, containing juice, yeast, oak chips (if needed) and a fining agent. The advantages of kits include eliminating the labor of crushing and pressing, year-round winemaking and access to the hobby for some people who otherwise would be unable to enjoy it.

**Country wines:** Sometimes California winemakers look askance at the idea of making wine from fruits and berries instead of grapes, and that's unfortunate. Some extraordinary wines are made by winemakers without access to wine grapes. With the exception of cider or perry, which are made from the pure juice of apples or pears respectively, most fruit and berry wines are watered down to balance the flavors, and are fermented with juice, skins and pulp along with the juice.

When juice is diluted with water, some elements normally present in wine grape juice must be added for a proper balance. These additions may include sugars, acids, nutrients and sometimes tannin. Pectic enzyme is added to help clarify the wine by breaking up any fruit pectin present. Pectin causes particles to remain in suspension.

The more delicate fruit and berry wines can be drinkable within three or four months. Others may require aging for six months to a year.

## CONCLUSION

Home winemaking can be a worthwhile and rewarding venture, one that brewers should certainly explore. After all, if you're already brewing, you already own at least some of the equipment needed for wine.

Not only that, you are experienced with both the fermentation process and also the idea of settling for clarity. Therefore, even though there are some differences in brewing and winemaking techniques, homebrewers start out with a pretty good idea of what to expect. An experienced brewer is unlikely to be disconcerted by the initiation into winemaking, at least after the messy crushing and pressing operations are over.

Brewers in many places find it difficult to maintain temperatures cool enough (even for ale fermentations) during the warm weather months. Those, however, are precisely the months when fruits, berries and grapes are ripening. The least desirable times for brewing turn out to be the best times for making wine and mead.

Maybe that's just a coincidence. On the other hand, maybe it's the impetus we need to start making wine. Getting in tune with the passing of the seasons might not be such a bad thing, especially if you can drink the results. I suspect that's something most brewers already understand.

**Byron Burch is an internationally recognized homebrewing and winemaking expert, having taught both arts since 1972. He owns The Beverage People, a supply outlet for homebrewers and winemakers in Santa Rosa, Calif. Burch is author of *Quality Brewing and Brewing Quality Beers*. He was the American Homebrewers Association's Homebrewer of the Year in 1986, high point scorer at the AHA National Homebrew Competition in 1986 and 1988, and Meadmaker of the Year in 1992, 1994 and 2001.**

## SUGGESTED READING

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# MEAD

## WORTH THE WAIT

**A**h, mead. If memory serves me right, this is the oldest of all fermented beverages. It's a nectar of the gods, makes-you-want-to-sack-a-village type of beverage.

The first time my lips ever touched this magnificent elixir I was at Charlie Papazian's home in the early 90s. I had the good fortune of winning a pair of tickets at my local homebrew club's auction fundraiser. This would become a tradition that several of us in the club have continued. At the end of an evening of trying an array of beers, Charlie looked at the group and asked us if we wanted to try something very special. Not being a bunch of idiots, we quickly agreed to indulge him. From down in the basement Charlie emerged with a bottle of heaven: prickly pear mead. Oh, the flavors that rolled over my tongue. The beautiful sunset red hue that colored the glass... the earthy flavors that danced around my mouth.

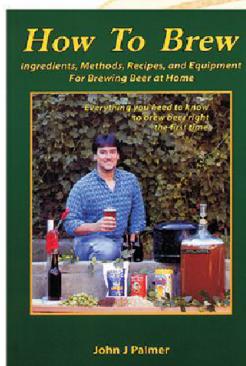
Not long after, I was having some beers with Paul Gatzza and he too asked if I was interested in trying something special (what is it with these guys?). Paul pulled out what is known around these parts as Boysenberry '94; a sumptuous dessert mead that set the bar for what dessert mead should be. I thought to myself, "Self, you could make this." I was already brewing beer at home; I knew that it would be easy to turn some of my carboys to mead. Patience was the only additional thing required. Since I always was good at saving my allowance as a kid I figured it was time to make mead.

My first mead was one that I visited often both as a homebrewer and then later as a commercial mead maker: vanilla bean cinnamon stick, made from a blend of alfalfa and wild-flower honey from Colorado. This is a wonderful wintertime mead, savory and warming. It is funny how I still make many of my earliest meads today. Next were juniper berry mead and then a big boysenberry mead made with Paul. Boysen Dome was an enormous mead. Since the hydrometer was bobbing at the top of the cylinder we estimated the starting gravity at 1.165. This mead became especially good at around five years old.

So many meads, so little time. The whole reason I went pro is because one day I realized that I had 25 or so carboys of mead going. Mead, I believe, is one of the easiest fermented beverages to make. You can make it taste like all sorts of things; it all depends on what you like. You can make a traditional or a varietal mead from just honey or you can add fruit or spices.

BY DAVID MYERS

# Want to understand your brewing better?



Check out the most recommended book for both beginning and advanced brewers alike. Whether you want short, clear instructions for your first brew or the details for *how* and *why* on your fiftieth, *How To Brew* will guide you to a better beer.

And to make your brewing calculations easier, the Home Brewing Recipe Calculator will quickly determine the recipe gravity from different malts and extracts. It can also calculate IBUs from different hop additions, for any batch size of 5–12 gallons. It's like having a computer in your pocket.

**How To Brew and the HBRC are available at fine homebrewing shops everywhere.**



Different honeys will produce different flavor profiles much as different grapes make different grape wines.

## WHAT YOU NEED TO MAKE MEAD

If you are already homebrewing you will have most, if not all, the tools you will need to make a batch of mead. You will need a kettle to mix in (we will discuss the various ways you can make it in a moment), a spoon, a wort chiller (nice, but there are ways around this), a hydrometer (if you care, I never did until I went pro), a carboy (I prefer glass), airlock, stopper and ingredients. The ingredients list of course is based on what style you want to make but some things will be a constant. Actually, only one ingredient is a constant and that would be a yeast nutrient of some sort. Honey is very low in nutrients that yeast like to begin feeding on. What we do around the meadery is start the yeast with some Yeastex from Crosby and Baker so it is awake and hungry by the time we add it to the cooled must. In the summer time we begin to see active fermentation within an hour after pitching.

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PHOTOS COURTESY OF THE NATIONAL HONEY BOARD

## VANILLA BEAN CINNAMON STICK MOUNTAIN HONEY WINE

One of the traditions I started early in my mead making career was producing Winter Solstice mead. Every December 21 I make mead. For many years I would make a 10-gallon batch leaving half of it traditional and half with either vanilla beans or vanilla beans and cinnamon sticks. I would age it two years and then serve it at the annual Winter Solstice party from a special bottle.

I use two parts alfalfa honey to one part wildflower honey. Now as I've already said, different honeys taste differently. These particular honeys were from Colorado. Something I haven't said, of course, is that you can make it as strong or as light as you like. It just depends on what you like and how long you are willing to wait for it. Given that this is meant to be a winter mead I'd suggest using at least 3 pounds of honey per gallon of water. That should give you at least 12 percent alcohol by volume, but don't be afraid to use another pound per gallon either. Maybe two!

You will also need three to four whole vanilla beans as well as three to four cinnamon sticks. You should be able to find these ingredients in the bulk section of Wild Oats type markets or check online. Don't be freaked out by the price per pound of the vanilla beans. Though \$200 per pound, it should still only be about \$10 for a 5-gallon batch.

Yeast nutrient will be needed but as a homebrewer you can do something as simple as using some extra light malt extract. A tablespoon per 5 gallons should do. The last ingredient necessary is the yeast. Much like different honeys have different flavor profiles so too will different yeasts impart different flavors. For this particular mead I like using a blend of Montrachet and Sherry yeast. This mead is the most versatile in terms of what temperature to serve it at. It is nice at cellar temperature, slightly warmed around 110° F, or, in the summer, served over ice.

## SPECIFICS

Now it's time to make the mead. There are three basic theories on how to make mead: adding sulfites, pasteurizing and boiling. I've had good mead made all three

ways but my personal preference is the pasteurization method. Bring 4 gallons of water up to 180° F in your kettle and then add 12 pounds of honey. It helps to preheat the honey, especially if it has crystallized. I like to soak mine in hot water to get it nice and pourable.

It is important to make sure to take your kettle off of the heat and stir vigorously, so that the honey gets dissolved. Mostly you want to make sure that you do not burn any of the honey on the bottom of the kettle. Cover for 20 to 30 minutes at around 150° to 160° F. Now is a good time to start your yeast. For mead I like to use dry yeast. Take two 5-gram packets of Montrachet and one 5-gram packet of Sherry yeast. Mix with a tablespoon of extra light malt extract. Stir vigorously so as to introduce oxygen. Yeast likes oxygen to begin feeding.

After the pasteurization period, cool the must to the mid-70s and pour into the carboy. Leave some room at the top. Add the yeast and shake the hell out of the carboy. I place a towel under the carboy and shake it in such a way as to introduce oxygen to the product. Don't be surprised at this point if you find the one weak spot in the carboy and you find your fresh must all over your knees. Certainly don't blame me: I warned you. Personally I like to use a 6.5-gallon carboy to make 5 gallons of mead. This way you lose nothing to blowoff. Place the airlock on and prepare to be patient.

Primary fermentation most likely will take three to four months. Try to keep the fermentation temperature between 70° and 78° F if possible. After primary, transfer to a 5-gallon carboy that already has the vanilla beans and cinnamon sticks in it. Just toss the cinnamon sticks in whole. Cut the vanilla beans into thirds before adding. The vanilla beans in particular need the alcohol in the mead to help extract the flavor. Let it sit for three months or so. Transfer off the spices. If you have an ice cream maker use the vanilla beans to make some incredible ice cream.

At this point how many transfers you make is up to you. How clear is the mead? Has it absolutely stopped fermenting? You



need to make sure it has stopped fermenting before bottling or you will wind up with a sparkling mead. One way to accomplish this is with the addition of potassium sorbate. The other is by being patient. Most likely you will transfer a couple more times and then bottle. The biggest determinant for how long it will be is how much honey you put in. Certainly you should figure on one to two years.

**David Myers opened Redstone Meadery in Boulder, Colo. in July 2001 after several years of making mead at home. He is a member of Hop Barley and the Alers homebrew club and lives in Sunshine Canyon west of Boulder. ☺**

## SUGGESTED READING AND DRINKING

Schramm, Ken. *The Compleat Meadmaker: Home Production of Honey Wine from Your First Batch to Award-Winning Fruit and Herb Variations*. Boulder, CO: Brewers Publications, 2003.

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# The Simplicity of Cider

by dick dunn

I've finally found the ideal fermented beverage. I started with beer (various malts, decoctions, infusions, confusions and delusions), proceeded to mead (honey, water, yeast and a thousand fruits, herbs and spices) and ended up at cider (just apple juice, maybe an added yeast).

To me, this is the essence of simplicity. To my brewing friends, I've just gotten too old to deal with more than one ingredient.

Either way, cider ultimately intrigues the curious brewer. In a sense it's a wine (fermented fruit) yet its roots may grow closer to beer. Once you enter the world of cider, the possibilities open up. Sweet and still as a dessert wine? Sharp? Sparkling and elegant as champagne? Tannins and acids surprise the first-time drinker of good cider, revealing that it's not just an alcoholic apple soda.

## What Is It?

Cider (often "hard cider" in the United States) is fermented apple juice. "Perry" is fermented pear juice.

It's just that simple. As usual, the devil (or the delight) is in the details. It's often said, "the cidermaker's art is blending"—finding the best apples with interesting character and combining them to balance the components of the cider's taste.

For the worrywarts, cidermaking is legal in the United States. The same rules apply as for wine and beer: 100 gallons per year for one person, or 200 gallons per year for a household of two or more people. As for safety, if you've heard of problems with *E. coli* O157:H7, the good news is that fermentation kills the bacteria promptly. Cider is safe.

There are ciders in your liquor store. Most of them are dumbed-down, mass-market products, just as most of the beer in the cooler is uninteresting. If you're not sure, read the labels. If a "cider" needs to have sugar, carbonated water, malic acid, "natural flavors" and so on added to it, it's not likely to be interesting. It might be pleasant on a hot day, but so is any cold liquid. Instead, look for ciders that are made from fermented apple juice, period. (Most commercial ciders will use a bit of sulfite, just as most wines do.) There are dozens of small producers of quality cider in the United States, but you'll have to hunt around a bit. While the good-beer revolution started 25 years ago, cider is just revving up.

## The Juggling Act

Brewers are familiar with balancing the characteristics of a beer: alcohol, body, residual sweetness, bitterness of boiling hops, aromatics of finishing hops and esters from yeast. In a cider, the elements to be balanced are again alcohol and residual sweetness, but after that, the acidity and tannins. The acid in cider gives a refreshing "bite" and may be needed to balance sweetness. Tannins contribute astringency (drying mouth-feel) and bitterness (taste component),

vaguely like the hops in beer. They give the cider complexity and depth.

Some apples contribute aromatic character as well. As with beer, you think of bringing the different components of taste into balance and harmony.

But there the analogy ends. In beer, the ingredients make relatively separate contributions—but every apple in a cider blend contributes to all the components. As a brewer, imagine if the boiling hops increased the SG, or if the malt contributed alpha acid!

Moreover, while a homebrew shop has ingredients for beer with just the characteristics you want, by contrast you can't walk into a cider mill and ask for juice with a specific pH, SG and tannin.

You'll have to find what you can and work with what you can get. The juices change from year to year—apples from the same tree can be very different in a cool, wet year than in a warm, dry one.

Experienced cidermakers use apple varieties specifically cultivated for cider. These have appropriate levels of acid and tannin, and plenty of fermentable sugar, to blend into a successful cider. There are perhaps a

hundred cider-specific cultivars out of the thousands of extant apple varieties. Since sugar (SG) isn't an issue, they're classified by their relative acid and tannin

content into four categories: sweet, sharp, bittersweet and bittersharp. ("Sweet" means low-acid.) These are your clues to selecting apples for blending. U.S. eating/cooking apples are considered sweet or sharp in this classification. The dif-

ficult part is finding apples with some tannin. If you can press your own juice, or even fake it with a food processor, you can probably find wild trees whose apples have useful astringency to help your blend.

## The Elements of Cider Style

As you're fermenting your chosen blend of juice, you have two more variables to decide for finishing the cider. The first is carbonation. You can go from completely still—no carbonation at all, like a table wine—up to effervescence like champagne. You make this choice, just as you would with beer or mead, by retaining carbonation from fermenting or (more usually) by fermenting the cider out, then priming it at bottling/kegging time. Using a simple sugar (dextrose, say) for priming, the quantity is the same as if you were priming beer to the same level of carbonation—for example, 4 ounces (weight) of corn sugar for a medium level of carbonation in 5 U.S. gallons. Also, as with beer, be sure the main fermentation is finished before you prime and bottle!

The second variable is sweetness. Cider is different from beer in that all the sugars in apple juice are fermentable, so it's tricky to leave sweetness in the cider. (There's no matter of "attenuation," although you can choose a yeast with poor alcohol tolerance.) Dry/still cider is easy: let it ferment out, then bottle. Dry/sparkling is easy: ferment out, then prime and bottle. Sweet/still takes a bit of care: ferment out, stabilize (e.g. with potassium sorbate), sweeten and bottle. The hard combination is sweet/sparkling, because you can't expect in-bottle fermentation to stop where you want it, and you don't want to make bottle grenades. If you have a CO<sub>2</sub> setup, you can finish as if you were making a sweet/still cider, then force-carbonate or counterpressure fill it. (There are other tricks but they're beyond the scope of this article.)

## The "Recipe"

As you have probably guessed, cider recipes don't make sense. You work with what you can get in any year. Still, there are guidelines and procedures. You need juice without preservatives; look carefully! Starting

gravity should be at least 1.045, preferably 1.050 or more. If you have good juice but it's under 1.045, use sugar to bring it up. That may offend your aesthetics, but not as much as ending up with 5 gallons of cider vinegar. (Cider vinegar is wonderful, but it's not a session drink!)

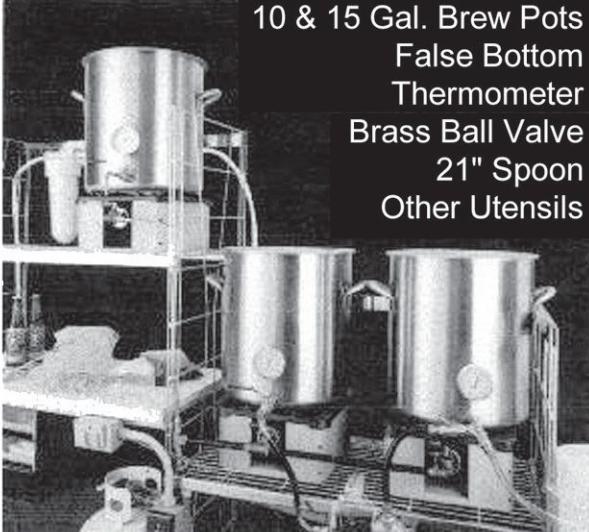
Next, be sure there's enough acid in the juice. Low-acid juices give a boring cider and invite spoilage. If you have an acid test kit, the goal is TA (titratable acidity) of perhaps 0.5 percent or more. If you have a pH meter, you want to be below 3.8 to avoid

problems. Around 3.5 is good, but once you're below 3.8 it's a matter of how sharp you like the taste. If you have neither, just taste and be sure the juice has some tartness to it. Pleasant aromatic character is a plus. Some bitterness is good, but rare in juices you purchase. Don't boil the juice! Cider isn't brewed.

For yeast, you can use the natural yeast from the apples that carries into the juice, or you can add a commercial culture. Starting out, it's much easier and more reliable to use a culture. Use a cider-specific culture or a



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neutral-character wine yeast. Sulfite the juice: add one Campden tablet (available at home-brew/wine shops) per gallon, and let the juice sit for a day before you pitch the yeast culture.

Ferment cool (under 70° F). Unlike beer, a slow fermentation is good. When the cider falls clear, rack. Keep your containers topped up if you can. The cider will need some aging in the carboy, but once it's quite clear you can bottle, priming if you wish. Ideally, cider from the fall harvest ferments through the winter and is bottled in spring. Yours will likely go faster.

Once you delve deeper, there really are some recipes. New England cider, for example, may have added brown sugar, raisins and more, for more alcohol and a different taste.

### Beginner, Intermediate, Advanced: Mapping the Territory

Where do you go from here?

At the outset, you'll get a few gallons of good, fresh juice, add a yeast culture, ferment it and bottle it. This is like brewing from extract. Lots of cidermakers make great cider this way, and are perfectly happy never going beyond this stage.

Next you'll start to hunt down cider mills or sources for juice so that you can blend your own juices to get a better balance. Suddenly you've got a lot more control over the quality of your cider.

Or you may choose to get an apple grinder/press so that you can make your own blend. If you live where apples are common, you know about bumper crops and "here-take-these" apples. If you have a press, people will hunt you down: if you turn their apples into juice, they'll happily share the juice and you can pick and choose which juice you want for your cider blend(s).

One caution: Don't be shy about turning away bad fruit! Avoid Red Delicious. At this stage, you're comparable to the whole-grain brewer with a sense for recipes.

You can go crazy—buy some land and move out of town, plant trees of exactly the varieties you want and make your ideal blend from each year's crop. This is like a homebrewer growing barley and hops, but cidermakers are actually likely to go to the comparable extreme.

Dick Dunn lives in the suburbs of Hygiene, Colo., with his wife Diane, six cats and 13 chickens. Dunn plays with hay and apples by day and writes software by night. He started brewing in 1978, added mead in 1983 and has gradually drifted over to cider since then. He has maintained the e-mail lists Cider Digest and Mead-Lover's Digest for the past 10 years. Dunn was one of the judges at the first North American Cider Competition in Seattle, Wash., last year.



"It's often said,  
'the cidermaker's  
art is blending'..."

#### Recommended Reading

Proulx, Annie and Lew Nichols. *Cider: Making, Using & Enjoying Sweet & Hard Cider*. North Adams, MA: Storey Publishing, 2003. (ISBN 1-58017-520-1)

Watson, Ben. *Cider, Hard and Sweet: History, Traditions, and Making Your Own*. Woodstock, VT: Countryman Press, 1999. (ISBN 0-88150-468-8)

#### Additional Resources

The Cider Digest: an e-mail forum for discussion of cider, in operation since 1991. International, but most subscribers are in the U.S. Most discussion is among individual (non-commercial) cidermakers. For intro and back issues, visit [www.talisman.com/cider](http://www.talisman.com/cider). To subscribe, send an e-mail including your name with subject "subscribe" to [cider-request@talisman.com](mailto:cider-request@talisman.com).

By far the best Web site for cider information belongs to Andrew Lea, a food chemist and cidermaker in the UK. Visit [www.cider.org.uk](http://www.cider.org.uk).

One regional cider festival, Franklin County Cider Day, has become the foremost gathering of U.S. cidermakers. Visit [www.ciderday.org](http://www.ciderday.org).



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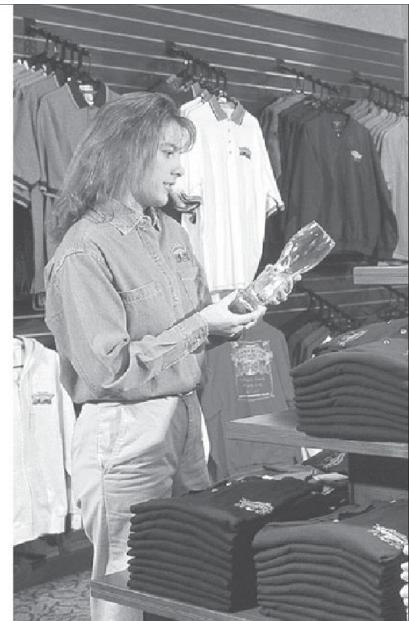
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# The Trouble with

**S**ake is constructed not by weights and measures, but by volumes of rice and water. That's nice when one lives in Japan or Belgium, because there a liter has the same volume as a kilogram. In this country, however, a pound has little, if any, relationship to a gallon. And we don't do too well with liters and kilograms either.

In my 32-year pursuit of the perfect sake recipe, I have made countless revisions. In fact, I've made it increasingly difficult. Did I say "recipe"? It's more of a procedure to manage a complex ferment over an 80-day period to produce a wonderful beer that everyone on the planet thinks is a wine.

There are really only three ingredients in sake: water, rice and *koji* rice. Of these, the most important is *koji* rice. Most *toji* (sake brewmasters) will tell you *koji* has a profound effect on the final product, especially since it is 20 to 25 percent of the total rice volume in sake (see Table 1). *Koji* is the most complex and problematic part of the process, thus we recommend that you use a commercial product. Cold Mountain *Koji*, although not the best, is the most available, found in ethnic Japanese grocery stores across the country. Oregon SakeOne brewer's *koji* and highly polished rice are the best available.

## Equipment

You will need normal winemaking equipment: two open-topped food grade plastic fermenters (3-gallon to start the ferment and 6-gallon at the end) with an opaque plastic sheet to cover; four closed secondary storage vessels such as 1-gallon or 4-liter wine jugs; 7 feet (2.1 meters) of 3/8-inch (9.5 millimeter) plastic siphon hose; and several fermentation locks. You will also need a steaming vessel of at least 2-gallon capacity (about 30 cm/13.8"). Good steamers are found in most Asian (Chinese, Korean, Japanese, Vietnamese, Thai or Cambodian) grocery stores. A specific gravity hydrometer and hydrometer jar are also necessary, and an acid titration kit is useful. Most of this equipment is found at any beer or winemaking supply store (check the Yellow Pages under Beer or Winemaking Supplies).

## The Nature of the Sake Ferment

You can't just put a large amount of steamed rice into a container, add water, *koji*, rice and yeast, and expect sake. What you'll have is *doburoku*, "farm" sake. In Asia this is a fairly popular way to produce booze. They just eat it like ordinary cooked rice, while singing off-color songs of great sexual exploits. The alcohol content (like that of

by Fred Eckhardt



# Sake...



wheat or barley beer) is around 6 percent alcohol by volume.

That's what early sake was like. Sometime in the early Heian period (866 to 1160 C.E.) sake brewers developed a system of doubling, which allowed the production of a much more sophisticated beverage. Documentation shows that this system was well developed and in use by 1599 C.E.

In time, brewers learned to be careful about the quality of water for sake production. They called it *miyamizu* (heavenly water), fairly soft with no iron. Moreover, by 1599, the process of pasteurization was in place. They had found that finished sake was subject to severe bacterial souring, rendering it undrinkable within two to four weeks at the most.

By heating the sake (to about 130 to 140° F or 54 to 60° C) they were able to reinvigorate the beverage. Of course, the cooling sake was exposed to the same bacteria that had remained in the original vessel, so they had to repeat the process every few weeks or so. This may have been the origin of "warm sake."

### The Doubling of the Ferment

The brewing system they came up with is a marvel of scientific excellence. They started with a mixture of steamed rice, koji and water. When that got going—as a yeast mash—they doubled the mix to start the main mash, doubled it again and then completed a final doubling. The ratios then were pretty much what they are now: one volume of rice, of which about 20 to 25 percent is made into koji, and water at 1.25 volumes of total rice and koji-rice (see Table 2).

Over the course of a thousand years or so brewers found that polishing the rice greatly improved the quality of sake. This is especially true of modern *ginjo* and *dai-ginjo* sake, where the rice may be polished until only about 35 percent of the original grain structure remains. Thus it is imperative to use large kernel, so-called short-grain rice, which permits extensive polishing. Such extreme polishing is not possible with the long grain (basmati) rice type used in south Asia.

### Get Ready to Ferment

The rice must be washed extensively. This allows it to absorb water, which con-

tinues during a rather long steeping process. Something like 30 percent of the grain's weight is added by absorption. This promotes the penetration of heat during the long steaming process, facilitating later conversion to fermentable sugars by the action of koji. Steaming also alters the protein structure of the grains.

Steaming the rice is preferable to "cooking" the stuff, mostly because cooked rice grains stick together and cause problems in the doubling system (Table 2). Sake brewing can be described as a multiple parallel ferment. The rice starches are converted to fermentable sugar by the action of the mold *Aspergillus oryzae* and the simultaneous yeast ferment that produces alcohol.

The initial segment is called the *shubo* (yeast mash), which takes about a week. The rice mash must become attractive to the various molds and bacteria, and the koji mold must do its job to create fermentable sugars. If the sugar arrives too fast, the yeast will be overwhelmed, hence the limited ingredient increments. The final result is a much desired high alcohol content.

Care must be taken with each rice addition.

1. The night before, wash the rice thoroughly in running cold water for about an hour to start water absorption (25 to 30 percent by weight).
2. Cover the rice with 2 to 3 inches (50 to 75 mm) of very cold water, and let stand in a cool area to soak for about 11 hours (all night) before using.
3. The next morning, drain for an hour. Place the rice in the steamer, which must have plenty of water in the bottom to allow for the one-hour steam.
4. The koji for each addition, except that for the very first step (the shubo or yeast mash) is always added to the mash about 12 hours before the rice addition. Add the koji portion directly to the fermenter the night before at the same time that you set the rice for that addition to soak. At the same time also add half of the water for the next addition as well. It is wise to refrigerate the other half of that water overnight; this will help cool the freshly steamed rice when it is ready to add to the mash (the next day after 12 hours).

## Ingredients for Better Sake Recipe

Table 1

(Recipe for 2 gallons—may be halved, doubled or tripled)

- |  |
|--|
| 10.0 lb (4.54 kg) polished rice (to 70-90 percent)                 |
| 2.5 lb (1.13 kg) Koji  |
| 2.0 gal (7.6 l) water  |
| 1 tsp (3.8 ml) lactic acid 88%                                     |
| or   |
| 0.8 tsp (4.1 g) winemakers citric acid or acid blend               |
| 0.6 tsp (4 g) winemakers yeast nutrient                            |
| 1 Pinch (0.7 g) Epsom salts (magnesium sulfate-MgSO <sub>4</sub> ) |
| Wyeast sake yeast K9 strain (type #3134) tube                      |
| Sparkolloid finings packet   |
| 1.25 tsp (0.7 g) Morton Salt Substitute (only)                     |
| [optional]   |

### Let's Krew

Sake yeast has high resistance to unfavorable and violently changing conditions. There is only one on the market (Wyeast 3134) that needs to be refrigerated until it is used. Warm it to 80° F (27° C) about 24 hours ahead of time.

The yeast mash (*shubo*) takes a week. We'll use about 10 percent (4 ounces) of the total koji, 8 percent (12 ounces) of the steamed rice total and 8 percent (2.5 cups) of the water. To that add some winemaker's yeast nutrient (3/5 teaspoon), a teaspoon of lactic acid and a pinch of Epsom salts. Table 2 shows the doubling breakdown by stages.

The night before starting the yeast mash, prepare a small vessel to hold this ferment (a 3-quart pot will do just fine—always sanitize your equipment before using). Add half of the 2.5 cups of treated water described earlier. Get the yeast ready as per directions on the tube. If you have stored the koji in the freezer, move it to the refrigerator. Prepare the 12 ounces of rice by washing it thoroughly and then soaking it all night.

The next morning, add the contents of the active yeast tube to the treated water, let stand one hour and add the koji. Meanwhile, drain the previous night's rice and then steam it for an hour. Be sure to cool the freshly steamed rice with the cold/ice water left in the refrigerator all night. Do this before adding it

# Addition of Materials

Table 2

	Yeast Mash Day 1	First Addition Day 8	Second Addition Day 10	Final Addition Day 11	Totals
<b>Steamed Rice</b>	12 ounces 1.5 cups 340 g	20 ounces 2.5 cups 570 g	48 ounces 6 cups 1,360 g	80 ounces 10 cups 2,270 g	160 ounces 20 cups 4,540 g
<b>Koji</b>	4 ounces .75 cups 115 g	7.25 ounces 1.5 cups 205 g	11.25 ounces 2.25 cups 320 g	17.5 ounces ~3.5 cups 500 g	40 ounces 8 cups 1,135 g
<b>Water</b>	20 ounces 2.5 cups 590 cc/ml	22 ounces 2.75 cups 650 cc/ml	70 ounces 8.75 cups 2070 cc/ml	128 ounces 16 cups 3790 cc/ml	240 ounces 30 cups 7100 cc/ml

8 oz cup weights: sake ratios are all volumetric: 1 cup rice = 7.5 oz, 1 cup koji = 5 oz

Percent values of total. Water volume is 125 percent of rice volume. Additional water is needed, after the ferment, to reduce the alcohol level to a reasonable 16.5 percent alcohol by volume for normal consumption.

to the yeast-koji-water mix. Be careful not to damage the yeast with rice that is too hot. Mix gently, but well, by folding the rice-koji-water mix for about five minutes. A sanitized stainless steel stirring spoon would be appropriate. Stir the mash again that evening. Keep the temperature at 70° F (21° C) and stir twice a day for the next several days. By day six start lowering the temperature to 59° F (15° C). The seventh night, wash and set the 20 ounces of rice for the first addition the next day. Steep it for 11 hours. The next morning drain it for an hour, and then steam it for an hour.

We are now ready to start the first stage (*hatsuzoe*) of the main ferment, *moromi*. Over the course of two days the main ferment really gets moving. It picks up speed the second day in what the Japanese call *odori* or “dancing” ferment. Take care here, because the volume expands tremendously; the bubbles and froth take on heroic proportions.

Move to a larger vessel for the last two doublings to accommodate the fast growing volume. Each of these last two doublings—the second (*nakazoe*) and third (*tomezoe*) addition—are done on separate days. At that point the mash is set, needing time only to ferment and develop. Follow Table 2 for exact quantities of each addition.

When the *moromi* mash buildup is complete (four days), lower the temperature to 45° F (7° C) if possible, and stir at 12-hour

intervals for the next few days until the ferment recedes. Stir daily for the next week or so. On about the 27th day a final adjustment is necessary by adding water to reduce the alcohol content to a drinkable 16 to 17 percent. It takes about 40 ounces of water. The main ferment is just about done, and sometime in the next week you should rack (transfer) the rather thick, gunky mash off the lees into about three 4-liter wine jugs. Deposit the dregs (sake kasu) into another container and press them through a 1/16-inch nylon mesh bag (from your local wine-making supplier). Don’t discard these pressed dregs; they are great for cooking.

The separated liquor should be apportioned among the three jugs, resulting in about 9 liters total. Do not top-up these jugs, just attach fermentation locks and let them stand at about 45° F. After another week, the ferment should be finished (no more bubbles in the fermentation locks), and you should “top up” these secondary fermenters by concentrating the sake into fewer (full) containers. Cap them, but seal loosely to allow CO<sub>2</sub> escape. Leave very little head space—oxygen and light are your enemies. Keep the jugs refrigerated until you pasteurize the sake.

## Finishing the Job

By the 50th day, you will see the clear sake has separated from the fluffy white sed-

iment in the bottom quarter of the bottle. It is time to evaluate your sake for final packaging. Measure the specific gravity (by hydrometer) and find the acidity using an acid titration kit.

Next, use your favorite sake as a model to copy. Measure its specific gravity, and compare it with yours. Yours will probably be drier (i.e. a lower specific gravity, perhaps as low as 0.990 or (continued on page 45)

## Ingredient Sources

Brewmaster, San Leandro, Calif. 800-288-8922,

[www.brewmaster.com](http://www.brewmaster.com). Freeze dried koji from New Zealand.

Home Beer/Wine/Cheesemaking Shop, Woodland Hills, Calif. 818-884-8586, [www.homebeer-winecheese.com](http://www.homebeer-winecheese.com). Sake supplies.

G.E.M. Cultures, Fort Bragg, Calif. 707-964-2922. Tane-koji culture.

Spagnol's Wine and Beer, Delta, B.C., Canada.

604-524-1327, [www.spagnols.com](http://www.spagnols.com). Good koji and rice.

F.H. Steinbart Co., Portland, Ore. 800-638-2997, [www.steinbart.com](http://www.steinbart.com). Polished brewers rice and brewers koji (from SakeOne, Forest Grove Ore.)

Vision Brewing, Nedlands, W.A., Australia.

[www.kagi.com](http://www.kagi.com). Koji, tane-koji and recipes.



# In Pursuit of Pulque

by Jim Parker



To the Aztecs and Mayans, it was a gift from the gods, reserved for the ruling class and nursing mothers. For the common man in modern Mexico, it is credited with having restorative, aphrodisiacal properties. But until the late 1990s, pulque was mostly unknown north of the border.

Fermented from the sap of the agave plant, pulque has long lived in the shadow of its younger cousins, tequila and mezcal. But its production dates back to pre-Columbian times.

Although it could possibly be the oldest fermented beverage in North America, pulque's origin is shrouded in myths and legends. The Aztecs have no fewer than seven deities associated with pulque. Its production is said to predate the birth of Christ. Stone carvings dating to 200 CE show the gathering of the agave sap or aguamiel (honey water).

Although pulque is relatively low in alcohol, 4 to 8 percent by volume, its intoxicating powers are the stuff of legends.

### Origins of Pulque

One legend says it was the goddess Mayahuel—who was said to have 400 breasts all dripping pulque—who entered the heart of the agave or maguey plant and that her blood mixed with the aguamiel to produce pulque.

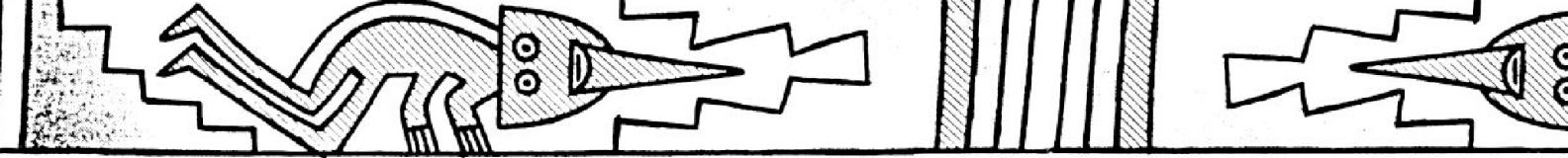
Pulque was considered magical because it seemed to spring forth, already intoxicating, from the maguey plant. In fact, the sap does ferment spontaneously with airborne yeast and a bacterium that is found on the plant's leaves, *Zymomonas mobilis*. This is a very fast acting and efficient bacteria that is used today in the production of ethanol for alternative fuels.

Early rulers tried to control the consumption of pulque by decreeing only the elderly, sick, nursing mothers and the ruling class could drink it. The penalties for commoners caught drunk on pulque included beatings and having their heads shaved. A second offense was punishable by death.

After the Spanish conquest, the Spaniards tried to send this new drink back to their homeland, but the rapid and relentless *zymomonas* fermentation caused the pulque to sour quickly. Some believe it was the Spaniards' attempts to make the pulque more stable that led them to distill the pulque and then later create mescal and tequila.

### Pulque Production

Attempts to package pulque were unsuccessful until 1994 when the small family-owned business of Rodolfo del Razo found a way to pasteurize and can pulque, making it shelf stable for up to 12 months.



Boulder Imports of Longmont, Colo. has been importing Nectar del Razo for the past four years. It comes plain, as well as flavored with fruit. They are poised to relaunch the brand as Azteca Pulque.

Pulque production today begins much as it did in early days with the gathering of the aguamiel. The maguey plant, a pulpy succulent (not a cactus) reaches maturity in 10 to 12 years. At that point, it grows a long stalk—up to 20 feet—on which the flower blooms. All of the plant's stored energy and sugar is concentrated on pushing the stalk up several inches a day.

A worker slices off the stalk and creates a cavity in the heart, or piña, of the plant. This is where the aguamiel seeps and is collected, much like a maple tree is tapped and drained. A good maguey plant will yield 1.3 to 1.6 gallons of aguamiel a day for four to six months before it dies.

The collected juice is taken back to the pulque production facility, or tinacal. By this time, the airborne yeast and *Zymomonas*

*mobilis* may have already started fermenting. The sap is put into 50-gallon fermenters called tiñas and a portion of actively fermenting pulque, or "seed pulque," is added. Some tinales add a culture containing ale yeast, several *lactobacillus* strains, *Zymomonas mobilis* and a *leuconostoc* strain. Fermentation is rapid, from 12 to 24 hours.

Because of its short shelf life, most pulque is served near where it is made in roadside pulquerías, open-air shacks that are often men-only establishments. With the exception of del Razo's Bebidas Naturales San Ysidro, no company has found a way to package shelf-stable pulque.

The product is currently off the shelves while Boulder Imports works on rebranding. At the recent AHA National Homebrewers Conference, Matt Stinchfield and Michael Ferguson had a surprise for attendees of their talk on exotic German and Belgian beers. Stinchfield, who studies native drinks of the Americas, had gathered some of the last of the Nectar del Razo in the Las Vegas area for attendees

to try. With the warning that drinking pulque has been known to make people strip their clothes off, Stinchfield passed out samples. While all of the 100 or so in the audience kept their clothes on, it was agreed that the pulque gave an immediate warming feeling unlike that from any other alcoholic beverage.

### Making Your Own

The maguey grows only in the central highlands of Mexico, so even the most patient American homebrewer would have a tough time growing their own source of aguamiel to make their own pulque. Luckily for the enterprising brewer, there is a way to make an approximation of this ancient and hallowed beverage.

Agave nectar for homebrewers and meadmakers has been available sporadically over the past 10 years. A couple of suppliers of bulk agave nectar have surfaced, including Madhava Honey of Lyons, Colo. and Agave for Homebrewers of San Francisco.

To make a 5-gallon batch of 8 percent alcohol pulque, you will need about 7 pounds of agave nectar or about two-thirds of a gallon. Agave nectar has a Brix value of 76 to 77 compared to 80 to 81 for honey.

The breakdown of agave nectar's sugars is 70 percent fructose, 27 percent glucose, 2 percent maltose and 1 percent maltodextrose, making it very fermentable.

To make an authentic pulque, you would need a *Zymomonas mobilis* culture and some *lactobacilis*. The latter is no problem, but a culture of the former would run about \$150 from a lab—slightly cheaper than airfare to Mexico, but not as much fun.

A cheaper alternative is to use a wine yeast and a good yeast nutrient. It will lack some of the wilder characteristics of authentic pulque, but the tradeoff is longer shelf life.

After several customers complained about having trouble fermenting agave when making meads, the good folks at Wyeast did a test of all of their wine yeasts and found their Steinberg strain (3237) did the best job of fermenting agave. White Labs has a similar strain of its own (WLP727).

Yet another tactic, suggested on the Agave for Homebrewers Web site ([www.agave-homebrew.com](http://www.agave-homebrew.com)), is to use one of the Turbo

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**ZYMURGY** SEPTEMBER/OCTOBER 2004

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yeasts developed for distillers. These yeast and nutrient blends are designed to induce a rapid fermentation.

The procedure is simple. Heat 5 gallons of water to 180° F (82° C) and stir in your nectar. Cover and hold the temperature between 150° F and 160° F (65° C to 71° C) for 20 to 30 minutes. This will pasteurize your pulque "must." Your starting gravity should be around 1.065.

If using a wine yeast, chill your must down to 70° F (21° C) and pitch your yeast and nutrient.

Turbo yeast can be pitched at temperatures up to 90° F (32° C). The Steinberg strain with 1 teaspoon of Wyeast yeast nutrient takes about seven days to reach 0.999. Turbo yeast should ferment out in three days.

Wild pulque has a milky white color and is slightly viscous like coconut milk. The flavor is slightly tart and fruity. It will not keep for much more than a week before an unpleasant sourness sets in.

The more domesticated version, made with wine yeast, will clarify if racked into a secondary fermenter and allowed to settle for a week. The color is a pale yellow. The tame version accentuates the fruity character of the agave and makes a very pleasant drink.

Pulque can be mixed with pureed fruit to mimic the del Razo brands. I am told in Mexico such adulteration is frowned upon, but a pulque-strawberry blend makes a great refresher.

My next experiment will be to prime some fermented pulque with a touch of nectar and some yeast to make a sparkling pulque. I'll report back on the results—as soon as I find my pants.

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

**Sake** (from page 41) Sake Meter Value (SMV) +15, while that of your favorite sake may be somewhere around 0.998 or SMV +3). Yours will most likely be more acidic, too. There's not a lot you can do about that, except to use calcium carbonate (chalk) from your winemaking supplier.

Improve drinkability by sweetening it a bit. Calculate the desired specific gravity and then determine how much sugar it will take to sweeten your sake close to that level. Winemakers use a formula of 4 ounces of household sugar (sucrose) to raise the specific gravity by 12 for a U.S. gallon. That is 0.33 ounce for 1 gal-

lon to raise one specific gravity point; or 2.44 grams/liter. For example if you have 9 liters, you would need  $2.44 \times 9 \times 8$  specific gravity points for our theoretical sake. That's 176 grams, or about 6 ounces (3/4 cup). Draw off 3/4 cup of your sake and add 6 ounces of sugar to make a sake-sugar syrup. Heat the sake to dissolve the sugar, and then divide the syrup among your fermenters.

You might want to fine your sake before bottling by the use of winemaker's Sparkoloid. This will make the sediment clump tightly, making it easier to bottle as clear sake. Don't bother to filter this small amount as you will only lose a lot of sake in the process.

### Pasteurization

Sake is subject to some vicious souring infections, and unless you plan to

refrigerate your *nama* or draft sake continuously, it is best to pasteurize before bottling. Set a pot on the stove and place one of your gallon bottles in it. Raise the temperature to 140° F (60° C), and then simply decant the already cleared sake into beer bottles. You don't really need to siphon the stuff.

You will have an easier time with all of this if you mark a calendar day-by-day as to what must be done, and then follow that schedule.

**Fred Eckhardt serves on the AHA Board of Advisers as an emeritus member. He lives in Portland, Ore., and has been brewing sake since 1972. He thinks the Japanese are right: Sake is the beverage of gods. He can be reached via e-mail at FredEckhardt@aob.org for a more detailed recipe and additional suggestions, including a ready-to-use calendar.**

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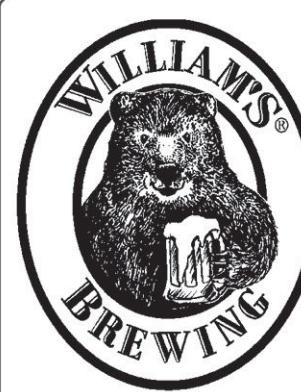
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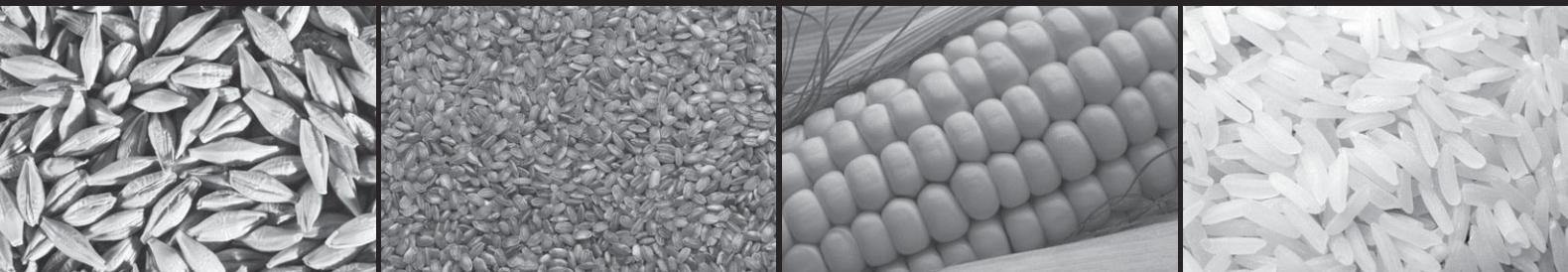


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# AN ARRAY OF *alternative* GRAINS

By Jim Parker



**B**arley may be the most common grain used in beer brewing, but it is not, by any means, the only choice. Whether for reasons of taste, health or availability, brewers around the world use a myriad of grains in beers.

Many grains are used as adjuncts to contribute flavor, head retention and body—or a lack thereof—in barley-based beers. The most common of these adjunct grains are rice and corn used by major American brewers to lighten their pale lagers.

Wheat, both malted and unmalted, is the most common adjunct used by home and craftbrewers. Unmalted wheat adds body and head retention and malted wheat contributes a crisp flavor as well as mouthfeel.

Oats are often added to barley beers to aid in head retention and to add body.

Rye has gained favor as a flavoring adjunct, contributing a spicy, almost peppery character.

But beyond these common adjuncts, there is a wide range of more exotic grains available for brewing.

Many of these grains are prized for their gluten-free qualities. More than 1.5 million Americans over the age of 21 suffer from celiac disease. This autoimmune disorder is characterized by intolerance to gluten, a protein found in barley, wheat, spelt, rye and triticale.

The search for gluten-free beer has led many celiacs to take up homebrewing and has even spawned a new brewing company, Bards Tale Beer Company.

Bards was scheduled to launch its first product, Bards Tale Dragon's Gold, in late July to early August. The beer is made with a combination of malted sorghum, honey, buckwheat, rice and corn, as well as hops, water and yeast.

Another gluten-free commercial beer is brewed in Belgium by the Steenberge Brewery for the Mongozo Brewing Company. Mongozo Quinua is made from quinoa, a grain the Incas called the "mother grain."

In his book *Radical Brewing*<sup>1</sup>, author Randy Mosher devotes a whole chapter to alternative grains. Many of these grains are available only unmalted and would require either home malting or an adjunct mash.

The following is a snapshot of some of the alternative grains and their characteristics from Mosher's book and from Sean Sweeney's gluten-free brewing Web site.<sup>2</sup>

Amaranth is a gluten-free grain with a strong, nutty herb taste that was sacred to the Aztecs, Mayans and Incas. It is not available in a malted form. The now defunct Bulldog Brewery of Fresno, Calif. won a gold

not gluten-free. The Egyptians used kamut in beers, and it is an ingredient in the Italian beer Le Baladin Nora, which also includes ginger, myrrh and orange peel.

Millet is the catchall name for a variety of small-grained cereals. In Africa, a popular beer called Pombe is made from millet, as well as a number of other native beers.

Quinoa is another gluten-free grain that lends itself to malting and brewing. The flavor is crisp and grainy. In addition to Mongozo, quinoa is also used as an adjunct in South American chicha or corn beer.

Sorghum encompasses a number of species of feed grain that likely originated in Africa, where it is still used in a number of beers. African sorghum beers are noted for their sour taste.

Spelt is another member of the wheat family, sometimes referred to as "poor man's wheat." It has been used in brewing for hundreds of years and is featured in Joseph Spelt Beer, a witbier from Brasserie de Silenrieux in Wallonia.

Triticale is a cross between durum wheat and rye. It has the spiciness of rye and the head-enhancing qualities of wheat. In his book, Mosher recommends using triticale in a Belgian tripel.

Wild rice is not actually rice, but a native grass that grows in the upper Midwest of the United States. Prized in culinary circles, it adds a nutty quality and is the signature ingredient in several wild rice

beers made by craft brewers in Minnesota.

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

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2. Sweeney, Sean. "The Nexus—Gluten-free Brewing and Amateur Hop Growing," <http://www.fortunecity.com/boozers/brewerytap/555/index.html>.

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## Commercial Calibration

### Category/subcategory: 24B Traditional Semi-Sweet Mead

Mountain Meadows Sierra Nectar Wildflower Mead

Produced by Mountain Meadows Meadery, Westwood, Calif., [www.mountainmeadowsmead.com](http://www.mountainmeadowsmead.com)

**Editor's Note:** 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 score-sheets at [www.bjcp.org](http://www.bjcp.org), pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration. This issue, in honor of our "Beyond Barley" theme, we judge a mead and a cider. All meads and ciders for this commercial calibration were shipped from Liquid Solutions, Tigard, Ore. [www.liquidsolutions.ws](http://www.liquidsolutions.ws)



Dave Houseman



Beth Zangari



Scott Bickham



Gordon Strong

**Dave Houseman** is competition director for the BJCP, a member of the BJCP Style Guide Committee and a Grand Master II judge. Brewing since 1991, Dave is a member of the AHA Board of Advisors. He lives in Chester Springs, Pa.

#### Aroma:

Fruity with notes of green apple and moderately hot alcohol. Slight acidic notes with noticeable yeasty and sulfur aroma that combine to yield a complex, almost Brett-like character. No floral aroma. Very little honey aroma. (7/10)

#### Appearance:

Light gold. Still. Bright to brilliant but some suspended matter. No legs in the glass. (4/5)

#### Flavor:

Green apple, cider notes, as if a cyser. Sulfur, yeasty flavor, high, out of place and overpowering for this light mead. Moderate to high acidic balance. Drying finish with somewhat astringent mouthfeel. Sweetness is on low end of semi-sweet. Just a hint of honey character embedded in the sweetness of the aftertaste. Alcohol rides above the beverage leaving a warming sensation without the hotness of higher alcohols. (10/20)

#### Drinkability:

A very pleasant, medium-bodied mead with a cider-like, white wine-like character. This mead doesn't exhibit honey character as much as would be expected and the sulfur/yeast character is over the top. The complexity and dry finish make this a very nice mead to have with food, particularly something like a sweet and spicy Thai curry. Controlling the yeasty, sulfury character would make this a much better mead. (9/15)

**Total Score: (30/50)**

**Beth Zangari** has been brewing and judging since 1992. She was instrumental in founding the Hangtown Association of Zymurgy Enthusiasts (HAZE). A Master level judge, she lives in Placerville, Calif. with her husband Craig and many cats.

#### Aroma:

Honey, then solvent notes. Wildflower variety is not specified; I detect star thistle, ragweed, lupine and a yellow daisy-like flower that grows on the side of the road that has a dusty, spicy fragrance (I don't know the name). Dry grass in summer after a brief shower. (7/10)

#### Appearance:

Pale straw, almost still. Brilliant clarity. (5/5)

#### Flavor:

Very clean honey flavor with subtle Sierra wildflower character—not the foothills, but the High Sierras near Monitor Pass. A little sage flower creeps in. Honey flavor dissipates to a clean finish. Alcoholic warmth. Subtle lingering dry finish. Could actually afford a little more sweetness for my taste. No, I take that back as the beverage warms. Could use more intensity. (15/20)

#### Drinkability:

Semi-sweet brings to my mind chocolate chips used for baking. In that light, a hint more sweetness could accentuate the delicate wildflower character of this beverage. The wildflower is subtle. The label shows a high Sierra meadow, where flowers of extreme delicacy grow. A lingering sweetness gives way to a dry, almost astringent finish. Alcohol is evident. Would be an after dinner drink or nightcap rather than a session beverage. (10/15)

**Total score: (37/50)**

**Scott Bickham** lives in Corning, N.Y. and has been brewing and judging since 1991. He is a Grand Master II judge, and has been either exam director or associate exam director of the BJCP since 1995.

#### Aroma:

Alcohols are a little hot—phenolic alcohols and related esters lend spicy notes with clove and pepper. There are some indistinguishable honey notes in the background, along with apple and pear esters, but they are not in balance with alcohol. (6/10)

#### Appearance:

Absolutely brilliant clarity. Light straw color is appropriate, as is absence of carbonation. (5/5)

#### Flavor:

Starts with moderate honey sweetness. Alcohols are apparent, but the yeast character is cleaner here than in the aroma. The acidity balances the sweetness quite nicely, but the tannins are a little too assertive, lending astringency and creating a very dry finish. While this sample probably has the residual sugars of a medium sweet mead, the tannins push it to the dry regime. Alcoholic warmth is also evident. (12/20)

#### Drinkability:

Quite interesting but is struggling to find an identity. The acidity and honey in the flavor balance each other, but a cleaner fermentation profile and less dry finish would help emphasize this feature. This sample has the key flavor components, but they compete rather than balance. Aging may help round out the flavor. (9/15)

**Total Score: (32/50)**

**Gordon Strong** has been brewing since 1996 and has been part of the BJCP since 1997. He is chairman of the Style Guide Committee and principal author of most new style descriptions. He lives in Beavercreek, Ohio.

#### Aroma:

Mild floral aroma with some honey sweetness. Generally subtle. Light alcohol, sulfur and tartness. Slightly off with some hot, green aromas. Suggests a dry mead. (7/10)

#### Appearance:

Still. Very clear but not brilliantly clear. Pale gold color. No legs, suggesting a modest strength. (5/5)

#### Flavor:

Semi-sweet with a high acidity, as in a Chenin Blanc wine. Moderate astringency. Tartness overwhelms sweetness. Still. Some apple- and melon-like fruitiness. Medium-full body. Floral honey character is noticeable but subtle. Some warmth in the finish. Light sulfur. (12/20)

#### Drinkability:

High acidity and apple-like flavor suggest a honeyed Chenin Blanc or a cyser rather than a semi-sweet varietal mead. Initially sweet, but more dry and tart in the finish. I'd try it with veal or chicken piccata, or Camembert cheese. (8/15)

**Total Score: (32/50)**

## Commercial Calibration



**Category/subcategory:** 27B English Cider

White Oak Cider

Produced by White Oak Cider, Newberg, Ore.

[www.crockettdesign.com/whiteoakcider](http://www.crockettdesign.com/whiteoakcider)



Dave Houseman

Dave Houseman is competition director for the BJCP, a member of the BJCP Style Guide Committee and a Grand Master II judge. Brewing since 1991, Dave is a member of the AHA Board of Advisers. He lives in Chester Springs, Pa.

#### Aroma:

Barnyard, Brett-like aroma from noticeable lactic fermentation. The "farmyard" aroma dominates but some oak tannins from aging on oak are evident. There is a very light fruitiness but no noticeable apple character; OK for style. (7/10)

#### Appearance:

Gold color with slight haze that's OK for style. Petillant with just a hint of carbonation. A very good-looking cider. (6/6)

#### Flavor:

Rustic farmyard character dominates with oaky tannins playing a substantial supporting role. Dry finish with some astringent mouthfeel. Balance of tannins and lactic acid seem to be right on target. Little in the way of apple flavor or fruitiness as the style dictates. The farmyard character is very dominant in this cider. (17/24)

#### Drinkability:

A very drinkable cider with complexity from the lactic fermentation and oak aging but the farmyard character could be better balanced with a bit more apple character or a tamer lactic fermentation. Otherwise right on style. This cider would go well with some spicy Indian takeout. (8/10)

**Total Score: (38/50)**



Beth Zangari

Beth Zangari has been brewing and judging since 1992. She was instrumental in founding the Hangtown Association of Zymurgy Enthusiasts (HAZE). A Master level judge, she lives in Placerville, Calif. with her husband Craig and many cats.

#### Aroma:

Definite horse blanket, followed by vague apple nuances, like a sliced Pink Lady (antique variety), almost rose-like. (7/10)

#### Appearance:

Golden, very clear if not brilliant. Carbonation is soft, though evident. (6/6)

#### Flavor:

Lactic horsetiness gives way to mushroom earthiness. Reminds me of the orchards in Apple Hill on a late October afternoon. A faint licorice note comes into play near the end. Finishes dry, with slight astringency, surprising for a firm bodied drink. Mouth-feel is similar to a hearty local Cabernet, lingering for some time. (17/24)

#### Drinkability:

The horsey nose is on the heavy side, but does not dominate the flavor. Dry firm finish is satisfying and quenching. Complex and intriguing. Invites another drink or two. (8/10)

**Total Score: (38/50)**



Scott Bickham

Scott Bickham lives in Corning, N.Y. and has been brewing and judging since 1991. He is a Grand Master II judge, and has been either exam director or associate exam director of the BJCP since 1995.

#### Aroma:

Leather up front with a slight smokiness. I also pick up cloves and a hint of allspice, along with a little sulfite. Alcohol and acidity are also evident. Apple character is evident but buried deeper than in many examples. Farmyard character is evident through horseblanket notes. (8/10)

#### Appearance:

Brilliant clarity. Polished brass color with slight effervescence, but far from petillant. (6/6)

#### Flavor:

Starts with a fleeting taste of dessert apple, but dissipates into a blend of lactic acid and tannins. Leathery and oaky notes add complexity. The acidity could be evidence of a malo-lactic fermentation, and while it also is a key attribute in an English cider, the level is a little high in this sample. Low level of alcohol is apparent. (19/24)

#### Drinkability:

Quite tasty — similar to some of the better commercial examples. A little less acidity would better emphasize the farmyard character, but that is more of a personal preference. The tannins and dryness of the finish are on the mark for an English cider. (8/10)

**Total Score: (41/50)**



Gordon Strong

Gordon Strong has been brewing since 1996 and has been part of the BJCP since 1997. He is chairman of the Style Guide Committee and principal author of most new style descriptions. He lives in Beavercreek, Ohio.

#### Aroma:

Moderate intensity rustic, farmhouse nose. Light apple character with some slightly funky tartness. Light sulfur. (8/10)

#### Appearance:

Poured with a sparkling carbonation, producing a white bubbly head that settled quickly (like soda pop). Quite clear. Lovely deep gold color. (6/6)

#### Flavor:

Quite dry with a fair amount of tannin. Low apple flavor accentuated by a moderate sparkle. Full-bodied, rather astringent but without an oaky flavor (assume the astringency is from apple varieties). Subtle alcohol strength shows in the finish but isn't hot. Just a hint of tartness. Nothing off. (20/24)

#### Drinkability:

Subtle, rustic apple character. Dry, sparkling and full-bodied. Astringency might be surprising to some but serves a similar purpose as bitterness in beer. A good example of the style, which is quite different from many mass-market ciders. I'd like to try this with a salad of bitter greens, goat cheese and caramelized walnuts, or perhaps grilled pork. (8/15)

**Total Score: (42/50)**

# Roast Your Own Coffee

**Editor's Note:** Man (and woman) cannot live by beer alone. And homebrewers rarely contain themselves to one type of home-crafted food or beverage. With that in mind, we are launching this new column to introduce readers to the wide range of food and drink that can be made at home. If you have a home-crafted specialty you would like to share, send an inquiry to [jim@aob.org](mailto:jim@aob.org).

No matter how many cups of coffee you've had, one of the finest yet will be the first brewed with beans you have roasted yourself.

Sure, your homeroasted beans may lack the finesse of those from a master roaster with years of experience, but the sheer knowledge that you have taken a handful of hard green pebbles and turned them into the steaming cup o' Joe in your hand will make up for any shortcomings.

The idea of homeroasting coffee beans is nothing new. Up through the mid-1880s nearly all coffee was roasted in the home. But much like what happened to beer, industrialization and consolidation combined to turn coffee into a monochromatic shadow of its former self. Thankfully, as with beer, a legion of micro- and home-roasters has brought the idea of fresh, fla-

This is—excuse me—a damn fine cup of coffee. I've had I don't know how many cups of coffee in my life, but this is one of the best.

—Agent Cooper, *Twin Peaks*

vorful coffee back to the fore.

Freshness is crucial to coffee flavor—even more so than with beer. Roasted coffee beans reach their peak of flavor 24 hours after roasting. After that, the drop-off in flavor and aroma is rapid. After just one week, even the dullest palate can notice the change in quality. Once ground, even vacuum-packed coffee loses its zest in a matter of hours, not days. Unless you are buying your beans fresh from a local roaster, there's no way to tell how old your coffee is.

Homeroasting can cut your coffee budget in half. Unroasted—or green—coffee beans sell for between \$3 and \$5 a pound for most common varieties, as opposed to the \$6 to \$10 a pound or more for coffee from a local roaster.

So why aren't more people roasting their own? The answer is, they are. Home coffee roasting is one of the fastest growing hobbies in the country. It is particularly popu-

lar among homebrewers, who are accustomed to making their own beverages. Witness the number of homebrewing retailers—from established Williams Brewing in San Leandro, Calif. to relative newcomers like Beer, Beer and More Beer—who have added beans to their barley offerings.

And, as with homebrewing, your equipment can be as simple and frugal or elaborate and expensive as you wish.

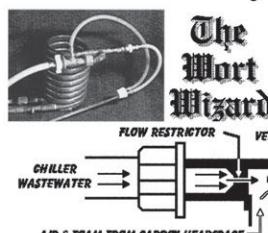
At the simplest extreme, you can actually roast coffee beans on top of your stove in a cast iron skillet or wok. At the other end are a growing number of home roasting machines that can run from \$70 to more than \$500, and roast from one pot's worth to a half pound. In between are adaptations of other household items from heat guns to hot air popcorn poppers.

No matter what method you use, the concept behind coffee roasting is not unlike that behind brewing beer: you take an agricultural product and, by applying heat, alter its properties to bring forth a tasty beverage. By altering time and temperature, individual roasters can take the same raw beans and produce a wide variety of flavors and characteristics. Wider varieties are possible by roasting beans from different origins and blending them.

Unroasted coffee beans are actually the inner seed of the fruit of the coffee tree. The fruit, or cherry, is first picked and then processed to remove the outer skin, pulp and parchment skin. What remains is the hard, pale green seed or bean, which still

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has a bit of thin, papery silverskin attached.

As the bean is heated, it undergoes a number of physical and chemical changes. Experienced roasters learn to trust their senses—sight, hearing and smell—to tell the various stages of roast.

First the beans will begin to change color, from pale green to a light golden brown. At this stage, they will emit a grassy or burlap-like aroma as the moisture inside the bean begins to boil. As the temperature rises, the beans will give off a grassy-smelling steam as some of the moisture content is driven off. Flakes of the silverskin—called chaff—will begin to free themselves from the bean.

As the steam changes to smoke (coffee roasting is a fairly smoky proposition, so always roast in a well-ventilated area) the beans will darken to a light brown or cinnamon shade. Soon after, you will hear the audible “first crack” that signals the beginning of pyrolysis—the inner transformation of the bean. First crack is actually a series of pops coming from the breakdown of the cellulose cell walls as the moisture is driven off.

Depending on the method and equipment, each batch will take between four to 10 minutes to reach first crack. After first crack, the beans can be considered roasted. How much longer you roast depends on how roasted you want your beans.

The smoke will intensify as the sugars in the bean are caramelized and the oils begin to move toward the outside of the bean. Soon a second crack, slightly quieter and more rapid than first crack, is heard as the beans darken and the oils begin to appear.

You will want to remove your beans from the heat before they reach the desired shade, because they will continue to roast as they cool. It is important to cool your beans to room temperature quickly. Usually, tossing them between two metal colanders or spreading the beans on a screen over a fan works well.

The roasted beans will continue to emit CO<sub>2</sub> for up to 24 hours, so put them in a loosely sealed jar to allow CO<sub>2</sub> to escape. After 24 hours, the beans are at their peak of flavor and should be stored in an airtight container in a cool area.

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

## Resources

To learn more about homeroasting and the various methods and equipment, check out the online retailer Sweet Maria's, [www.sweetmarias.com](http://www.sweetmarias.com). Sweet Maria's also offers an e-mail listserve. Details are available on the Web site.

The best book available on the subject is Kenneth Davids' *Home Coffee Roasting: Romance and Revival*. New York: St. Martins Press, 1996. (ISBN 0-312-14111-4)

The newsgroup alt.coffee offers online advice and tips.

Green coffee beans and roasting equipment are available from a wide range of online retailers, including:

[www.sweetmarias.com](http://www.sweetmarias.com)  
[www.coffeeproject.com](http://www.coffeeproject.com)  
[www.coffeebeancoral.com](http://www.coffeebeancoral.com)  
[www.coffeeismydrugofchoice.com](http://www.coffeeismydrugofchoice.com)

Several homebrew supply retailers offer green coffee beans and equipment, including:

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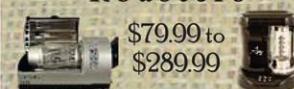
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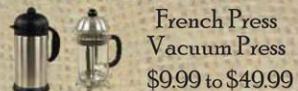


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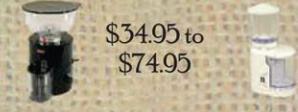
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# 2004 AHA National Homebrew Competition Winners

## Homebrewer of the Year



### Rod Romanak • Kailua-Kona, Hawaii, Kona Coast Barley Boys

"Rocket" Rod Romanak has been to more AHA National Homebrew Conferences than just about anyone—next year will be his 20th in a row. But he has had no greater thrill than stepping up to the stage on June 19 to receive the Homebrewer of the Year Award in Las Vegas.

"I was totally overwhelmed," he says. Romanak has been brewing since 1981 when he and wife Cheryl saw an ad in *Parade* magazine for a homebrewing kit. "We had no idea what we were doing and no one to talk to. The next year we opened our homebrew shop, Rocket Suds, and have been doing it ever since."

He joined the AHA shortly thereafter. "My AHA number is 1096, a good barley wine gravity," he says.

And each year since 1986, Romanak has penciled in a trip from his home in Kailua-Kona, Hawaii to the AHA National Homebrew Conference. His first conference was at Estes Park, Colo., and he recalls walking up the steps of the Stanley Hotel with his friend John Abbott and seeing Charlie Papazian and Fred Eckhardt sitting on the steps. "John said, 'Wow, those are the dudes from the magazine! This is pretty neat!'" The next morning when they jumped the locked fence to get to the pool, they found Eckhardt already swimming.

Romanak brews once a month—"religiously"—and has previously won medals at the nationals for his Scotch ale, Munich lager and Belgian ale. He won his Homebrewer of the Year Award for a robust porter, his favorite style.

And he already has plans to bring the beer back—along with a few others—to defend his title in Baltimore in 2005.

Homebrewer of the  
Year award sponsored  
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## Meadmaker of the Year



### Joe Formanek • Bolingbrook, Ill., Urban Knaves of Grain

Hannah Formanek is a bit too young to appreciate her dad Joe's accomplishment as 2004 Meadmaker of the Year. But in about 20 years, she will get to taste the mead she helped inspire to win him the honor.

Formanek, who has been brewing since 1988 and making mead since 1993, used a special macadamia honey he received as a present on the occasion of Hannah's birth to make the mead judged best among all those entered in the 2004 AHA National Homebrew Competition.

"The one stipulation was that there had to be at least one bottle left for her to try on her 21st birthday," he said.

Formanek, the Ninkasi winner in 2000, has kept his "the simpler, the better" approach to brewing. He still brews on the stovetop with his ceramic kettle after running his wort through his Zapap lauter tun. His one "advancement" is a counter-flow chiller he constructed 15 years ago. His methods have served him well as he was named Midwest Homebrewer of the Year in 1999, 2001, 2002 and 2003.

He keeps the same approach with mead—a simple steep and skim at 160° F before chilling and pitching the yeast and letting the character of the honey shine through.

The one big change in Formanek's brewing regimen since he won the Ninkasi Award in 2000 is that he now has a pair of young "brewing partners"—Hannah and older sister Veronica—to name his creations after.

And at the rate he is going, his cellar may get crowded with bottles put away for future birthdays.

Meadmaker of the Year  
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## Cidermaker of the Year



### Bruce Franconi • Red Hook, N.Y., Hudson Valley Homebrewers

Bruce Franconi credits his Cidermaker of the Year award to getting his hands on some special apples, years of experience analyzing juice and, finally, winning an argument with his wife, Gloria, on the subtle balance between sweet and tart flavors in the finished product.

"She wanted it to be sweeter; I wanted it more tart. This time I won the argument and won the first," he says with a laugh.

Not that winning an argument about cider with Gloria Franconi is an easy task. She won Cidermaker of the Year in 1998 and now runs the cider judging for the AHA National Homebrew Competition.

The couple has been homebrewing together for 18 years and has owned Party Creations, a homebrew shop in Red Hook, N.Y. since 1988. They took up cidermaking about eight years ago.

The secret to their success is to first choose the right apples. Bruce says his best-of-show benefited from the availability of Roxbury Russets, a fairly rare apple.

"You want something where when you ferment out the sugar, you have some acidity left and some of that apple aroma. You want that spice," he says. "You just don't get that with your ordinary apples. I have tried every variety possible, even mixing in crab apples to try and get some flavor."

Then the final trick is balancing the acidity and the sweetness to get a cider that is unique.

"I've been able to taste all of the ciders that make it to the finals and they are all excellent ciders," he says. "So you have to look for something that is unique, that is going to leave a lasting impression."

And, of course, stand your ground on balance.

Ninkasi Award sponsored by



competition for three. In his previous two attempts, he won one gold and one silver medal in the Scottish ale category. Both years he entered more than 50 beers.

This year, the California brewer entered fewer than 40 beers in the first round, still managed to send 13 beers to the second round and claimed five medals in the beer categories—including the gold and silver for Scottish ales.

He also won a gold medal in the Lambic and Belgian Sour Ale category and silvers in European Dark Lager and Smoke-flavored Beer.

For good measure, he added a bronze in the cider category.

Zainasheff has tried to brew his way through every category in the BJCP style guide, but is most fond of brewing Scottish ales, Schwarzbier, Flanders sour ales and British bitters.

He does most of his brewing during football season.

"I kind of make Sunday a little mini-vacation day. Sometimes I invite people over and watch football, maybe barbecue and then brew," he says. As a member of Quality Ale and Fermentation Fraternity (QUAFF), he has been part of the club's unprecedented four-year stranglehold on the AHA Homebrew Club of the Year Award. And this year, he helped organize the club's first "Prison Brew" competition at the National Homebrew Conference. The contest was for beers made only from ingredients that could be found in a prison or military kitchen.

That was one contest he didn't win.

Homebrew Club of the Year  
award sponsored by



## Homebrew Club of the Year

**Quality Ale & Fermentation  
Fraternity (QUAFF)  
San Diego, Calif.**



The members of QUAFF lived up to the promises they made after the 2003 National Homebrew Competition. They not only brought more members to the 2004 NHC in Las Vegas, they claimed more medals and walked away with their fourth consecutive Homebrew Club of the Year Award. Plus QUAFF member Jamil Zainasheff pocketed the Ninkasi Award.

Seven different members of QUAFF won 15 medals in 14 categories. During the awards ceremony, it seemed there was always a QUAFF member walking to or from the stage from the club's enclave at the back of the room. Each QUAFF medal was greeted with a roar from the large contingent that had driven from San Diego.

In addition to Zainasheff's six medals in five categories, QUAFF was also led by Harold Gulbransen, who won a silver in Wheat Beer and a silver in Herb and Spice Braggot. Jeff Silver lived up to his name with a silver medal in Light Ales. Douglas Duffield claimed silver in American Pale Ale. The bronze in India Pale Ale went to George Cataulin. Dave Levonian picked up the bronze in Brown Ales. Chuck West claimed bronze in English and Scottish Strong Beers. Jim Roberts won silver in Fruit Mead. Jon Peterson won silver in Bock.

That parade of winners outdid QUAFF's 2003 showing of seven medallists.

And QUAFF shows no signs of letting up when the conference moves across the country to Baltimore in 2005. As they left the hall after the awards ceremony, they vowed to return for a fifth straight title. We'll see what some of the East Coast clubs have to say about that.

# Another Great National Homebrew Competition

**A**s this year's Special Issue Winner's Circle unlocks the secrets to the gold medal recipes from the National Homebrew Competition, we again catch up with NHC organizer Gary Glass for a summary of this year's competition highlights.

**Zymurgy:** What were some of the challenges you faced coordinating this massive 2004 event?

**Gary Glass:** Running a competition with more than 4,400 entries judged at 10 regional sites from San Diego to Rochester, N.Y. and Houston to Regina, Saskatchewan in Canada, requires serious concentration to details. It can be overwhelming at times. Thankfully we have an outstanding group of local volunteers who work their butts off to make sure the entrants get the best evaluations of their beers possible.

**Zymurgy:** What was the biggest surprise when the awards were announced?

**GG:** Calling "Rocket" Rod Romanak up on stage to accept the AHA Homebrewer of the Year Award was probably the most exciting moment in my five years as director of the National Homebrew Competition. Rod has been a fixture of the AHA National Homebrewers Conference for the past 19 years, flying all the way from Hawaii to attend each year.

**Zymurgy:** Any celebrity judges this year?

**GG:** Not really, but probably the best set of judges yet. I believe we had a BJCP National or higher ranked judge sitting on every single judge panel. As the Beer Judge Certification Program continues to do an excellent job of adding knowledgeable judges to their ranks, the quality of the judging continues to improve. We've also implemented measures



**NHC organizer Gary Glass raises his glass to another great year.**

to help ensure the entrants get the feedback they are looking for, such as splitting the California and Northwest regional sites between two judging locations each to make recruiting high caliber judges easier.

**Zymurgy:** What made the 2004 NHC really stand out from past competitions you've organized?

**GG:** With a total of 4,443 entries, 2004 saw a jump of more than 1,000 entries over last year's National Homebrew Competition, breaking the previous NHC record set in 1997 and setting the all-time record for the most entries judged in a beer competition. I think that just reflects upon the direction homebrewing is going in North America. The tradition of homebrewing in the U.S. is alive and strong.

We did a much better job of soliciting prizes for this year's competition, receiving more than 270 prizes from nearly 30 donors. The prize display at the awards ceremony stretched over 50 feet! We had awesome prize packages for all of the big awards.

Given how tough the competition is, the winners deserve nothing less.

**Zymurgy:** How do you rate the quality of entries in this year's NHC compared to previous years?

**GG:** Every year the entries just keep getting better. The second round judges all seemed very impressed with the quality of the beers and meads they were evaluating.

**Zymurgy:** Any surprises in this year's run for the coveted Homebrew Club of the Year award?

**GG:** For the fourth year straight, Quality Ale and Fermentation Fraternity (QUAFF) of San Diego took the Homebrew Club of the Year Award. Let's face it, QUAFF members brew great beer, and lots of it—and apparently enter just about all of it in the NHC. It's going to take a serious effort for any other club to best the QUAFF brewers.

If anybody is up to the task, it's the Great Northern Brewers of Anchorage, Alaska, this year's first runner-up for the Club of the Year Award. These guys really know how to brew and are some of the best meadmakers in the country. Another club to look out for is the Ale and Lager Enthusiasts (ALES) of Regina, Saskatchewan, which came in sixth overall in the Club of the Year standings, despite the fact that none of their entries made it to the second round after being rejected by U.S. Customs (an issue we will deal with before next year's competition). Had their entries competed in the second round, I'm sure they would have been a serious contender this year.

**Zymurgy:** Thanks Gary, and congratulations for another momentous effort!

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

## Category 1: American Lager



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Homebrew Depot

**Tom Wolf, Valencia, CA, Maltose Falcons**

**"Dougweiser", American Standard Lager**

Ingredients for 22 U.S. gal (83.25 L)

- 28.0 lb (12.7 kg) Great Western two-row pale malt
- 0.75 lb (340 g) Briess dextrin malt
- 10.0 lb (4.54 kg) rice
- 0.25 oz (7 g) Galena pellet hops, 12.9% alpha acid (60 min)
- 0.25 oz (7 g) Perle plug hops, 6.0% alpha acid (60 min)
- 0.5 oz (14 g) Crystal pellet hops, 3.3% alpha acid (60 min)
- 0.5 oz (14 g) Mittelfruh pellet hops, 2.1% alpha acid (60 min)
- 1.0 oz (28 g) Saaz plug hops, 3.1% alpha acid (15 min)
- Wyeast Czech Pilsner lager yeast
- Forced CO<sub>2</sub> to carbonate
- Original specific gravity: 1.048
- Final specific gravity: 1.010
- Boiling time: 90 minutes
- Primary fermentation: 14 days at 52° F (11° C) in steel
- Secondary fermentation: 14 days at 48° F (9° C) in steel
- Tertiary fermentation: 120 days at 35° F (2° C) in steel

### Brewer's Specifics

Mash in grains (except 3.5 lb two-row) at 148° F (64° C) for 90 minutes. Grind rice, add to 2.5 gallons boiling water and mix. Add 3.5 lb (1.59 kg) two-row to rice and hold at 152° F (67° C) for 30 minutes. Add cereal to main mash.

### Judges' Comments

"Very nice malt/noble hop balance. Bit too much hop flavor. Light body—could use more CO<sub>2</sub>. Very nice representation of style."

"This is an excellent example of the style. I find no real flaws. Even the age is not

showing in this beer although it probably will not get much better...great beer!"

### Runners-Up

*Silver Medal:* Steve Fletty, Falcon Heights, MN, Classic American Pilsner, Saint Paul Homebrewers Club

*Bronze Medal:* Paul Long, Newburg, OR, Light/Standard/Premium, Strange Brew Homebrew Club

"Dead on style, very pleasant. Except for DMS in aroma, FAULTLESS. Very good recipe/brewing. Has fared well in aging and shipping."

### Runners-Up

*Silver Medal:* John Watson, Southbury, CT, Muenchner Helles, Underground Brewers Club of Connecticut

*Bronze Medal:* Phil Farrell, Cumming, GA, Dortmunder Export, Chicken City Ale Raisers

## Category 2: European Pale Lager



### Gold Medal

AHA 2004 National Homebrew Competition

**Greg Wondga, Edmonton, Alberta, Edmonton Homebrewers Guild**

**"Edmontoner", North German Pilsner**

Ingredients for 5 U.S. gal (19 L)

- 8.0 lb (3.63 kg) Weyermann Pilsner malt
- 11.0 oz (300 g) Briess dextrin malt
- 1.34 oz (38 g) Sterling pellet hops, 6.7% alpha acid (first wort)
- 4.22 qt (4 L) Wyeast Storopramen lager yeast
- 2.11 oz (60 g) corn sugar to prime
- Original specific gravity: 1.042
- Final specific gravity: 1.013
- Boiling time: 90 minutes
- Primary fermentation: 25 days at 50° F (10° C) in glass
- Secondary fermentation: 23 days at 40° F (4° C) in glass

### Brewer's Specifics

Use a decoction step mash schedule with 30 minute rests at 126° F (52°C), 139° F (59°C) and 156 (69°C). Mash out at 175° F (79°C) for 5 minutes.

### Judges' Comments

"Crisp, clean and refreshing are the watchwords of the style, and you've achieved them well. The malt is apparent and low, allowing the hops to balance while creating the sensation of bitterness. Well done!"

## Category 3: Light Ale



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Northwestern Extract

**Rob Beck, Kansas City, MO, Kansas City Bier Meisters**

**"Sweetheart Blonde", Blonde Ale**

Ingredients for 5 U.S. gal (19 L)

- 6.5 lb (2.95 kg) Cargill Special Pale two-row malt
- 3.0 lb (1.36 kg) Klages/Great Western pale malt
- 0.75 lb (340 g) Weyermann caramel foam malt
- 0.5 lb (227 g) MidAm white wheat malt
- 0.5 lb (227 g) Weissheimer Vienna malt
- 0.125 oz (3.5 g) Mittelfruh whole hops, 4.1% alpha acid (55 min)
- 0.75 oz (21 g) US Tettnang whole hops, 6.5% alpha acid (55 min)
- 0.5 oz (14 g) Mittelfruh whole hops, 4.1% alpha acid (10 min)
- 0.25 oz (7 g) Simcoe whole hops, 15.3% alpha acid (dry)
- 0.25 oz (7 g) Mittelfruh whole hops, 4.1% alpha acid (dry)
- Wyeast No. 1056 American ale yeast
- Forced CO<sub>2</sub> to carbonate
- Isinglass and Polyclar to clarify

- Original specific gravity: 1.054
- Final specific gravity: 1.012
- Boiling time: 65 minutes

- Primary fermentation: 12 days at 68° F (20° C) in glass
- Secondary fermentation: 3.5 days at 67° F (19° C) in glass
- Tertiary fermentation: 15 days at 30° F (-1° C) in glass

#### Brewer's Specifics

Mash grains at 132° F (56° C) for 10 minutes. Raise to 153° F (67° C) and hold for 40 minutes. Raise to 157° F (69° C) for 43 minutes. Mash out at 168° F (76° C) for 27 minutes.

#### Judges' Comments

"Not a bad example, but the malt/hop is balanced and should lean toward malt."

"Very well made. The malt/hop balance is very good. The citrus hop helps balance malt."

#### Runners-Up

*Silver Medal:* Tom Hood, Stow, OH, Blond Ale, Society of Akron Area Zymurgists (SAAZ)  
*Bronze Medal:* Jeff Silver, San Diego, CA, American Wheat, QUAFF

### Category 4: Bitter & English Pale Ale



#### Gold Medal

AHA 2004 National Homebrew Competition  
 Sponsored by St Louis Wine & Beer Making

**Kevin Speelman, Glen Ellyn, IL, Urban Knaves of Grain**

**[Untitled], Ordinary Bitter**

#### Ingredients for 5 U.S. gal (19 L)

- |                                     |  |
|-------------------------------------|--|
| 5.0                                 | lb (2.27 kg) Golden Promise two-row pale malt                  |
| 3.0                                 | lb (1.36 kg) British pale malt                                 |
| 1.0                                 | oz (28 g) Fuggle pellet hops, 4% alpha acid (60 min)           |
| 1.5                                 | oz (43 g) E.K. Goldings whole hops, 4.3% alpha acid (45 min)   |
| 1.0                                 | oz (28 g) Styrian Goldings pellet hops, 4% alpha acid (20 min) |
| 0.5                                 | oz (14 g) E.K. Goldings whole hops, 4.3% alpha acid (dry)      |
| White Labs WLP005 British ale yeast |  |

- ale yeast  
 2 PrimeTabs

- Original specific gravity: 1.040
- Final specific gravity: Unknown
- Boiling time: 60 minutes
- Primary fermentation: 7 days at 70° F (21° C) in glass
- Secondary fermentation: 10 days at 68° F (20° C) in glass

#### Brewer's Specifics

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

#### Judges' Comments

"A very enjoyable beer to drink—good job! Citrus aroma is very strong, but falls quickly. Good balance, with hops stronger."

"Excellent example of style without significant flaws."

"A very clean, well-made beer. Too clean and lager-like for an ale. Warmer fermentation temperatures and use additional hops for flavor and aroma. Cut grain bill with some sugar to reduce body. Very drinkable however."

#### Runners-Up

*Silver Medal:* Joe Aistrup and Little Apple Brew Crew, Manhattan, KS, Special or Best Bitter, Little Apple Brew Crew

*Bronze Medal:* Lenny Lancki, North Olmsted, OH, Strong Bitter/English Pale Ale, Society of Akron Area Zymurgists (SAAZ)

### Category 5: Scottish Ales



#### Gold Medal

AHA 2004 National Homebrew Competition  
 AHA 2004 NHC Ninkasi Award Winner

**Jamil Zainasheff, Elk Grove, CA, QUAFF**

**[Untitled], Export 80/-**

#### Ingredients for 6 U.S. gal (22.7 L)

- |      |                                    |
|------|------------------------------------|
| 9.0  | lb (4.08 kg) British pale malt     |
| 0.5  | lb (227 g) German Munich malt      |
| 0.5  | lb (227 g) Canadian honey malt     |
| 1.0  | lb (0.45 kg) US 40° L crystal malt |
| 0.38 | lb (172 g) US 120° L crystal malt  |

- 0.19 lb (86 g) British chocolate malt  
 0.9 oz (26 g) E. Kent Golding pellet hops, 5.7% alpha acid (60 min)  
 White Labs WLP 001 California ale yeast  
 Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.050
- Final specific gravity: [Unknown]
- Boiling time: 90 minutes
- Primary fermentation: [Unknown]
- Secondary fermentation: [Unknown]

#### Brewer's Specifics

Mash grains at 158° F (70° C) for 60 minutes. Mash out at 168° F (76° F) for 15 minutes.

#### Judges' Comments

"Increasing hop bitterness a touch would really complete this beer. A little more smoke would also help..."

"Good hop balance. Malty finish and aftertaste. Very nice example of the style."

#### Runners-Up

*Silver Medal:* Jamil Zainasheff, Elk Grove, CA, Light /60 Schilling, QUAFF  
*Bronze Medal:* Carter Camp, Mercer Island, WA, Export /80 Schilling

### Category 6: American Pale Ales



#### Gold Medal

AHA 2004 National Homebrew Competition  
 Sponsored by BJ's Restaurant & Brewery

**Joe Formanek, Bolingbrook, IL, Urban Knaves of Grain**

**"Drunk Monk Amber Ale", American Amber**

#### Ingredients for 5 U.S. gal (19 L)

- |      |                                     |
|------|-------------------------------------|
| 8.0  | lb (3.63 kg) Crisp Maris Otter malt |
| 0.75 | lb (340 g) DMC caramel Munich malt  |
| 0.75 | lb (340 g) DMC caramel Vienna malt  |
| 0.5  | lb (227 g) DMC dextrin malt         |
| 0.5  | lb (227 g) SMC special pale malt    |
| 0.5  | lb (227 g) MCW wheat malt           |

0.5 lb (227 g) DMC biscuit malt  
 0.5 lb (227 g) DMC aromatic malt  
 1.0 oz (28 g) DMC Special B malt  
 0.5 oz (14 g) Centennial whole hops,  
     10.1% alpha acid (60 min)  
 0.5 oz (14 g) Centennial whole hops,  
     10.1% alpha acid (10 min)  
 1.0 oz (28 g) Willamette whole hops,  
     4.5% alpha acid (10 min)  
 1.0 oz (28 g) homegrown whole hops,  
     (10 min)  
 1.0 oz (28 g) Centennial whole hops,  
     10.1% alpha acid (dry)  
 1.0 oz (28 g) Willamette whole hops,  
     4.5% alpha acid (dry)  
     WLP 002 English ale yeast,  
     1 L starter  
 0.33 cup corn sugar, to prime (78 mL)  
     Irish moss to clarify

- Original specific gravity: 1.060
- Final specific gravity: 1.017
- Boiling time: 75 min.
- Primary fermentation: 4 days at 68° F (20° C) in glass
- Secondary fermentation: 10 days at 68° F (20° C) in glass

#### Brewer's Specifics

Mash grains at 155° (68° C) and hold for 60 minutes. Raise to 170° F (77° C) and hold 10 minutes.

#### Judges' Comments

"Nice hop to malt balance, but pushing to the malty side. Malt character lingers. Enjoyable beer."

"Very tasty session amber with very good balance. Very nice middle malt tones and modest hop flavor. Very good effort."

#### Runners-Up

*Silver Medal:* Douglas Duffield, San Diego, CA, American Pale Ale, QUAFF

*Bronze Medal:* Jeff Oberlin, Friendswood, TX, American Amber Ale, Bay Area Mashtronauts

#### Category 7: India Pale Ale



##### Gold Medal

AHA 2004 National Homebrew Competition  
 Sponsored by Anderson Valley Brewing Co.

**Phil Kitowski, Novi, MI**

##### "Inaugural IPA", India Pale Ale

###### Ingredients for 10 U.S. gal (38 L)

14.0	lb (6.35 kg) Maris Otter pale malt
4.0	lb (1.81 kg) Mild malt
1.5	lb (0.68 kg) 40° crystal malt
1.0	lb (0.45 kg) 20° crystal malt
1.5	lb (0.68 kg) Munich malt
1.0	lb (0.45 kg) wheat malt
1.0	lb (0.45 kg) pale malt
1.75	oz (49 g) Centennial pellet hops, 9.1% alpha acid (60 min)
1.0	oz (28 g) Centennial pellet hops, 9.1% alpha acid (35 min)
1.0	oz (28 g) Cascade pellet hops, 6.3% alpha acid (30 min)
0.5	oz (14 g) Centennial pellet hops, 9.1% alpha acid (25 min)
1.0	oz (28 g) Cascade pellet hops, 6.3% alpha acid (25 min)
0.5	oz (14 g) Centennial pellet hops, 9.1% alpha acid (20 min)
0.5	oz (14 g) Cascade pellet hops, 6.3% alpha acid (20 min)
0.5	oz (14 g) Centennial pellet hops, 9.1% alpha acid (15 min)
0.5	oz (14 g) Cascade pellet hops, 6.3% alpha acid (15 min)
0.5	oz (14 g) Centennial pellet hops, 9.1% alpha acid (10 min)
0.5	oz (14 g) Cascade pellet hops, 6.3% alpha acid (10 min)
0.5	oz (14 g) Centennial pellet hops, 9.1% alpha acid (7 min)
0.5	oz (14 g) Cascade pellet hops, 6.3% alpha acid (7 min)
1.0	oz (28 g) Centennial pellet hops, 9.1% alpha acid (5 min)
1.0	oz (28 g) Cascade pellet hops, 6.3% alpha acid (5 min)
0.5	oz (14 g) Centennial pellet hops, 9.1% alpha acid (2 min)
0.5	oz (14 g) Cascade pellet hops, 6.3% alpha acid (2 min)

0.5 oz (14 g) Centennial pellet hops,  
     9.1% alpha acid (0 min)  
 0.5 oz (14 g) Cascade pellet hops,  
     6.3% alpha acid (0 min)  
 4.0 oz (113 g) Cascade pellet hops,  
     6.3% alpha acid (dry, 8 days)  
 3.0 oz (85 g) Cascade pellet hops,  
     6.3% alpha acid (dry, 14 days)  
     White Labs WLP001 California ale yeast  
     Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.065
- Final specific gravity: 1.018
- Boiling time: 75 minutes
- Primary fermentation: 6 days at 62° F (17° C) in plastic
- Secondary fermentation: 14 days at 62° F (17° C) in glass
- Tertiary fermentation: 21 days at 62° F (17° C) in glass

#### Brewer's Specifics

Mash grains at 155° F (68° C) for 80 minutes.

#### Judges' Comments

"Assertive bitterness. Some resinous character. Some caramel character helps balance things out. Nice hop flavor. Very nice IPA."

"A very nice IPA—nice assertive hop bitterness. Could use more maltiness to back up hops."

"A very pleasing hop-forward beer with malt to balance—approaches but does not go over the edge."

#### Runners-Up

*Silver Medal:* Mike Kidulich, Rochester, NY, Upstate NY Homebrewers Assoc

*Bronze Medal:* George Cataulin, San Diego, CA, QUAFF

## Category 8: Kolsch & Altbier



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by  
Meussdoerffer c/o  
Cargill Malt

**Dan Schultz, West Linn, OR,  
Oregon Brew Crew**

**"Kolsch de Toro", Kolsch-Style Ale**

#### Ingredients for 12 U.S. gal (45.4 L)

- 18.6 lb (8.4 kg) Pils-Budvar undermodified malt
  - 1.8 lb (0.82 kg) wheat malt
  - 1.8 oz (51 g) Santiam whole home-grown hops, ~6% alpha acid (60 min)
  - 0.85 oz (24 g) Santiam whole home-grown hops, ~6% alpha acid (20 min)
  - 0.5 gal (1.9 L) Wyeast No. 2565 Kolsch yeast
  - 5 Primetabs to prime
  - Irish moss to clarify
- Original specific gravity: 1.053
  - Final specific gravity: 1.016
  - Boiling time: 90 minutes
  - Primary fermentation: 14 days at 60° F (16° C) in plastic
  - Secondary fermentation: 40 days at 35° F (2° C) in steel

#### Brewer's Specifics

Dough-in grains at 100° F (38° C) for 15 minutes. Raise to 125° F (52° C) and hold for 15 minutes. Raise to 143° F (62° C) and hold for 11 minutes. Raise to 157° F (69° C) and hold for 30 minutes. Mash out at 170° F (77° C) for 5 minutes.

#### Judges' Comments

"A delicate beer with a clear, golden color, slight hop nose and excellent flavor balance between hops and malt."

"Excellent job technically, but misses the style guidelines slightly. Aroma and flavor hops are too high—aroma approaches pilsner levels. Need to ferment out more, reduce sweetness and body."

### Runners-Up

*Silver Medal:* Michael Haines, Hillsboro, OR, Northern German Altbier

*Bronze Medal:* John Watson, Southbury, CT, Kolsch-Style Ale, Underground Brewers Club of Connecticut

### Runners-Up

*Silver Medal:* Chris Colby, Bastrop, TX, Vienna Lager, Austin Zealots

*Bronze Medal:* Tom Hood, Stow, OH, Oktoberfest/Marzen, Society of Akron Area Zymurgists (SAAZ)

## Category 9: German Amber Lager



### Gold Medal

AHA 2004 National Homebrew Competition

**Jack Kephart, Akron, OH,  
Society of Akron Area Zymurgists (SAAZ)**  
**"Vienna Eh? III", Vienna Lager**

#### Ingredients for 6 U.S. gal (22.7 L)

- 5.5 lb (2.49 kg) German Vienna malt
  - 4.0 lb (1.81 kg) German Munich malt
  - 0.5 lb (227 g) Canadian honey malt
  - 0.38 lb (172 g) German light crystal malt
  - 0.13 lb (59 g) German Carafa malt
  - 1.0 oz (28 g) Mittelfruh whole hops, 5.2% alpha acid (60 min)
  - 0.5 oz (14 g) Mittelfruh whole hops, 5.2% alpha acid (30 min)
  - Wyeast 2206 Bavarian lager yeast
- Original specific gravity: 1.051
  - Final specific gravity: Unknown
  - Boiling time: 60 minutes
  - Primary fermentation: Unknown
  - Secondary fermentation: Unknown

#### Brewer's Specifics

Acid rest at 95° F (35°C) for 10 minutes. Raise to 134° F (57°C) and hold for 10 minutes. Raise to 155° F (68° C) and hold 90 minutes. Mash out at 168° F (76° C) for 15 minutes.

#### Judges' Comments

"Rich maltiness, great balance. Soft and elegant. Perhaps big for a Vienna—more of an Oktoberfest—but very well done."

"Very nice beer with few faults. Bittering level may be high for style. Pleasing light malt flavor predominates. Slightly dry finish."

## Category 10: Brown Ale



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Alternative Beverage

**Mike McDole, Clayton, CA,  
Diablo Order of Zymiracle Enthusiasts**  
**"Janet's Brown Ale", American Brown Ale**

#### Ingredients for 12 U.S. gal (45.4 L)

- 28.0 lb (12.7 kg) pale malt
  - 3.0 lb (1.36 kg) dextrin malt
  - 2.5 lb (1.13 kg) 40° L crystal malt
  - 2.0 lb (0.90 kg) wheat malt
  - 0.5 lb (227 g) chocolate malt
  - 3.0 oz (85 g) N. Brewer whole hops, 5.1% alpha acid (mash)
  - 3.0 oz (85 g) N. Brewer whole hops, 5.1% alpha acid (60 min)
  - 2.0 oz (57 g) N. Brewer whole hops, 5.1% alpha acid (15 min)
  - 3.0 oz (85 g) Cascade whole hops, 5.6% alpha acid (10 min)
  - 3.0 oz (85 g) Cascade whole hops, 5.6% alpha acid (0 min., hop back)
  - 4.0 oz (113 g) Centennial pellet hops, 10.5% alpha acid (dry)
  - 2.0 gal (7.56 L) White Labs WLP001 California ale yeast
- Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.060
- Final specific gravity: 1.017
- Boiling time: 90 min.
- Primary fermentation: 9 days at 70° F (21° C) in steel
- Secondary fermentation: 10 days at 68° F (20°C) in steel
- Tertiary fermentation: 14 days at 32° F (0°C) in steel

#### Brewer's Specifics

Mash grain at 152° F (67° C) for 90 min-

utes. Raise to 165° F (74° C) and hold for 15 minutes. Mash out at 170° F (77° C) for 15 minutes.

#### Judges' Comments

"Well-balanced flavor: hoppy and malty. Perfect for style; slightly spicy. Well done. Very nice beer and perfect for style."

"Tasty! Hops are dominant in aroma. Very American tastes. Well made and balanced."

"Great hop flavor and bitterness. Aroma is pleasant, however...should be fuller body."

#### Runners-Up

*Silver Medal:* Virgil Wasko, Largo, FL, Mild, Dunedin Brewers Guild

*Bronze Medal:* Dave Levonian, San Diego, CA, Mild, QUAFF

### Category 11: English and Scottish Strong Ale



#### Gold Medal

AHA 2004 National Homebrew Competition  
Sponsored by Austin Homebrew

**Mel Thompson, Gaithersburg, MD,  
Brewers United For Real Potables**

#### "Big Mo", Old Ale

##### Ingredients for 5 U.S. gal (19 L)

10.0 lb (4.54 kg) Maris Otter pale malt  
2.0 lb (0.9 kg) Munich malt  
0.5 lb (227 g) biscuit malt  
0.5 lb (227 g) 60° L crystal malt  
14.0 oz (397 g) candy sugar in boil,  
15 min.  
20.0 oz (567 g) molasses in boil, 15 min.  
1.0 oz (28 g) Challenger whole hops,  
10.1% alpha acid, (60 min)  
1.0 oz (28 g) EK Goldings whole hops,  
5% alpha acid, (30 min)  
1.0 oz (28 g) EK Goldings whole hops,  
5% alpha acid, (10 min)  
1.0 liter White Labs WLP 005 British  
ale yeast starter  
0.33 cup corn sugar to prime (78 mL)  
Irish moss, gelatin to clarify

- Original specific gravity: 1.092

- Final specific gravity: 1.023
- Boiling time: 90 minutes
- Primary fermentation: 10 days at 65° F (18° C) in glass
- Secondary fermentation: 10 days at 65° F (18° C) in glass

0.625 cup corn sugar (148 mL) to prime

- Original specific gravity: 1.095
- Final specific gravity: 1.023
- Boiling time: 90 min.
- Primary fermentation: 21 days at 66° F (19° C) in glass
- Secondary fermentation: 90 at 37° F (3° C) in glass

#### Brewer's Specifics

Mash grains at 155° F (68° C) for 90 minutes.

#### Judges' Comments

"A rich, complex old ale with generous malt flavors and just enough hop bitterness to avoid being cloyingly sweet."

"Very nice old ale. Some signs of age are OK for style. I was looking for just a little more malt complexity, but malt/hop balance was good."

"Pretty damn good! Hopping a bit much for style, and perhaps could use a bit more complexity in malt bill."

#### Brewer's Specifics

Mash grains at 152° F (67° C) for 90 minutes.

#### Judges' Comments

"Malty with dark fruit flavor. Light hop flavor and good hop balance. Very nice example of the style. With a little Stilton cheese, I could drink a couple of these."

"Well made, well balanced English-style barleywine. Some oxidation, but not enough to be a problem. Try fining to clarify more. Otherwise a good job."

#### Runners-Up

*Silver Medal:* Robert Hall, Laramie, WY, Old Ale

*Bronze Medal:* Chuck West, San Diego, CA, Old Ale, QUAFF

### Category 12: Barley Wine & Imperial Stout



#### Gold Medal

AHA 2004 National Homebrew Competition  
Sponsored by Anchor Brewing Co.

**James Edgins, Highlands Ranch, CO,  
Foam On The Range**

#### [Untitled], English-Style Barley Wine

##### Ingredients for 9 U.S. gal (34 L)

25.0 lb (5.44 kg) pale malt  
1.0 lb (0.45 kg) 55° L crystal malt  
1.0 lb (0.45 kg) 20° L crystal malt  
1.0 lb (0.45 kg) 120° L crystal malt  
4.5 oz (128 g) Challenger pellet hops,  
8% alpha acid (60 min)  
4.0 oz (113 g) EK Goldings pellet  
hops, 4% alpha acid (20 min)  
300 mL White Labs WLP002 English  
ale yeast starter

## Category 13: European Dark Lager



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Briess Malt & Ingredients Company

**Mike Heckman & Jeff Smith, Ossian, IN,  
Beergeoieisie**

**"Dark Helmet Schwarzbier", Schwarzbier**

### Ingredients for 5 U.S. gal (19 L)

- 2.5 lb (1.13kg) Munich malt
- 5.5 lb (2.49 kg) Pilsner malt
- 0.5 lb (0.23 kg) 60° L crystal malt
- 0.5 lb (0.23 kg) 120° L crystal malt
- 0.5 lb (0.23 kg) Carafla malt
- 1.4 oz (39 g) Hallertau pellet hops, 4.4% alpha acid (45 min)
- 0.75 oz (21g) Tettnanger pellet hops, 4.4% alpha acid (20 min)
- 300 mL White Labs WLP 820 Marzen lager yeast slurry
- 2.7 oz (76 g) corn sugar to prime

- Original specific gravity: 1.045
- Final specific gravity: 1.008
- Boiling time: 75 minutes
- Primary fermentation: 9 days at 55° F (13° C) in glass
- Secondary fermentation: 14 days at 40° F (4° C) in glass

### Brewer's Specifics

Mash grains at 148° F (64° C) for 30 minutes. Raise to 155° F (68° C) and hold for 30 minutes.

### Judges' Comments

"This is a very nice Schwarzbier. Big malty character with some roast sharpness and chocolate notes."

"Very nice beer. Might require more roast bitterness to be to style, but I wouldn't change a thing."

"Tasty beer. Very drinkable. A little more roastiness might improve."

### Runners-Up

**Silver Medal:** Jamil Zainasheff, Elk Grove, CA, Schwarzbier, QUAFF

**Bronze Medal:** Mark Ryan, Anchorage, AK, Munich Dunkel, Great Northern Brewers Club

## Category 14: Bock



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Washington Hop Commission

**Dean Domec & Kyle Moore, Vidor, TX,  
Golden Triangle Homebrewers Club**

**"EKU", Eisbock**

### Ingredients for 10 U.S. gal (37.8 L)

- 50.0 lb (22.7 kg) Belgian Munich malt
- 10.0 lb (4.54 kg) Moravian Pilsner malt
- 3.0 lb (1.36 kg) Briess dextrin malt
- 1.0 oz (28 g) German N. Brewer pellet hops, 8.5% alpha acid (first wort)
- 1.0 oz (28 g) German N. Brewer pellet hops, 8.5% alpha acid (90 min)
- 2.0 oz (57 g) German Hallertau pellet hops, 4.1% alpha acid (30 min)
- 1.5 oz (42.5 g) German N. Brewer pellet hops, 4.1% alpha acid (2 min)
- 2.0 qt (1.9 L) Wyeast No. 2206 Bavarian lager yeast starter  
Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.105
- Final specific gravity: 1.030
- Boiling time: 90 minutes
- Primary fermentation: 14 days at 46° F (8° C) in glass
- Secondary fermentation: 4 weeks at 65° (8° C) in glass
- Lagering: 6 months at 32° F (0° C) in steel

### Brewer's Specifics

Mash in at 154° F (68° C) and hold for 60 minutes. Mash out at 167° F (75° F) for 15 minutes.

### Judges' Comments

"An extremely enjoyable drink! The concentrated malt flavors have melded so nicely with the hops. The only recommendation would be to make more!"

"Really great beer! You nailed nearly no flaws (maybe CO<sub>2</sub> is too high). Spiciness is very interesting (from noble hops?). Great

job! I'll have another!"

"Super brew. It's complex, malty, fascinating and wonderful. For a beer so full it's perilously drinkable. Not much you can do to make this better."

### Runners-Up

**Silver Medal:** Jon Peterson, Poway, CA, Doppelbock, QUAFF

**Bronze Medal:** Mike Hahn, Salt Lake City, UT, Eisbock, Zion Zymurgist Homebrew Operative Society

## Category 15: Porter



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Deschutes Brewery

**AHA 2004 NHC HOMEBREWER OF THE YEAR**

**Rod Romanak, Kailua-Kona, HI,  
Kona Coast Barley Boys**

**"Rocket Rod Romanak's Positively  
Porter", Robust Porter**

### Ingredients for 12 U.S. gal (45.4 L)

- 20.0 lb (9.07 kg) Great Western pale two-row malt
- 4.0 lb (1.81 kg) Special B malt
- 2.5 lb (1.13 kg) Briess light roast
- 1.0 lb (0.45 kg) Briess black patent malt
- 1.0 lb (0.45 kg) Briess chocolate malt
- 2.0 oz (57 g) Nugget whole hops, (60 min)
- 2.0 oz (57 g) Chinook whole hops, (30 min)
- 2.0 oz (57 g) Chinook whole hops, (steep)  
Wyeast No. 1056 American ale yeast (2 XL packs)
- 0.875 cup corn sugar per 6 gallons to prime

- Original specific gravity: 1.068
- Final specific gravity: 1.020
- Boiling time: 90 minutes
- Primary fermentation: 7 days at 66° F (19° C) in glass
- Secondary fermentation: 21 days at 66° F (19° C) in glass

## Brewer's Specifics

Mash grains at 104° F (40° C) for 10 minutes. Raise to 122° F (50° C) and hold 30 minutes. Raise to 140° F (60° C) and hold 10 minutes. Raise to 158° F (70° C) and hold one hour.

## Judges' Comments

"Enjoyable beer, well balanced. Dries in aftertaste. Medium body, smooth. Good job!"

"A very nicely well balanced malt to hop bitterness. Clean fermentation with no noticeable flaws. Well made. I like it."

## Runners-Up

*Silver Medal:* Stephen Klump, Des Peres, MO, Brown Porter, Alchemy Brewing Club of St. Louis

*Bronze Medal:* Michael and Ruth Dahler, Kamuela, HI, Brown Porter

## Category 16: Stout



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Brew & Grow

**Rick Garvin and Christine Lewis, McLean, VA, Brewers United For Real Potables**

**"West Indian Viagra", Foreign Extra Stout**

### Ingredients for 12 U.S. gal (45.4 L)

- 35.0 lb (15.9 kg) Thomas Fawcett pale malt
  - 2.0 lb (0.9 kg) caramel Munich malt
  - 2.0 lb (0.9 kg) caramel aroma malt
  - 1.5 lb (0.68 kg) chocolate malt
  - 0.75 lb (340 g) black patent malt
  - 2.0 lb (0.9 kg) roast barley
  - 4.2 oz (119 g) Hop Union Horizon pellet hops, 11% alpha acid (60 min)
  - 0.5 gal (1.9 L) White Labs WLP 002 English ale yeast starter
  - 1 cup dry malt extract per 6 gallons to prime
- Original specific gravity: 1.075
  - Final specific gravity: 1.022
  - Boiling time: 90 minutes

- Primary fermentation: 14 days at 72° F (22° C) in glass

## Brewer's Specifics

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

## Judges' Comments

"Very pleasant. Possibly back off the hops just a trifle, and maybe reduce the highly-roasted malts just a little."

"Very well done. Great integrity of flavors; big, complex. Don't change a thing."

"Flavor is awesome. Aroma not quite as good. Great complexity and contribution from alcohol in the flavor. Intense stout."

## Runners-Up

*Silver Medal:* Pete Devaris, Anchorage, AK, Foreign Extra Stout, Great Northern Brewers Club

*Bronze Medal:* Phil Farrell, Cumming, GA, Sweet Stout, Chicken City Ale Raisers

## Category 17: Wheat Beer



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Widmer Brothers Brewing Co.

**Richard Nilles, Fargo, ND,**

**Prairie Homebrewing Companions**

**"Will-O-the-Wisp Weisse", Berliner Weisse**

### Ingredients for 5.5 U.S. gal (20.8 L)

- 2.75 lb (1.25 kg) Pilsner malt
  - 3.75 lb (1.7 kg) wheat malt
  - 1.25 oz (35 g) EK Goldings whole hops, 4.7% alpha acid (15 min)
  - Wyeast No. 1007 German ale yeast
  - 5.0 oz (142 g) corn sugar to prime lactic acid
- Original specific gravity: 1.022
  - Final specific gravity: 1.004
  - Boiling time: 15 minutes
  - Primary fermentation: 39 days at 74° F (23° C) in plastic

## Brewer's Specifics

Mash 5 lb of grains at 153° F (67° C) for 60 minutes. Let cool to 100° F (52° C) and hold for 36 hours. Add remaining grain with 2 qt (1.9 L) boiling water. Hold at 125° F (52° C) for 20 minutes. Add 6 qt (5.7 L) boiling water. Hold at 149° F (79° C) for 60 minutes. Add lactic acid at bottling to increase sourness.

## Judges' Comments

"A good example of Berliner Weisse. Not much wheat seems to have been used. Seems more citric than lactic."

"Nice 17C, classic souring. Could use a wheat presence at the end."

"Crisp, tart beer; nice example of a hard style to make. Could use more wheat character. Brett. Seems like it is present in small amounts."

## Runners-Up

*Silver Medal:* Harold Gulbransen, San Diego, CA, Weizenbock, QUAFF

*Bronze Medal:* John Applegarth, Grand Rapids, MI, Weizenbock, Prime Time Brewers

## Category 18: Strong Belgian Ale



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Dingemans c/o Cargill Malt

**Jack Kephart, Akron, OH,**

**Society of Akron Area Zymurgists (SAAZ)**

**"hmmmm...Tripel IV", Tripel**

### Ingredients for 6 U.S. gal (22.7 L)

- 12.9 lb (142 g) German Pilsner malt
- 2.0 lb (0.9 kg) beet sugar
- 0.6 lb (0.27 kg) Canadian honey malt
- 0.75 lb (340 g) honey
- 0.9 lb (0.4 kg) wheat malt
- 1.0 oz (28 g) N. Brewer whole hops, 7.5% alpha acid (60 min)
- 0.25 oz (7 g) Czech Saaz whole hops, 3.5% alpha acid (20 min)
- 0.5 oz (14 g) Tettnanger whole hops, 4.5% alpha acid (5 min)

Wyeast 3522 Belgian Ardennes ale yeast

- Original specific gravity: 1.085
- Final specific gravity: Unknown
- Boiling time: 90 min.
- Primary fermentation: Unknown
- Secondary fermentation: Unknown

#### Brewer's Specifics

Mash in grains at 134° F (57° C) for 10 minutes. Raise to 148° F (64° C) and hold 60 minutes. Mash out at 168° F (76° C) for 30 minutes. Add sugars to boil.

#### Judges' Comments

"This is a really good beer—it may be just a touch thick and a bit sweet—but I like it."

"Nicely made beer. No major flaws. Might be a touch sweet up front, but very drinkable. Needs to be better attenuated."

#### Runners-Up

Silver Medal: Steve Piatz, Eagan, MN, Tripel, Saint Paul Homebrewers Club

Bronze Medal: Rick Georgette, West Bloomfield, MI, Tripel

### Category 19: Belgian & French Ale



#### Gold Medal

AHA 2004 National Homebrew Competition

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

**George Mahoney, Simi Valley, CA,  
Maltose Falcons**

#### "Sorval", Belgian Specialty Ale

##### Ingredients for 5 U.S. gal (19 L)

- 8.5 lb (3.86 kg) Belgian pale malt
- 0.5 lb (227 g) 40° L crystal malt
- 0.25 lb (113 g) Special B malt
- 1.5 lb (0.68 kg) clear candi sugar in boil, 45 min.
- 1.0 oz (28 g) Styrian Goldings whole hops, 5% alpha acid, (90 min)
- 1.0 oz (28 g) Hallertau whole hops, 5% alpha acid, (90 min)

- 1.0 oz (28 g) Styrian Goldings whole hops, (45 min)
- 0.5 oz (14 g) Styrian Goldings whole hops, (15 min)
- 0.5 oz (14 g) Styrian Goldings whole hops, (dry)
- 1.0 gal Abbaye De Notre Dame ale yeast
- 0.75 c. dry candi sugar to prime Irish moss to clarify

- Original specific gravity: 1.062
- Final specific gravity: 1.004
- Boiling time: 120 min
- Primary fermentation: 14 days at 69° F (21° C) in glass
- Secondary fermentation: 14 days at 69° F (21° C) in glass
- Tertiary fermentation: 14 days at 50° F (10° C) in glass

#### Brewer's Specifics

Mash grains at 150° F (80° C) for 90 minutes.

#### Judges' Comments

"Tasty brew. Tastes like an Orval with a dash of lambic. The orange adds an interesting complexity."

"Very interesting and extremely well done beer, but if shooting for Orval, there is a bit too much sourness."

"Very drinkable, but astringency detracts."

#### Runners-Up

Silver Medal: Steve Schmitt, Anchorage, AK, Belgian Pale Ale, Great Northern Brewers Club

Bronze Medal: Steve Fletty, Falcon Heights, MN, Biere de Garde, Saint Paul Homebrewers Club

### Category 20: Lambic and Sour Ale



#### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by The Beverage People

#### AHA 2004 NHC NINKASI AWARD WINNER

Jamil Zainasheff, Elk Grove, CA, QUAFF

#### [Untitled], Flanders Red Ale

##### Ingredients for 6 U.S. gal (22.7 L)

- 4.5 lb (2.04 kg) German pilsner malt
  - 5.0 lb (2.27 kg) US Vienna malt
  - 0.5 lb (227 g) Belgian aromatic malt
  - 3.0 lb (1.36 kg) German Munich malt
  - 0.5 lb (227 g) Belgian caramel Munich malt
  - 0.5 lb (227 g) Belgian Special B malt
  - 0.5 lb (227 g) German wheat malt
  - 0.7 oz (20 g) EK Goldings pellet hops, 5.7% alpha acid (60 min)
- White Labs WLP001 California ale yeast  
Wyeast Roselare yeast

- Original specific gravity: 1.061
- Final specific gravity: Unknown
- Boiling time: 90 min
- Primary fermentation: Unknown
- Secondary fermentation: Unknown

#### Brewer's Specifics

Mash in at 154° F (68° C) and hold for 1 hour. Mash out at 168° F (76° C) for 10 minutes.

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### Judges' Comments

"Could use a little oak to dry out the finish, but it's a very nice attempt at the style."

"I have no comments that would improve this beer. Wow—nice job."

"Good complexity, sourness is restrained. Excellent shot at style. A touch heavy-handed with hops. May be big for style."

### Runners-Up

**Silver Medal:** Steve Piatz, Eagan, MN, Straight (Unblended) Lambic-Style Ale, Saint Paul Homebrewers Club

**Bronze Medal:** Scott Boeke, North Augusta, SC, Fruit Lambic-Style Ale

## Category 21: Fruit Beer



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Steinbart Wholesale

**Ted Grudzinski, Villa Park, IL,  
Urban Knaves of Grain**

**"Raspberry Wheat", American Wheat with  
Raspberries**

### Ingredients for 5 U.S. gal (19 L)

- 5.0 lb (2.27 kg) Schrier two row pale malt
- 5.0 lb (2.27 kg) Weyermann wheat malt
- 1.5 lb (0.68 kg) Briess Vienna malt
- 5.0 lb (2.27 kg) fresh frozen raspberries, in secondary
- 1.0 oz (28 g) Fuggle hops, 4.8% alpha acid (60 min)
- 0.5 oz (14 g) Cascade hops, 7% alpha acid, (30 min)
- 0.5 oz (14 g) Cascade hops, 7% alpha acid, (0 min)
- White Labs WLP 011 European ale yeast
- 5.0 oz (142 g) corn sugar to prime
- Irish moss to clarify

- Original specific gravity: 1.051
- Final specific gravity: 1.012
- Boiling time: 60 minutes

- Primary fermentation: 7 days at 68° F (20° C) in glass
- Secondary fermentation: 10 days at 68° F (20° C) in glass
- Tertiary fermentation: 14 days at 68° F (20° C) in glass

- 1.5 oz (42 g) Tettnanger pellet hops, 4.4% alpha acid (55 min)
- 0.5 oz (14 g) Tettnanger pellet hops, 4.4% alpha acid (15 min)
- White Labs WLP 008 East Coast ale yeast
- 1 cup corn sugar to carbonate Irish moss to clarify

### Brewer's Specifics

Mash grains at 152 F (67 C) for 60 minutes. Rack fermented beer onto raspberries in secondary. Note: This beer was made for Ted's wife, to be served at her work's Christmas party. Shortly after, she went on the Atkins diet and never tried it at the party, so Ted had enough left over to enter in the NHC. She has since sampled the gold medal winner for Category 21.

- Original specific gravity: 1.055
- Final specific gravity: 1.014
- Boiling time: 120 minutes
- Primary fermentation: 14 days at 70° F (21° C) in glass
- Secondary fermentation: 7 days at 70° F (21° C) in glass

### Brewer's Specifics

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

\*Pepper essence: Dice 1 Anaheim pepper, soak in Everclear for several days. Dice 1 jalapeño pepper, add to Everclear mixture; soak for a week, then strain off peppers.

### Judges' Comments

"Very good beer. Raspberries would go better with a Bohemian Pils rather than North German Lager, which this matches."

"A good, drinkable beer. I would like to have more malt and more raspberries show up. Not much wheat is perceptible. More malt sweetness would accentuate the raspberries better."

### Runners-Up

**Silver Medal:** Ted Hausotter, Baker City, OR, Strange Brew Homebrew Club

**Bronze Medal:** John Lott, Canton, GA

"A good American wheat with some pepper and sweetness evident. However, could use a little more heat for my tastes."

## Category 22: Spice/ Herb/Vegetable Beer



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Marin Brewing Co.

**John Jurgensen, Friendswood, TX,  
Bay Area Mashtronauts**

**"Peppered Honey Wheat", Wheat Beer  
with Honey and Pepper**

### Ingredients for 6.5 U.S. gal (24.6 L)

- 9.0 lb (4.08 kg) German wheat malt
- 5.0 lb (2.27 kg) Belgian Pils malt
- 1.75 lb (0.79 kg) honey, in boil
- 32 drops per bottle of pepper essence\*

## Category 23: Smoked Beer



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Alaskan Brewing Co.

**Paul Shick and Andy Craze,  
Cleveland Heights, OH,  
Society of Northeastern Ohio Brewers**  
**"Rolling Rauch", Classic Rauchbier**

#### Ingredients for 10 U.S. gal (37.8 L)

10.0 lb (4.54 kg) Weyermann smoked malt  
4.0 lb (1.81 kg) Weyermann Vienna malt  
5.0 lb (2.27 kg) Weissheimer Munich malt  
2.0 lb (0.9 kg) DWC caramel Munich malt  
1.0 oz (28 g) Mittelfruh pellet hops, 4.9% alpha acid (first wort)  
2.25 oz (64 g) Mittelfruh pellet hops, 4.9% alpha acid (60 min)  
White Labs WLP 830 German lager yeast, 2 pints slurry  
Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.060
- Final specific gravity: 1.018
- Boiling time: 70 minutes
- Primary fermentation: 30 days at 50° F (10° C) in glass
- Secondary fermentation: 20 days at 45° F (7° C) in glass
- Tertiary fermentation: 120 days at 40° F (7° C) in steel

#### Brewer's Specifics

Mash grains using a decoction schedule: 25 minutes at 149° F (65° C), then take 4 gallon decoction, boil 15 minutes; raise main mash to 158° F (70° C) for 1 hour; then raise to 165° F (74° C) for 90 minutes.

#### Judges' Comments

"Nice smoky flavor. Base beer is nicely done. Nice toasty notes. Well done."

"A really nice beer! I like it on many levels. However, the smoke is just a bit too much. I can drink another. And I will!"

### Runners-Up

*Silver Medal:* Jamil Zainasheff, Elk Grove, CA, Other Smoked Beer, QUAFF

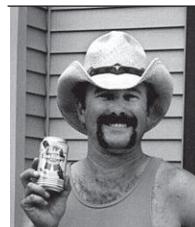
*Bronze Medal:* Kirk Allen, Anchorage, AK, Other Smoked Beer, Great Northern Brewers Club

### Judges' Comments

"Really wonderful with one small suggestion. Watch the bitter in the finish; try to soften that edge. Otherwise, a rich treat and a complete joy! Awesome effort."

"I like this beer a lot. The chocolate and coffee are balanced very well. My only complaint would be that the base beer is more like a foreign style stout. But the chocolate is probably adding to the body. Well done."

## Category 24: Specialty/Experimental/ Historical Beer



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Redhook Ale Brewery

**Corey Martin, Round Rock, TX,  
Austin Zealots**

#### "Eye Opener Stout", Dry Stout with Chocolate and Coffee

#### Ingredients for 5 U.S. gal (19 L)

8.0 lb (3.63 kg) Maris Otter pale malt  
1.0 lb (0.45 kg) black patent malt  
0.5 lb (227 g) Special Roast malt  
0.5 lb (227 g) British chocolate malt  
0.5 lb (227 g) flaked barley  
0.5 lb (227 g) flaked oats  
0.75 lb Maxwell House coffee, steeped in keg for 10 days  
3.0 oz liquid chocolate flavoring, added at kegging  
1.0 oz (28 g) Challenger pellet hops, 7.7% alpha acid (60 min)  
0.33 oz (9 g) N. Brewer pellet hops, 7.9% alpha acid (60 min)  
1 L Wyeast No. 1318 London ale III yeast starter  
Forced CO<sub>2</sub> to carbonate  
Irish moss to clarify

- Original specific gravity: 1.062
- Final specific gravity: 1.018
- Boiling time: 60 minutes
- Primary fermentation: 12 days at 68° F (20° C) in plastic
- Secondary fermentation: 21 days at 68° F (20° C) in glass

#### Brewer's Specifics

Mash grains for 90 minutes at 154° F (68° C). Add flavorings at kegging.

### Runners-Up

*Silver Medal:* John Watson, Southbury, CT, Underground Brewers Club of Connecticut

*Bronze Medal:* John Applegarth, Grand Rapids, MI, Prime Time Brewers

## Category 25: Traditional Mead



### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Winemaker Shop

#### AHA 2004 NHC MEADMAKER OF THE YEAR

**Joe Formanek, Bolingbrook, IL,  
Urban Knaves of Grain**

#### "Holy Hannah!", Varietal Honey Mead with Macadamia Nut Honey

#### Ingredients for 5 U.S. gal (19 L)

12.0 lb (5.44 kg) macadamia nut honey  
1.0 L White Labs sweet mead yeast  
Sparkolloid to clarify

- Original specific gravity: 1.092
- Final specific gravity: 1.036
- Boiling time: n/a
- Primary fermentation: 50 days at 68° F (20° C) in glass
- Secondary fermentation: 165 days at 68° F (20° C) in glass

#### Brewer's Specifics

Heat must to 160° F (71°C) and hold for 60 minutes.

#### Judges' Comments

"Well-made, interesting mead. Nice start but a disappointing finish. Alcohol and acid should mellow out with age."

"Very enjoyable varietal mead for enjoying after dinner. A piece of pineapple-upside down cake would fare nicely. Great honey expression. Good job keeping the aroma intact. Very delicate. Cheers!"

"Very good mead. Very interesting. Captured macadamias well. Not quite sweet enough to balance alcohol heat. A little astringency and harshness coming through. Still very drinkable. Good job."

#### Runners-Up

*Silver Medal:* Pete Devaris, Anchorage, AK, Varietal Honey Traditional Mead, Great Northern Brewers Club

*Bronze Medal:* Stephen Pursley, Norman, OK, Varietal Honey Traditional Mead

### Category 26: Fruit Mead



#### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Bacchus and Barleycorn

**Curt and Kathy Stock, St. Paul, MN,  
Saint Paul Homebrewers Club**

**"Strawbana Cabana", Other Fruit Melomel**

#### Ingredients for 3 U.S. gal (11.4 L)

- 10.0 lb (4.54 kg) Wildflower honey
- 8.0 lb (3.63 kg) frozen strawberries
- 2 ripe bananas
- 1 can apple strawberry banana frozen juice concentrate
- 2 packets Lalvin 71B yeast
- 1 tsp energizer
- 2 tsp nutrient
- Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.135
- Final specific gravity: 1.028
- Boiling time: n/a
- Primary fermentation: 25 days at 70° F (21° C) in glass
- Secondary fermentation: 40 days at 67° F (19° C) in glass
- Tertiary fermentation: 79 days at 65° F (18° C) in steel

#### Brewer's Specifics

All fruit was jammed through a funnel into a carboy. Mead was racked onto the fruit.

#### Judges' Comments

"Very drinkable mead with deceptive alcohol presence. Tannins are on the high side and the bananas just aren't recognizable. But still a very nice mead. Either don't mention the bananas or use more of them."

"Somewhat hot from alcohol in the finish with a touch of astringency. I think strawberry lovers would really appreciate this mead."

#### Runners-Up

*Silver Medal:* Jim Roberts, Spring Valley, CA, Other Fruit Melomel, QUAFF

*Bronze Medal:* Richard Simmons and Julie Jessen, Pagosa Springs, CO, Pyment, Homebrewers of Pagosa Springs (HOPS)

### Category 27:

#### Herb & Spice Mead and Braggot



#### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Home Brew Supply

**Pete Devaris, Anchorage, AK,  
Great Northern Brewers Club**

**"Holy Water", Sweet Sparkling Rose Petal  
Mead, Metheglin**

#### Ingredients for 5 U.S. gal (19 L)

- 12.0 lb (5.44 kg) organic tupelo honey
- 2.0 oz organic French rose petals
- Wyeast No. 3632 Sweet Mead yeast
- 2.0 tsp Wyeast yeast nutrient

- Original specific gravity: 1.100
- Final specific gravity: 1.020
- Boiling time: n/a
- Primary fermentation: 8 days at 54° F (12° C) in glass
- Secondary fermentation: 12 days at 54° F (12° C) in glass

#### Brewer's Specifics

Withdraw 3 cups of finished base mead and heat to 150° F (66° C). Steep rose petals until

they turn white, then strain colored, aromatic liquid from petal pulp and add back to finished mead.

#### Judges' Comments

"This mead is pretty good! Would be a great after dinner treat or to share with friends. Good job!"

"Wonderful spritzy taste accentuated by rose character. Beautiful floral rose bouquet."

#### Runners-Up

*Silver Medal:* Harold Gulbransen, San Diego, CA, Metheglin, QUAFF

*Bronze Medal:* Tyce Heldenbrand, Las Vegas, NV, Metheglin, SNAFU

### Category 28: Cider



#### Gold Medal

AHA 2004 National Homebrew Competition

AHA 2004 NHC Cidermaker of the Year

**Bruce Franconi, Red Hook, NY,  
Hudson Valley Homebrewers**

**[Untitled], Medium Still Special London  
Cider, Specialty Cider and Perry**

#### Ingredients for 5 U.S. gal (19 L)

- 5.0 gallons Roxbury Russet cider
- 1.0 T. pectic enzyme
- pomegranate juice, to taste
- sugar, to taste
- Premier Cuvee wine yeast

- Original specific gravity: Unknown
- Final specific gravity: Unknown
- Boiling time: n/a
- Primary fermentation: 7 days at 70° F (21° C) in glass
- Secondary fermentation: 60 days at 55° F (13° C) in glass

#### Brewer's Specifics

"The must was treated with sulfides in the fresh juice. After 24 hours, gas out the sulfides and introduce a reliable wine yeast (Premier Cuvee) that was started the night before. Primary fermentation persisted for roughly a week then racked to secondary and allowed to sit until bottling time. The finished juice was

racked stabilized with sorbate and sulfide then the pomegranate juice and sugar were added to taste. The batch was then bottled for consumption. It's all in the apples, your palate and the luck of the draw at judging."

#### Judges' Comments

"Great fruit flavor —balance toward sweetness—some acidic balance (especially in finish). Some alcohol. Delicious and well made."

"High acid, some astringency, but otherwise great apple and cranberry flavor. Very intense—a little acidic, but great flavor intensity and balance."

#### Runners-Up

*Silver Medal:* Nathan Wahl, Oak Harbor, OH, Standard Cider and Perry, BrewRats

*Bronze Medal:* Jamil Zainasheff, Elk Grove, CA, Specialty Cider and Perry, QUAFF

#### Category 29: New Entrants



##### Gold Medal

AHA 2004 National Homebrew Competition

Sponsored by Northern Brewer

**Craig Shapland, Agoura Hills, CA,  
Maltose Falcons**

**"Fat Bastard 'Wee' Heavy", Scottish  
Strong Ale**

##### Ingredients for 5.5 U.S. gal (20.8 L)

14.5 lb (6.58 kg) Maris Otter two-row pale
2.0 lb (0.9 kg) 75° L crystal malt
0.5 lb (227 g) biscuit malt
0.25 lb (113 g) peat smoked malt
0.13 lb (59 g) chocolate malt
0.25 lb (113 g) black treacle (in boil)
0.38 lb (172 g) maple syrup (in boil)
1.5 oz (42 g) EK Goldings pellet hops, 5.3% alpha acid (60 min)
0.5 oz (14 g) EK Goldings pellet hops, 5.3% alpha acid (15 min)
2 cups Wyeast No. 1728 Scottish ale yeast slurry
0.66 cups brown sugar to prime
Irish moss to clarify

- Original specific gravity: 1.089
- Final specific gravity: 1.018
- Boiling time: 90 min.
- Primary fermentation: 7 days at 68° F (20° C) in glass
- Secondary fermentation: 14 days at 65° F (18° C) in glass

#### Brewer's Specifics

Mash grains at 158° F (70° C) for 60 minutes.

#### Judges' Comments

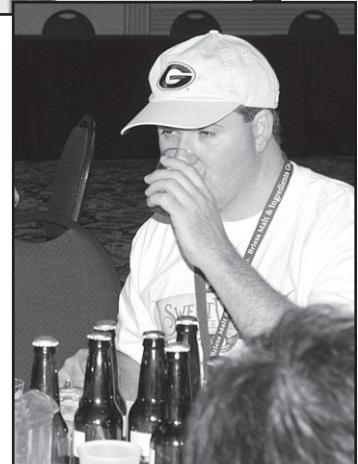
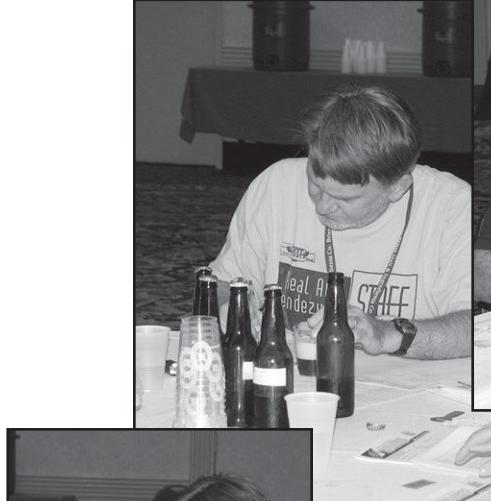
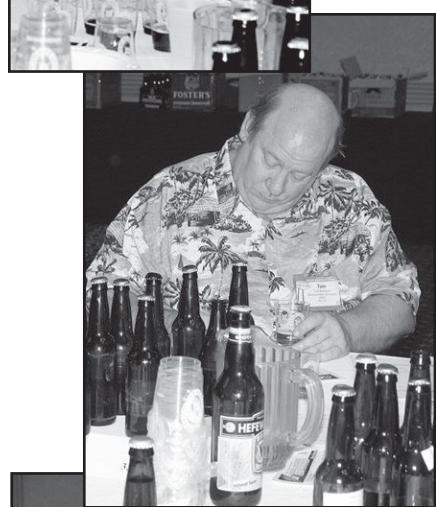
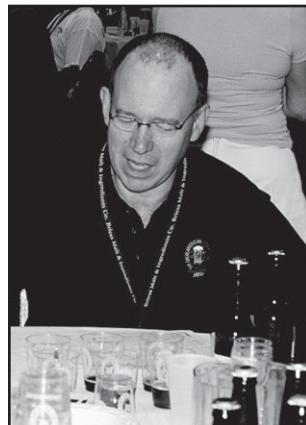
"A very nice strong Scotch ale, even more malt complexity—perhaps using several types of crystal would help improve overall impression. Good process."

"This beer has some good complexities, but seems to be missing any significant kettle caramelization. Good effort though."

#### Runners-Up

*Silver Medal:* Jonathan Procknow, League City, TX, Bay Area Mashtronauts

*Bronze Medal:* Joe Walts and Rachel Krauskopf, Ann Arbor, MI



BY CHARLIE PAPAZIAN

# Don't Call the Plumber

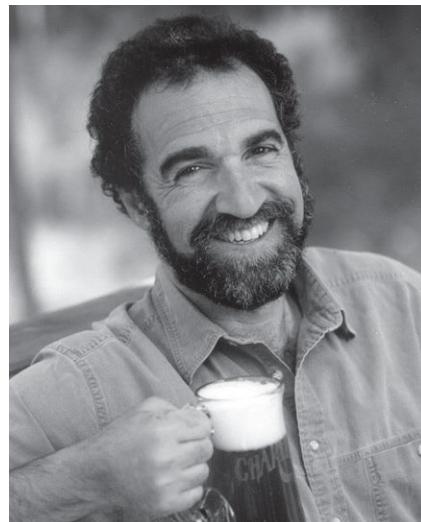
I figured it was a 15-minute trip to the hardware store and a five-minute fix. I was wrong because I made the mistake of not recognizing the obvious and not having confidence in what I observed. After a dripless eight years, my kitchen faucet began leaking. After a week or two of *drip, drip, drip* (thinking that maybe it would fix itself), I finally was moved to actually do something about it—I was destined to play plumber.

To sharpen my perceptions I took a deep breath and poured myself a homebrew, contemplating that if I approached this project in a logical manner I could be done in 10 minutes. Tools in one hand, a homebrew in the other, I was armed and ready.

Knowing that there are hundreds if not thousands of types of faucet fixtures and their accompanying washers, I took the fixture apart and journeyed to Boulder's most complete hardware store. Wandering the aisles I approached a green-aproned employee, flashing the fixture. He immediately introduced me to the "expert" in the plumbing aisle. "Let's see what you have there (pause, opening a drawer full of hundreds of washers)... this is what you need."

Pleased, I took the 69-cent "fix" to the cashier and was soon home refitting the fixture. Everything was in place. I turned the water back on. The drip was gone. But now the faucet leaked a thin stream of water and there was no way I could get it to stop despite taking the blasted thing apart five times and thinking I had done something wrong.

It was time for another homebrew. Using a magnifying glass, I closely examined the washer my hardware store expert sold me and compared it to the one that was the leaker. I looked hard and long, finally noting that there was a subtle, very subtle, difference between the two, but because the old washer was worn I couldn't be sure.



**After all that you have observed as a homebrewer and a beer taster, you are armed with all the sense of reason you need to make the beer that will work for you.**

One hour later, I was too frustrated to be drinking any more homebrew. Screw it—I was on my way to Longmont's Home Depot to see what they had to offer.

A wall of bagged washers and tiny drawers full of even more choices confronted me. Home Depot's expert soon arrived to offer his assistance. "I've fixed a thousand leaky faucets in my life," he said, handing me a plastic bag with two tiny washers for \$2.89. "This is what you need." He left to help another customer, but I wasn't about to leave. I took out my magnifying glass for close examination. I opened the package he gave me and compared "what I needed" to

the old washer and the washer from the other hardware store—the one that didn't work. I wasn't going back home with another loser. But he was trying to sell me the same washer! I wished I had a homebrew. Alone and without expert interference I looked hard and long at the dozens of options. I discovered another possibility. Opening the package I examined this second option in detail, comparing it with the three washers. Finally I noted that the original washer and this second option had a flat surface and the two that had been offered by the experts had an extremely subtle beveled surface. I took a deep breath and went with my decision and not the decision of the experts.

Arriving home, I had the faucet leak fixed within five minutes. This was three hours later on a Saturday afternoon that I would much rather have spent making homebrew. I was still pissed. Such is life—I had a homebrew and relaxed.

Brewing a batch of beer? It's your 10th, 20th, 50th batch and you've read and listened to the experts. You know what you want and you think you are on the right track but the experts are contradicting your best sense of direction. Well, I have some advice for you. Don't call the plumber! Try your best shot and your best guess. After all that you have observed as a homebrewer and a beer taster, you are armed with all the sense of reason you need to make the beer that will work for you. If you're always listening to someone else's advice you'll be making the beer *they* like.

If you taste a beer and you like the hop character, observe and find out what hops were used. You find out! Don't trust the experts—their knowledge could be outdated yesterday. What makes a great brewer and what makes great beer is developing the confidence you have in your own senses and observations.

Have a homebrew. Relax. Use tradition and other knowledge as your foundation, but build your own beers atop that foundation. If you like a certain beer, taste it. Bitter? Sweet? What kind of bitter and what kind of sweet? Caramel, toffee, brown sugar-ish, honey? Assertive bitterness, floral bitterness, earthy, citrusy, herbal, honey-ish? Taste, smell, look...closely observe and take notes. Learn what kind of ingredients build beer character by using your own senses and reasoning.

I was once asked to develop a recipe for an Irish-style red ale. I thought of the flavors and aroma of these beers. Traditional ingredients did not come to mind. I wanted the same end result, but suggested alternative and relatively modern ingredients: a small amount of Belgian Special "B" malt for complexity and redness; a scant amount of the usually traditional roasted barley; and a bit more chocolate malt or German debitterized black malt for color accent without the bitterness. American Mount Hood for balanced non-assertive soft-on-the-palate bitterness. American grown Santiam hops (a unique hybrid of German Tettnang) for late-finishing hops because late hopping with Santiam hops actually accents the sweet-caramel-toasted maltiness desired in an Irish Red Ale. So here you have a hop that is contributing to malty accents. I believe that there is a lot to be explored using hops to accent certain malt characters. But that's for another day.

American and Continental hops were too untraditional and English, Belgian and German malts in an Irish style were too "risky" to include in an Irish ale recipe for homebrewers. The recipe wasn't used. But if it were it would have made a superior Irish style red ale based on observations, modern ingredients and my intuition. And besides, the Irish malts and hops of today are no longer the same specifications of yesteryear.

Take a good, hard look at what you need and what you want. Don't always rely on the plumber and the guy who has done it a thousand times. The times are always changing and you are presently occupying your own space and own needs. Go for it.

### **Don't Call the Plumber Irish Red Ale**

#### **Malt Extract Recipe**

#### **Ingredients for 5 U.S. gallons (19 L)**

- 6.0 lb. (2.7 kg) very light malt extract syrup or 4.5 lb (2 kg) very light DRIED malt extract**
- 8.0 oz. (225 g) English 10-Lovibond Crystal malt**
- 4.0 oz. (112 g) Belgian aromatic malt**
- 4.0 oz. (112 g) Belgian Special "B" malt**
- 2.0 oz. (56 g) roasted barley**
- 1.0 oz. (28 g) German Carafe (debitterized black malt)**
- 1.0 oz. (28 g) 6% alpha Mt. Hood**

**whole hops (6HBU/168 MBU)**

**60 minute boiling**

**1.0 oz. (28 g) 5% alpha Santiam hop pellets (5 HBU/140 MBU)**

**20 minute boiling**

**1.0 oz. (28 g) Santiam hop pellets, 1 minute steep**

**0.25 tsp powdered Irish moss**

**0.75 cup (180 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging**

**Irish Ale type yeast**

- **Target Original gravity: 1.049 (12.5 B)**
- **Approximate Final gravity: 1.012–1.016 (3-4 B)**
- **IBUs: about 27**
- **Approximate color: 16 SRM (32 EBC)**
- **Alcohol: 4.6 percent by volume**

Place crushed grains in 2 gallons (7.6 L) of 150° F (68° C) water and let steep for 30 minutes. Strain out (and rinse with 3 quarts/3 liters hot water) and discard the crushed grains, reserving the approximately 2.5 gallons (9.5 L) of liquid to which you will now add malt extract and "60 minute" hops. Heat to boiling. After 40 minutes of boiling add the "20 minute" hops. After another 10 minutes of boiling add Irish moss. After a final 10 more minutes of boiling add the "steeping" Santiam hops and turn off the heat.

Immerse the covered pot of wort in a cold water bath and let sit for 20 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-gallon (19 L) batch size.

Pitch the yeast when temperature of wort is about 70° F (21° C). Ferment at 70° F for about five days or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary fermenter and cool to about 55° F (13° C) if possible and "cellar" for about a week.

Prime with sugar and bottle or keg when complete.

**Charlie Papazian is founding president of the Association of Brewers.**

**HOMEBREW BITTERING UNITS (HBUs)** are a measure of the total amount of bitterness in a given volume of beer. Homebrew Bittering Units can easily be calculated by multiplying the percent of alpha acid in the hops by the number of ounces. For example, if 2 ounces of Northern Brewer hops (9 percent alpha acid) and 3 ounces of Cascade hops (5 percent alpha acid) were used in a 10-gallon batch, the total amount of bittering units would be 33: (2 x 9) + (3 x 5) = 18 + 15. Bittering units per gallon would be 3.3 in a 10-gallon batch or 6.6 in a five-gallon batch, so it is important to note volumes whenever expressing bittering units.

**INTERNATIONAL BITTERNESS UNITS (IBUs)** are a measure of the bitterness of a beer in parts per million (ppm), or milligrams per liter (mg/L) of alpha acids. You can estimate the IBUs in your beer by using the following formula:

$$\text{IBU} = \frac{(\text{ounces of hops} \times \% \text{ alpha acid of hop} \times \% \text{ utilization})}{\text{gallons of wort} \times 1.34}$$

Percent utilization varies because of wort gravity, boiling time, wort volume and other factors. Homebrewers get about 25 percent utilization for a full one-hour boil, about 15 percent for a 30-minute boil and about 5 percent for a 15-minute boil. As an example, 1 ounce of 6 percent alpha acid hops in five gallons of wort boiled for one hour would produce a beer with 22 IBUs:

$$\text{IBU} = \frac{1 \times 6 \times 25}{5 \times 1.34} = 22 \text{ IBUs.}$$

**METRIC BITTERNESS UNITS (MBUs)** are equal to the number of grams of hops multiplied by the percent alpha acid.

# For Geeks Only

**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.

## How Long Will It Take to Chill Your Wort?

by Chris Bible

**W**ort cooling is a critical step in the homebrewing process. The primary reason for cooling the wort is to bring the wort temperature down to an optimal fermentation temperature as quickly as possible in order to minimize the time during which the wort is susceptible to contamination by bacteria or wild yeast. An additional benefit of rapidly cooling the wort is that by doing so, the chance of forming compounds that could later form dimethyl sulfide (DMS) is reduced.

There are several ways that a homebrewer can rapidly cool boiling wort. The use of a counter-flow wort chiller is one common method. A counter-flow wort chiller is typically configured as a "pipe-in-a-pipe" arrangement consisting of several feet (20 to 50) of coiled, three-eighths to half-inch copper tubing contained within either a garden hose or a larger rigid pipe. The "pipe-in-a-pipe" arrangement is generally bent into a coil.

Appropriate fittings on either end of the pipe-in-a-pipe coil allow garden-hose-supplied cooling water to flow into and out of the coil. The heat from the wort is removed by the action of the cooling water flowing through the outer pipe in the opposite direction of the flow of the wort within the inner pipe. The heat in the wort is transferred through the wall of the inner pipe and into the cooling water. The relative directions of

the fluid flows within the system are important; countercurrent flow (opposite direction) transfers heat more efficiently than concurrent (same direction) flow. Typical counter-flow chillers can remove heat from the wort at a rate such that the wort is brought down from boiling temperature (approximately 212° F) to yeast-pitching temperature (70° F to 75° F) within a matter of five to 15 minutes.

Essentially the counter-flow chiller is nothing more than a simple countercurrent type heat exchanger. The rate at which a counter-current type heat exchanger removes heat from the wort is dependent upon several things:

1. The surface area of the heat transfer surface of the inner pipe.
2. The temperature of the cooling water.
3. The temperature of the wort.
4. The relative temperature differences between the wort and cooling water along the length of the heat-exchange surface area.
5. The rate at which cooling water flows through the chiller.
6. The degree of agitation (turbulence) on each side of the heat transfer surface of the inner pipe.
7. The "overall heat transfer coefficient" of the chiller.

Increasing the surface area (i.e. using a longer pipe) increases wort cooling rates.

Having more cold surface area cools the wort more quickly by allowing more hot wort to contact cold surface area per unit time. *More surface area = faster cooling.*

The temperature of the wort and the temperature of the cooling water affect the overall cooling rate in that the larger the difference between the cooling water temperature and the wort temperature, the faster the wort will be cooled. The rate at which cooling water flows through the outer pipe is related to this in that the faster the cooling water flows through the pipe, the lower the average temperature of the cooling water within the pipe will be. At higher cooling water flow rates, the water has less time to heat up as it travels through the pipe, so it doesn't get as hot as if it were allowed to move more slowly through the pipe. *Hotter inner pipe and colder cooling water (larger temperature difference) = faster cooling.*

The amount of turbulence of the fluids around the inner-pipe heat-transfer surfaces is also very important to the observed heat



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transfer rate. If there is too little turbulence, it will take much longer to cool the wort. The reason for this is that the fluids nearest the heat-transfer surface will exchange heat very quickly but will only be moved away from the heat-transfer surface by convective or diffusional forces within the system.

Convective or diffusional movement is a relatively slow process. This means that, without good turbulence, fluids in very close proximity to the heat-transfer surface will quickly have a temperature that is relatively close to the temperature of the heat-transfer surface itself. If the temperature of the fluids nearest to the heat-transfer surface is relatively close to the temperature of the heat-transfer surface, very little heat transfer will occur (recall that larger temperature differences = faster cooling). In a heat exchange system such as this, good turbulence is obtained by having adequate flow rates of both the wort and the cooling water within both pipes. *Good turbulence = faster cooling.*

The “overall heat transfer coefficient” of the heat-exchange system is a number that quantifies the rate at which heat will be transferred from the wort and into the cooling water for a specified chiller geometry, wort temperature and cooling water temperature. This number is an empirically determined number that varies from system to system.

An engineering reference<sup>1</sup> states that for a counter-current heat-exchange system with adequate turbulence and with hot-side/cold-side medium consisting of water/water respectively, the overall heat transfer coefficient of the system will be between 200 to 250 Btu/hr-ft<sup>-2</sup>°F.

A schematic of a pipe-in-a-pipe heat exchanger used for wort cooling, with typical inlet and outlet temperatures, is shown in Figure 1.

All of this discussion can be summed up with a couple of relatively simple equations. This equation describes the rate at which heat is removed from the wort by a counter-current heat-exchange system.

$$Q_1 = UA \Delta T_{lm}$$

Where:

$Q_1$  = heat removal rate, Btu/hr

$U$  = Overall heat transfer coefficient, Btu/hr-ft<sup>-2</sup>°F

$A$  = Surface area of heat-exchange surface, ft<sup>2</sup>

$\Delta T_{lm}$  = Log mean temperature difference between wort and cooling water during heat transfer process.

Referencing Figure 1 for the temperature differences at each end of the pipes,  $\Delta T_{lm}$  is defined<sup>2</sup> as:

$$\Delta T_{lm} = \frac{\Delta T_2 - \Delta T_1}{\ln\left(\frac{\Delta T_2}{\Delta T_1}\right)}$$

The equation that describes the total amount of heat that must be removed from the wort in order to bring its temperature down to optimal fermentation temperatures:

$$Q_2 = mC_p \Delta T$$

Where:

$Q_2$  = total heat removal, Btu

$m$  = mass of wort, lbs

$C_p$  = Heat capacity (or specific heat) of wort, usually close to 1.0 Btu/lb-°F

$\Delta T$  = Temperature change of wort

Let's work through an example to illustrate how these equations can be used to predict the amount of time it will take to chill your wort using a counter-current wort chiller.

#### Assumptions:

Amount of wort to be cooled: 5.0 gal

Specific Gravity of Wort: 1.050

Initial Temperature of Wort: 212°F

Outlet Temperature of Wort: 75°F

Inlet Temperature of Cooling Water: 55°F

Outlet Temperature of Cooling Water: 140°F

Using a 50' counter-flow wort chiller with an inner pipe that is 3/8" o.d.

$U = 225 \text{ Btu/lb-ft}^{2\circ}\text{F}$  (the average of the range)

To determine how much total heat must be removed use  $Q_2 = mC_p \Delta T$ :

$$Q_2 = (5.0 \text{ gal})(8.34 \text{ lb/gal for water})(1.050 \text{ S.G. of wort})(1.0 \text{ Btu/lb-}^\circ\text{F})(212^\circ\text{F}-75^\circ\text{F})$$

$$Q_2 = 5,999 \text{ Btu}$$

To determine how long it will take to cool this wort down to 75°F use  $Q_1 = UA \Delta T_{lm}$

$$Q_1 = (225 \text{ Btu/lb-ft}^{2\circ}\text{F})(4.91 \text{ ft}^2)(40.6^\circ\text{F})$$

$$Q_1 = 44,836 \text{ Btu/hr}$$

Then divide  $Q_2$  by  $Q_1$  to get:

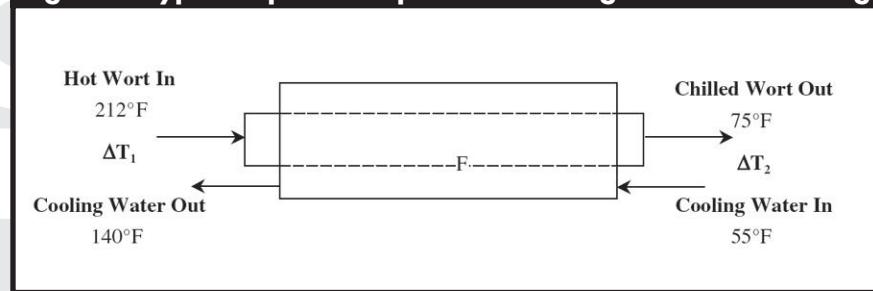
$$\begin{aligned} Q_2/Q_1 &= 5,999 \text{ Btu heat removal} \\ &\text{required}/44,836 \text{ Btu/hr heat removal rate} \\ &= 0.13 \text{ hr} = 8.0 \text{ minutes} \end{aligned}$$

Graphs showing the importance of the effects of cooling water temperature and heat-exchange surface area on total time required to cool the wort are shown in Figures 2 and 3.

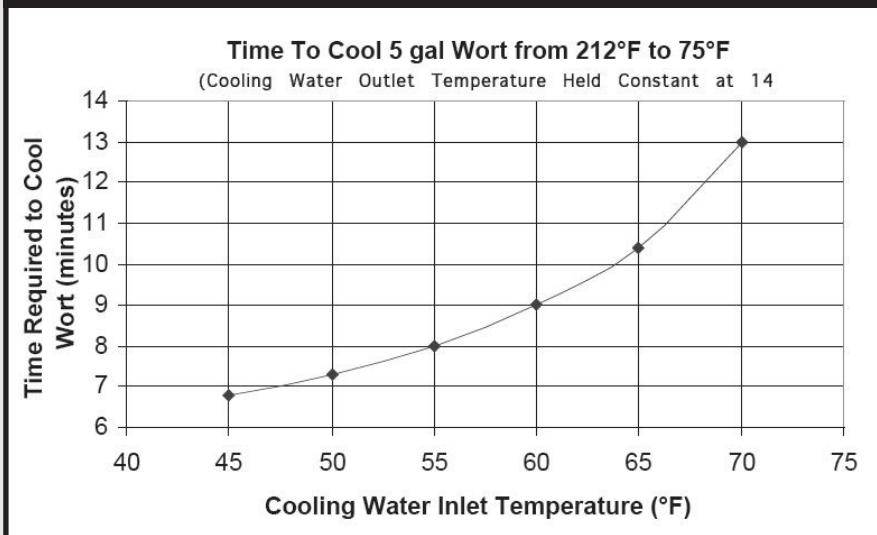
In general, a counter-flow wort chiller does an excellent job of rapidly cooling the wort down to a yeast-friendly temperature. To ensure optimal performance of your system, keep the following in mind:

1. Bigger is better. A longer wort chiller has more available surface area and will cool your wort more quickly.
2. Keep flows moving. Turbulence is required for good heat transfer.
3. Keep cooling water inlet temperature as cold as possible. Temperature difference is what drives heat transfer (more temperature difference between streams

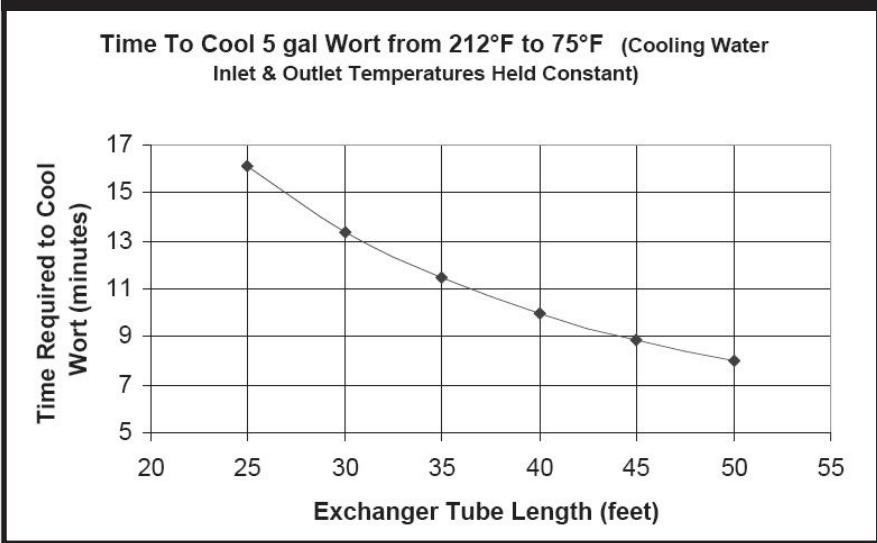
**Figure 1: Typical Pipe-In-A-Pipe Heat Exchanger For Wort Cooling**



**Figure 2: Effect of Cooling Water Inlet Temperature on Wort Chiller Performance**



**Figure 3: Effect of Inner Pipe Length (assuming 3/8" outer diameter of inner pipe) on Wort Chiller Performance**



- = quicker heat transfer).
- 4. Keep it clean. Aside from the obvious wort contamination issues, fouling of the heat-exchange surface slows heat transfer by decreasing the thermal conductivity of the heat-exchange area (more fouling = less heat transfer).

#### References

1. Perry's Chemical Engineer's Handbook, 6th Edition. McGraw-Hill: 1985, p. 10-44.

2. Walas, Stanley. *Chemical Process Equipment Selection and Design*. Reed Publishing: 1990, p.172.  
**Chris Bible is a chemical engineer (B.S., M.S.) currently working as the engineering and quality manager for J.M. Huber Corporation's Etowah, Tenn. facility. He lives in Knoxville with his wife and son and has been homebrewing for five years. Chris especially enjoys making and drinking stouts and porters.**



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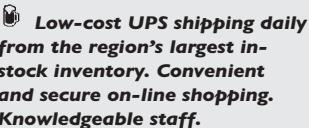
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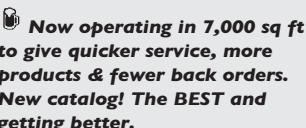
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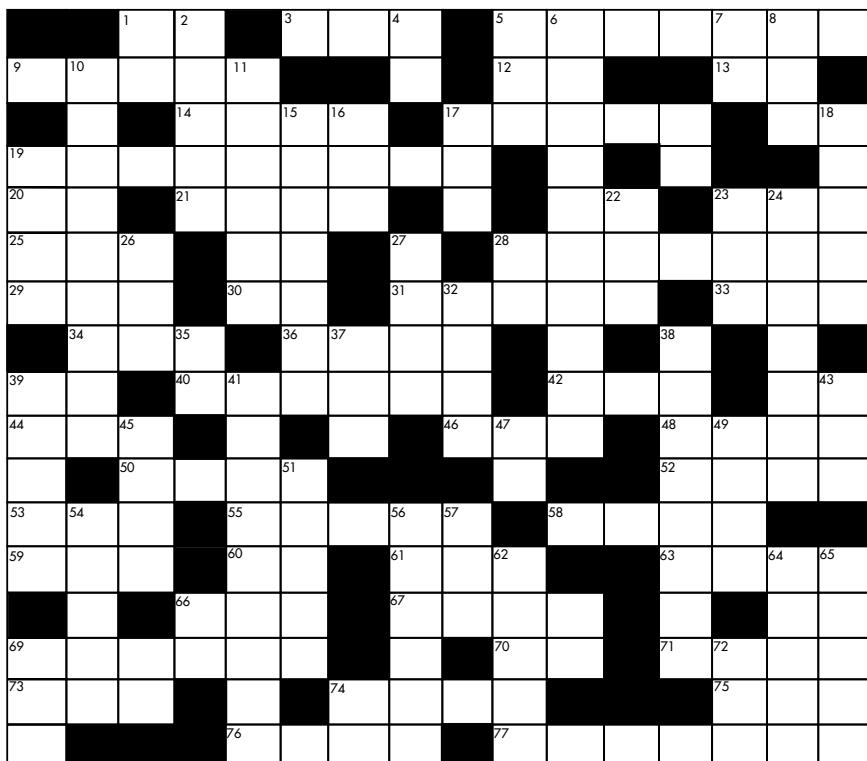
A M A H L   T U R C Z Y N   S C H E P P A C H

## Across

3. Ray Daniels' annual cask celebration, abby.
5. Compounds causing medicine, Band-Aid, smoke or clove off-flavors in beer.
9. German word "to store"; cold-fermenting beers.
12. Guitarist \_\_\_\_ Cooder.
13. Treated brewery water for post-fermentation use, abby.
14. Layered stout drinks: Black and \_\_\_\_.
17. Beer spoilage bacteria \_\_\_\_ coccus.
19. Extent to which yeast consumes fermentable sugars.
20. Japanese board game; to take action.
21. Swiss Coordination Committee for Biotechnology, abby.
23. Degree to which brewery waste consumes oxygen, abby.
25. Warm-fermenting beer.
28. Starch enzyme.
29. Grain used for whiskey, bread and beer.
30. Marine-based filtration medium, abby.
31. Colorado brewery founded by Gordon Knight and Ed Gruess in \_\_\_\_ Park.
33. Creamed corn off-flavor, abby.
34. Southport, CT brewpub abby.
36. University of Prince Edward Island abby.
39. Ratio of the circumference to the diameter of a circle.
40. To retain or collect a liquid, gas or dissolved substance by capillary action and surface tension.
42. Prefix meaning "out of."
44. Hop compound \_\_\_\_ humulone.
46. Low-tech 7-barrel mash stirrer.
48. \_\_\_\_ Schultz of Beer, Beer and More Beer.
50. Animal rights group, abby.
52. Final.
53. Congenital Adrenal Hyperplasia, abby.
55. "You won."
- "No, \_\_\_\_"
58. Traditional hop kiln: \_\_\_\_ house
59. Pre-boil wort oxygenation, abby.
60. Bean or Cool Jay
61. 4.5 to 5 gallon cask.
63. 100 liters: \_\_\_\_ oliter.
66. \_\_\_\_logy: the study of life.
67. Calgary Flames captain: \_\_\_\_ la.
69. Golden amber ale from Odell Brewing Co.
70. Japanese board game; to take action.
71. Best two-row malt for lagers.
73. Famous S.F. pub, the Pig \_\_\_\_ Whistle.
74. \_\_\_\_ylene: wood alcohol.
75. The \_\_\_\_ e Brewery in Seattle, makers of Old Bawdy Barleywine.
76. Gadget to heat and recirculate wort, abby.
77. Puckery substances in grape skins, tea and oak.

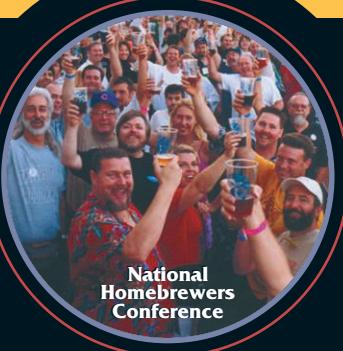
## Down

1. Pre-fermentation density of wort, abby.
2. \_\_\_\_ Wicked Ale.
4. Post-fermentation density of wort, abby.
5. \_\_\_\_-Prohibition Lager.
6. Device to measure wort density.
7. What you don't want to do with 8 Down.
8. \_\_\_\_tab: strong pain medication not recommended with beer.
10. Yeast cannibalism.
11. Oil staleness.
15. Cell center.
16. Brewing conglomerate that merged with Miller, abby.
17. \_\_\_\_chloric acid, dangerous cleaner used in some breweries.
18. Mountain range water source for Cusquena Peruvian Lager.
19. Yeast culture medium.
22. Abvy. for 10 Down.
23. \_\_\_\_ Frog Beer was banned in eight states for label's lewd gesture.
24. Movement of water through selectively permeable membrane.
26. Ecological and Evolutionary Biology, abby.
27. Generic term for fermented malt beverage.
28. \_\_\_\_lanta, GA.
32. German packaging company.
35. Bear Republic Brewing state, abby.
37. The physical location at which goods are sold to customers, abby.
38. Shallow pan used as a wort chiller, still used in Belgium.
39. To add yeast to fermentable liquid.
41. 10 centiliters = 1.
43. Province of Creemore Springs Brewery, abby.
45. Occupational Safety and Health Administration, abby.
47. Home state of the Great Northern Brewers homebrew club, abby.
49. Hop additions toward the end of the boil.
51. Metal made from a blend of metals.
54. Coors' low carb \_\_\_\_ Edge.
56. In cellarmanship, small pegs.
57. Welding technique with a tungsten electrode.
62. De Dolle's "Still Nacht" means "Still \_\_\_\_."
64. Secretary of State \_\_\_\_ Powell's favorite tipple is said to be Appleton Rum, not beer.
65. Jobs, chores, assignments.
69. Time between pitch and onset of fermentation.
72. Midnight Sun's beer "Magellan \_\_\_\_."

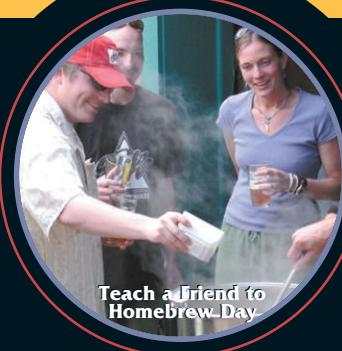


answers on p. 78

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2003 American Dark Lager Category

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