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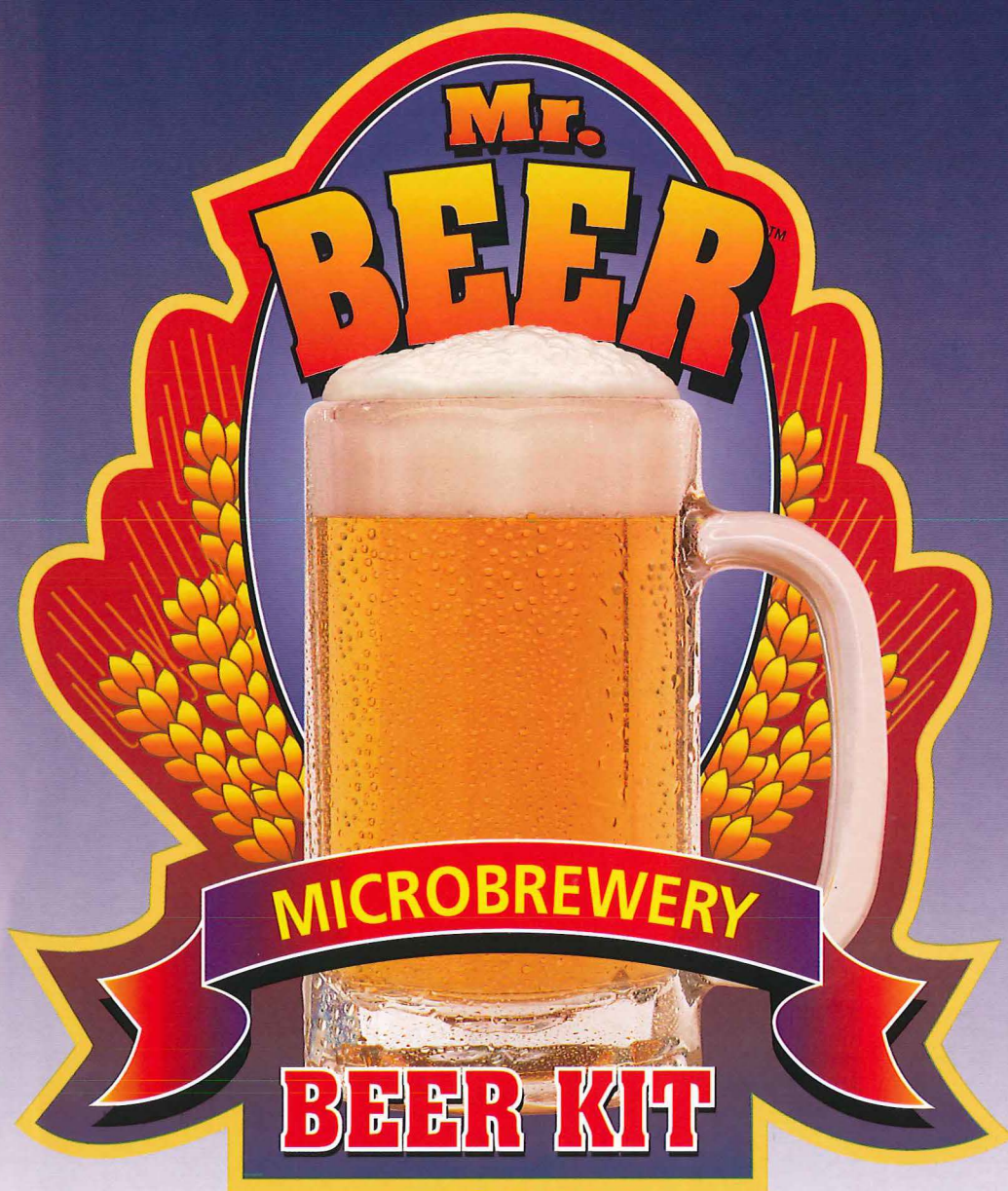
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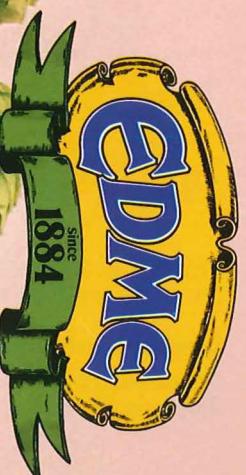
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FOR THE HOMEBREW AND BEER LOVER

Journal of the American Homebrewers Association

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To promote public awareness and appreciation of the quality and variety of beer through education, research and the collection and dissemination of information; to serve as a forum for the technological and cross-cultural aspects of the art of brewing; and to encourage responsible use of beer as an alcohol-containing beverage.

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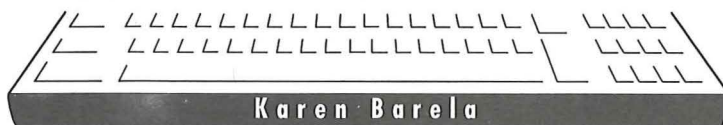
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EDITORIAL



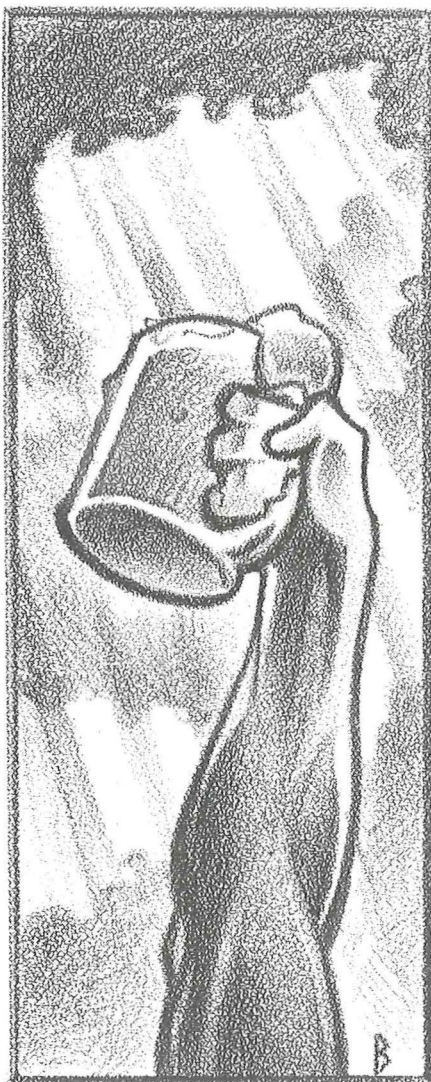
Finding Beervana (you know, the beer in Nirvana)

You might be surprised to hear this, but some days I really just want a glass of wine. I know it might be hard to believe, but there are days like this now and again. After a particularly rough day on the job at the AHA I simply don't want to think about beer. This may sound sacrilegious, and it might be. Fortunately these days are rare, and in between wonderful things can happen.

Like the Great American Beer FestivalSM.

Having just returned from the Festival I'm in complete awe, once again, of beer. Good old beer. Just beer. The drink of the nation. A relatively simply drink, yet complex. Every once in awhile, I slip and think, "Geez, it's only beer!" But when you're in a 110,000-square-foot hall filled with 1,204 beers from 264 different breweries and 20,000 beer lovers are there with you, it's like well, Beervana. You know, a place of inner peace and total bliss that puts you in a state of blessedness, gets you in touch with the supreme spirits of brewing. It makes you realize your desires and passions for beer and brewing are not yours alone, but are shared with thousands of others. And ironically, or more importantly, "just beer" at the GABF becomes a misnomer.

The GABF highlights the artistic joy behind beer and brewing. The fact that there were about 20,000 other beer lovers sharing this joy was really cool. For a few hours at the Festival the science takes a back seat and we revel fully in the results. The taste.




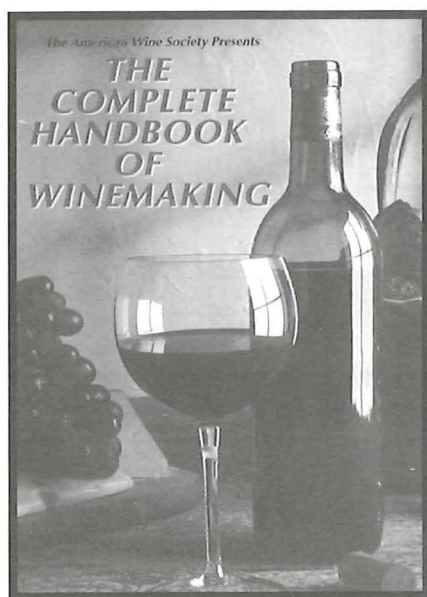
We search for the taste that will send our mind and taste buds to Beervana. It's something we as homebrewers have in common with professional brewers — enjoying the diversity of the finished products we've taken such care to create.

The GABF is great because we homebrewers get to taste, see and experience what the American professional brewers are doing. And we get to store the information we gather and apply it to our own brewing. Remember the Raspberry Coriander Porter from that little brewery in the middle of nowhere that no one ever heard of that was so amazingly wonderful? Even after sampling 35 other beers, why did you keep going back to that one? That's the kind of experience we seek with our homebrews. Remembering the very special batches, the beer that lifted us to the moon with the first sip.

Like the brewers at the GABF, I think we all experience a little bit of Beervana when we share our homebrew with friends and they have a positive reaction. At club meetings, competitions, conferences and homebrew festivals, no matter what the size, we momentarily live through that one-of-a-kind feeling. It's great to have our brew be the catalyst for such pleasure.

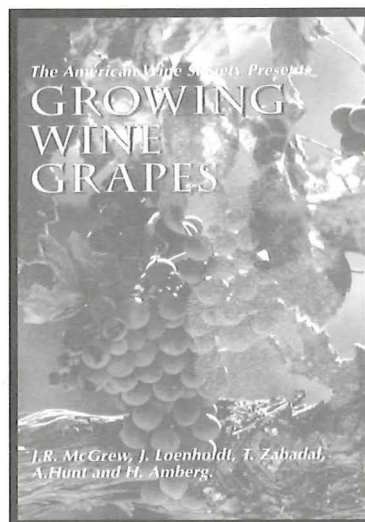
Beervana — the state of bliss you reach when you taste your homebrewed beer. It has nothing to do with a glass of wine.

Beervana — what's your definition? 



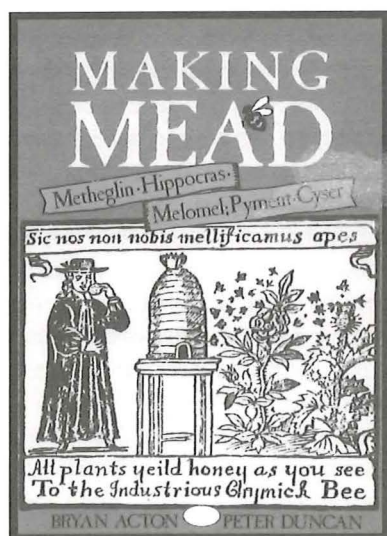
sherry. It covers analytical testing, monitoring malolactic fermentation and blending wines.

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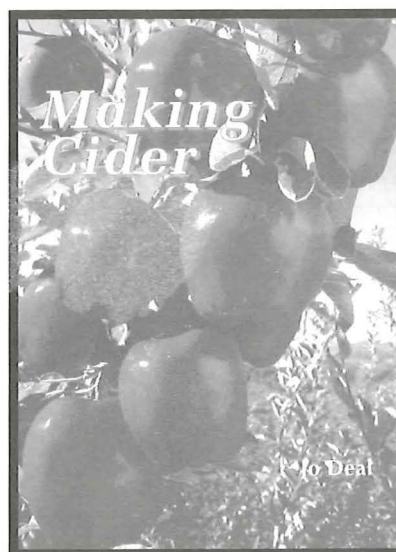


the vines, know when and how to harvest the ripe grapes, plant and nurture grafted vines, recognize grape pests and diseases, control and prevent pests and diseases.

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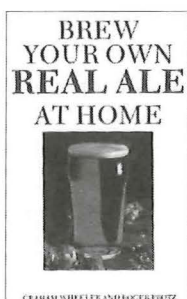
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Dear *zymurgy*,
Thanks for publishing the well-written review of *Brew Your Own Real Ale at Home* in *zymurgy* Summer 1994 (Vol. 17, No. 2). We wish to correct a minor error.

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Sincerely yours,
Rob Haiber
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Brad & Bondo's "Beer Talk"

Dear *zymurgy*,

I am the co-host of "Beer Talk," a show that devotes 20 to 30 minutes every week to beer, brewing and babbling about beery things. Our show has been airing since early 1992. Recently we decided that we would like to make our show available to those folks who are not fortunate enough to live in Montana. Our problem is simple. As a show that originates on public access TV, we cannot just contact any other cable access station



Brad and Bondo of "Beer Talk," a public access television program in Montana.

and say, "Hey, put us on the air and watch ratings soar." This is partly because of the truth in advertising thing and partly because most public access stations require local sponsorship of shows produced out of town. There is usually no cost to sponsor a show and we don't get paid to make the shows. We won't make any money by getting "Beer Talk" into your town.

So here is the pitch. If the readers of *zymurgy* could find it in their hearts to con-

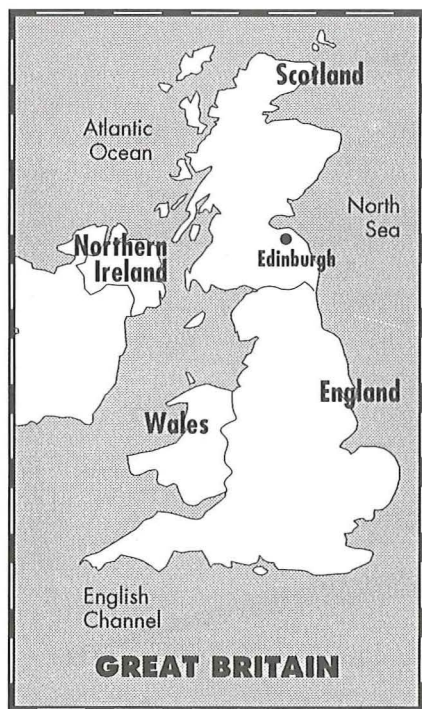
tact their local cable access station and see if they would be interested in "Beer Talk," the cable station can then contact us and poof, "Beer Talk" could supplant the mindless drivel on commercial TV. So let me tell you a little about the show. Bondo and I sit and taste about three ounces of three different beers every week. We tell stories about beer, report beer news, laugh at ourselves, talk about different styles of beer and try to steer consumers away from "bad beer."

We are never stuffy, and while it may seem to be the case, we are never inebriated — just goofy by nature. Our goal is to get people who already drink beer to try better beer, not to drink more beer.

So please help us if you can — if you would like to see "Beer Talk" in your town, please contact your local cable or community access station and have them contact me directly.

Sincerely,
Brad Robinson
"Beer Talk"
2423 South Hills Dr.
Missoula, MT 59803

Brewery Origins



Dear *zymurgy*,

In "Brew News" (Summer *zymurgy* 1994, Vol. 17, No. 2) is written *England's* Scottish and Newcastle Brewery! Great Britain is a loose alliance (no constitution) of four countries: Scotland, Wales, Northern Ireland and England.

Scottish and Newcastle Breweries is a large brewing company, a result of many mergers during its long history, chiefly the merger of Scottish Brewers (a Scottish company) and Newcastle Breweries (an English company).

The head office of this company, in fact, is in Edinburgh, Scotland. Therefore, it would be more correct to call it *Scotland's* Scottish and Newcastle Brewery, but because it does have breweries in England as well as Scotland it would be most correct to call it *Britain's* Scottish and Newcastle Brewery, but never *England's*.

Yours truly,
Robert McIntosh
Oshawa, Ontario, Canada

We Hear You

Dear *zymurgy*,

One thing I think could be improved in your magazine is the recipes. The vast majority of recipes you publish seem to be full mashes requiring advanced techniques. My associates and I would like to see more beginner and intermediate recipes printed that do not require all the advanced apparatus and know-how. I think you would agree that a great portion of your members are not at this level.

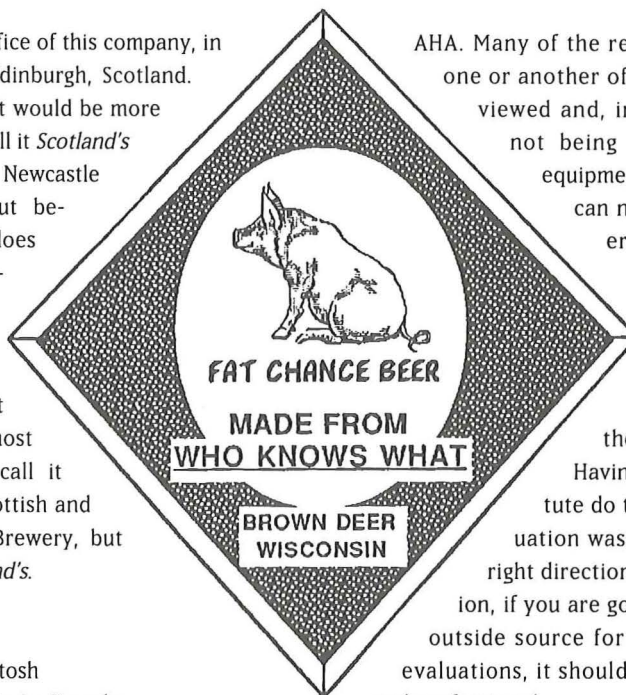
Thank you,
Jon Miner
Seattle, Washington

Additional Throughput

Dear *zymurgy*,

There are several points readers should be aware of while pondering your article on grain mills ("Roll Out the Mills" *zymurgy* Fall 1993 Vol. 17, No. 3).

(1) It is less than forthright to identify the article as a product of the "AHA Research Department." I declined to participate because it was not conducted by the



AHA. Many of the reviewers own one or another of the mills reviewed and, in addition to not being professional equipment evaluators, can not be considered unbiased and well-qualified to make objective judgments on these products. Having Siebel Institute do the grist evaluation was a step in the right direction. In my opinion, if you are going to use an outside source for reviews and evaluations, it should be unbiased and professional.

(2) Because I chose not to participate voluntarily, your Research Department evaluated a version of the Maltmill that is not representative of what we had been shipping for more than a year prior to the evaluation. Both the roller design and spacing have been changed, making the sieve analysis meaningless.

(3) For the grist evaluation, the Research Department chose a roller spacing they decided would provide the maximum acceptable grist and set the three mills using feeler gauges. The Maltmill, being fixed at one end, cannot be set this way. They made it look very much like a fixed mill, and the sieve analysis bears this out.

It might be inferred from the article that one-sided adjustability of the Maltmill is a limitation, when this is actually the key to the so-called "textbook crush."

Contrary to what is stated in the article, it is impossible to "provide too fine a crush" with a Maltmill if "too fine" is defined as unusable. To achieve the "textbook crush" on a Maltmill, the rollers must be set to near contact at the adjustable end. To understand why this is so one needs to understand how the adjustable Maltmill works and then look at the drawing of the six-roller mill in the article.

In the drawing of the six-roller mill, notice the roller spacings are about 0.050-inch, 0.030-inch and 0.012-inch from top

to bottom. When an adjustable Maltmill is set to near contact at the adjustable end one gets these same numbers at the fixed end, center and adjustable end respectively. The result is the random distribution of grain across the length of the rollers provides about the same grist distribution as a six-roller mill. This situation is enhanced as the roller length is increased and probably could not be reproduced in a mill with short rollers.

(4) The fixed Maltmill evaluated had a roller spacing of 0.055-inch but this was changed to 0.045-inch more than a year ago. The grist shown for double pass is about the same as now produced on a fixed mill with a single pass.

(5) The article states "it is necessary to employ a high-quality six-roller commercial mill" to obtain the textbook crush. I would like to point out that in January 1991, George Fix evaluated an adjustable Maltmill and compared the grist with that from a \$6,500 commercial mill. In his words, "The data show the same type of crush is achieved." [For a detailed account of this test, contact Jack Schmidling directly. — Ed.] The fact that your Research Department was unable to achieve similar results says more about them than about the capabilities of two-roller mills. A well-designed and properly adjusted two-roller mill can (and has) produced such a grist.

(6) Finally, one should not jump to the conclusion that the cited textbook standard for commercial grist is necessarily the optimum for homebrewing. In fact, in my opinion a somewhat coarser grist is much more forgiving in the wide variety of homebrew systems being used and the difference in extract yield is not even measurable at the homebrew batch size.

Aside from all that, it was fun reading, but I still think you should do your own reviews.

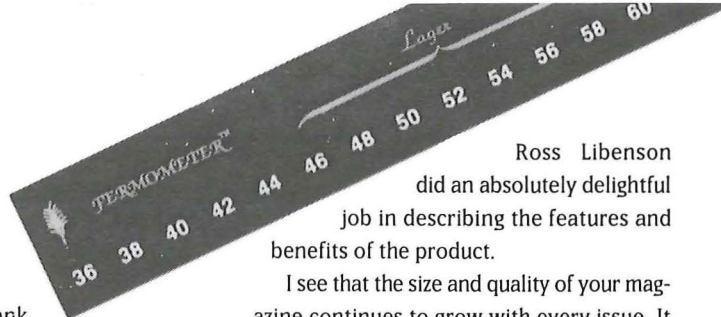
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Good Review

Dear *zymurgy*,

I would like to thank you and all of your staff for the tremendous review that *zymurgy* has done of our product, the Fermometer. We are extremely pleased that it made it into *zymurgy* Spring 1994 (Vol. 17, No. 1). It finally has the exposure and endorsement it needs and deserves.



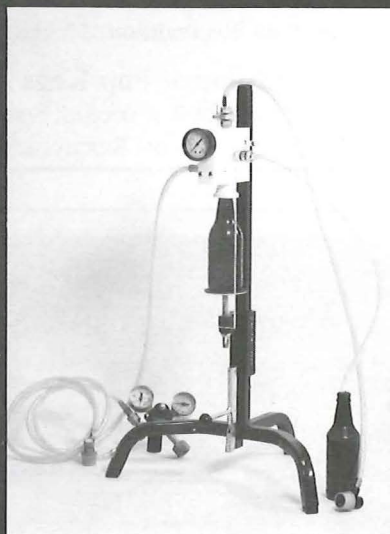
Ross Libenson
did an absolutely delightful
job in describing the features and
benefits of the product.

I see that the size and quality of your magazine continues to grow with every issue. It is a testament to your hard work and relentless effort. Keep it up.

Sincerely,
Steven J. Tkach
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Micro-Brews
Vol. 1
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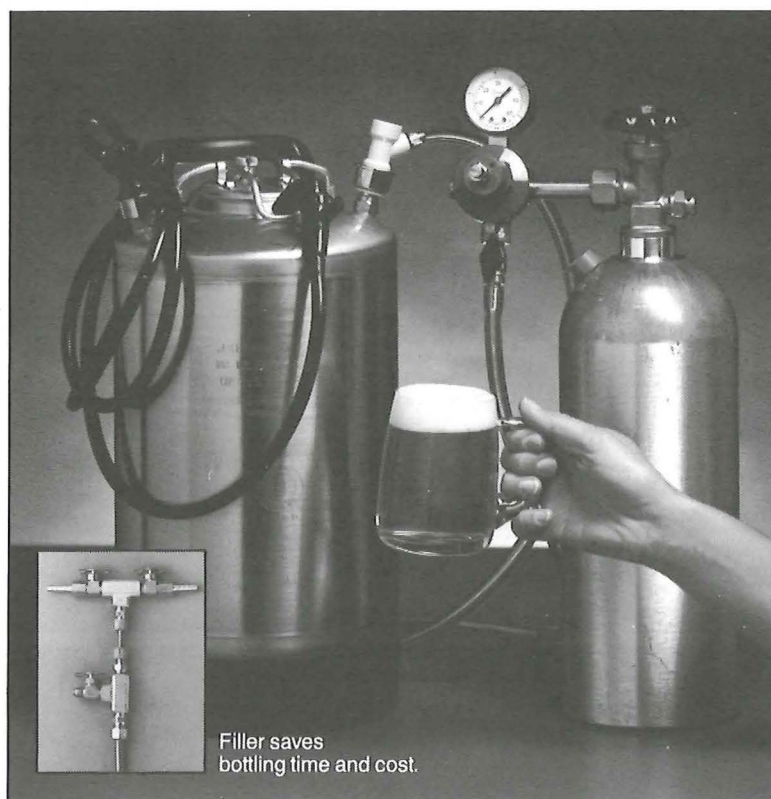
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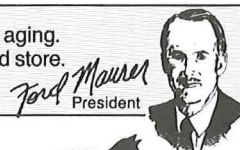
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A S S O C I A T I O N NEWS

 Karen Barela



Jim Homer Honored

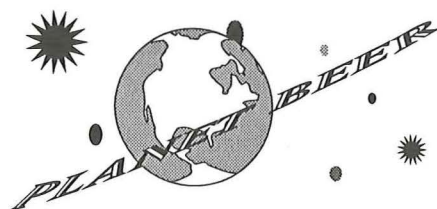
The American Homebrewers Association Board of Advisers proudly awarded the annual AHA recognition award to Jim Homer at the 1994 National Homebrewers Conference in Denver. The AHA recognition award honors one person each year who has made outstanding contributions to the homebrewing community. Jim was chosen to receive this award for seven and one-half years of dedication to the Beer Judge Certification Program co-sponsored by the AHA and the Home Wine and Beer Trade Association. From 1986 to 1993, Jim volunteered his time and energy as the BJCP co-director representing the AHA. Co-directors are responsible for scheduling, writing and grading exams.

Jim was instrumental in growing the program to the level of success it has today. He helped make policy changes, exam improvements and has prepared questions for more than 60 exams and personally graded more than 125 exams for 960 exam takers! "I'm very proud to be included with the previous recipients. It's been a great experience to be an integral part of the BJCP, and I've enjoyed working with all of the judges, brewers and program staff," said Jim. "I'm honored and I thank the AHA board of advisers for this award." Seven and one-half years is a long time for anyone to volunteer for such a demanding position,

yet Jim was unwavering in his dedication to, and support for, the program. We welcome Jim to the honorable list of recipients of the annual AHA recognition award:

- 1994 Jim Homer, Boulder, Colo.
- 1993 Dave Logsdon, Mount Hood, Ore.
- 1992 Ed Busch, Somerville, N.J.
- 1991 George Fix, Arlington, Texas
- 1990 Byron Burch, Santa Rosa, Calif.
- 1989 Pat Baker, Keene, N.H.
- 1988 Fred Eckhardt, Portland, Ore.

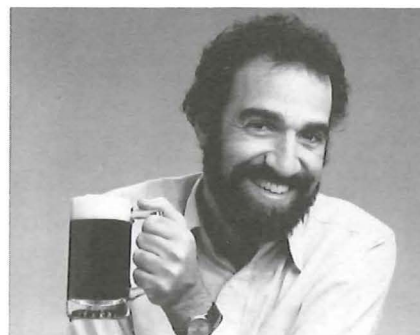
Planet Beer — June 14-17



Baltimore, Md., is the host city for the AHA 1995 National Homebrew Conference, Planet Beer. Plan now to join hundreds of the world's most enthusiastic homebrewers from June 14 through 17 for fun-filled days with brews by the bay, lots of famous Maryland blue crabs and cruisin' for brews in Baltimore brewland. Educational sessions will feature beer and brewing subjects sure to expand your homebrewing knowledge. The second round of the AHA National Homebrew Competition will take place Wednesday morning, June 14. Judges and stewards should mark their calendars and plan to attend. For details on the AHA 1995 National Homebrew Competition see the insert in this issue. Details on Planet Beer will be printed in *zymurgy* Spring 1995 (Vol. 18, No. 1), scheduled

to be mailed Feb. 10. These are two of the most significant and rewarding services the AHA offers and we guarantee you will do your brew a huge favor by participating. For information contact the AHA.

Wasn't That Charlie?



Charlie Papazian, founder of the AHA and author of the new book, *The Home Brewer's Companion* (Avon Books, 1994) traveled to several U.S. cities in early August on an Avon-promoted signing tour. He was happy to meet all of the AHA members who came out to have their books autographed and he gladly tasted those great homebrews the members shared. Charlie was in Alaska, Ohio, Massachusetts, Pennsylvania, New York, Illinois, Georgia, Nevada and Florida recently on beer business where he met with many area homebrewers. Charlie joined the AHA and Association of Brewers staff in Denver Oct. 21 and 22 for the Great American Beer FestivalSM XIII. Look for Charlie at the Book and the Cook in Philadelphia March 22 through 26, and the Bluebonnet Brew Off in Dallas, Texas, March 31 through April 1. Anyone interested in having Charlie or any of the AHA staff attend one of your special events should contact the AHA in writing six months or more in advance.

AHA Membership Services

The American Homebrewers Association is a membership organization. This means you can take advantage of your membership by using the many great benefits we provide for your beer and brewing pleasure. All of the services we offer are chosen because they support the AHA mission statement, "... the collection and dissemination of information ..." as it relates to quality beer and brewing. (The complete mission statement is on the staff page of *zymurgy*.) And, because the AHA is part of a larger whole, the Association of Brewers, we are able to offer benefits that take advantage of this connection and use the information and services from the other divisions to support our goals. The Members-Only Tasting at the Great American Beer FestivalSM is one example. There is more to the AHA than just five great issues of *zymurgy*. You have not bought a subscription to a magazine (we do not sell subscriptions), rather, you have paid membership dues to one of the largest homebrewing clubs in the world. So take advantage of your membership and use these great services.

- 📖 Support for and discount to the AHA National Homebrewers Conference
- 📖 Support for and discount to the AHA National Homebrew Competition
- 📖 Access to the Beer Judge Certification Program (co-sponsored by the AHA and Home Wine and Beer Trade Association)
- 📖 Discount to the AHA Sanctioned Competition Program
- 📖 Access to the AHA Registered Homebrew Club network
- 📖 Six annual Club-Only Competitions
- 📖 On-line communication through the CompuServe beer forum (70740,1107)
- 📖 Periodic discounts from Brewers Publications
- 📖 Special discount (in conjunction with Avon Books) for the *The Home Brewer's Companion* (Avon Books, 1994) by Charlie Papazian
- 📖 Free information and technical support available through mail, CompuServe and by phone and FAX
- 📖 Five issues a year of *zymurgy*, four that include original research from the AHA Research Department
- 📖 Members-Only Tasting at the Great American Beer FestivalSM

It's your **membership** — make it work for **you!**

Members Meet and Mingle

Among the many great benefits of your AHA membership is the Members-Only Tasting at the Great American Beer FestivalSM. On Saturday, Oct. 22, more than 2,000 AHA members joined the Institute for Brewing Studies members, GABFSM participating brewers and Association of Brewers staff for an exclusive afternoon of beer tasting and award ceremonies. Members had the opportunity to see the gold-, silver- and bronze-medal winners announced and to taste the winning beers. The AHA 1994 Homebrewer of the Year, Jim Liddil, who was awarded a

complimentary trip to the GABFSM sponsored by the Festival, was on hand to congratulate many of the winners and to share his brewing expertise with homebrewers. Many AHA members took advantage of a new service, the opportunity to have BJCP judges, the expert tasters, guide them through the hall to sample beers and share their knowledge. (It is similar to having a private or group ski lesson!) The GABFSM had more than 264 participating breweries with more than 1,200 American-brewed beers on tap and in bottles. The AHA staff was honored to help make the Members-Only Tasting available as a very special benefit to AHA members. The 1995 Great American Beer FestivalSM will take place Oct. 6 and 7 in Denver.

1999?

membership number	expiration date	member type
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Boulder, CO 80302		

If you're an AHA lifetime member, you have probably noticed that the mailing label you receive on *zymurgy* has an expiration date listed as 12/31/1999. We know that you plan to be around in the new century, and so do we. It's just that our new computer system has not yet been taught to recognize dates beyond 1999.

You can always check on your membership status by referring to the expiration date on the mailing label. Because we transferred all of our membership data into our new computer system, you should check your expiration date carefully to see that the new system read it correctly. If you have questions regarding your membership status or expiration date, please contact our circulation department at (303) 447-0816, Ext. 103 or 104, or call the customer service line directly at (303) 546-6514.

It's in the Mail

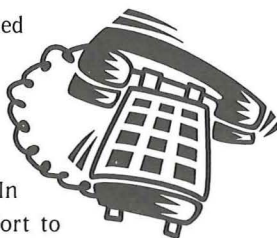
You may have noticed we've been experimenting with the most efficient, cost effective and trouble-free way to mail *zymurgy*. We've been struggling to balance all of the U.S. Postal Service regulations that apply to the AHA as a non-profit organization eligible to mail via third class with the "perfect-bound" spine and removable dust cover. Our number one concern is to have *zymurgy* arrive in your mailbox in perfect condition. Please let us know your opinions, suggestions and thoughts concerning this matter.

Because we mail third class, the U.S. Postal Service does not forward your magazine if you move. Therefore, it's up to you to let us know if you have a change of address. Send all address changes to PO Box 1510, Boulder, CO 80306-1510.



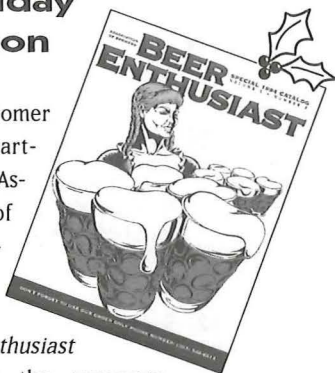
Press # to Reach the AHA

If you've phoned our office recently you know we have installed a new voice mail phone system. In our ongoing effort to serve you better we offer direct choices to connect you immediately to the staff member you need. The main menu allows access to membership and merchandise information, advertising, marketing or the office directory. You can push 0 at any time to be connected to an operator and you can still reach the customer service department directly to place membership or merchandise orders by using the customer service number, (303) 546-6514. As always, we are interested in feedback and suggestions you might have that can help us serve you better.



Holiday Season

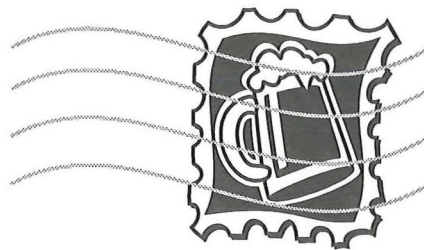
The customer service department of the Association of Brewers encourages you to use the *Beer Enthusiast* Catalog in the *zymurgy* Special Issue 1994 (Vol. 17, No. 4) for ordering your holiday gifts. Customer service personnel will be available Monday through Friday from 8 a.m. to 5 p.m. MST to help suggest the perfect gift for the beer lover in your life. During the holiday season the customer service department strives to ship your order within three days of receiving it. Overnight and second-day deliveries are always available. For merchandise orders call our customer service department at (303) 546-6514. For AHA and AOB business call (303) 447-0816. FAX merchandise orders or business to (303) 447-2825. The AOB offices including all of the divisions will close at noon on Dec. 24 and reopen at 8 a.m. on Jan. 2, 1995.



Stay in Touch

We love it when you contact us. Write, FAX, phone, e-mail or stop by our office. Let us know what you think, how we're doing and what homebrewing needs we can help you meet. If you are in the area, stop in to say hello and spend some time in our brewing library.

Send media items to Lori Tullberg-Kelly, AOB marketing director; *zymurgy* article proposals to Dena Nishek, *zymurgy* editor;



and AHA comments to Karen Barela, AHA president, at the American Homebrewers Association, PO Box 1679, Boulder, CO 80306-1679.

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ZYMURGY Winter 1994

13

CALENDAR

1994

DECEMBER

- 4 BJCP Exam**, Lake Bluff, Ill. Contact Steve Howard at (708) 234-4150.
- 5 Specialty Quest Club-Only Competition, AHA SCP**. Entries due Dec. 5. Contact James Spence at (303) 447-0816, Ext. 121.
- 10 Happy Holidays Homebrew Competition, AHA SCP**, St. Louis, Mo. Entries due Nov. 29. Contact Ginger Wotring at (314) 773-7867.
- 10 Oregon Lager Jam — Lagers-Only Competition, AHA SCP**, Corvallis, Ore. Entries due Dec. 9. Contact Dean Bautz at (503) 752-8142.
- 18 BJCP Exam**, Lancaster, Penn. Contact Richard Gleeson at (610) 833-2357.

1995

JANUARY

- 7 BJCP Exam**, Santa Rosa, Calif. Contact Byron Burch at (707) 544-2520.
- 14 BJCP Exam**, Brattleboro, Vt. Contact Pat Baker at (603) 355-3359.
- 21 BJCP Exam**, Brattleboro, Vt. Contact Pat Baker at (603) 355-3359.
- 21 Bay Area Brewoff, AHA SCP**, Dublin, Calif. Entries due Jan. 1-7. Contact John Pyles at (510) 790-8160.
- 22 Las Vegas Winterfest '95, AHA SCP**. Entries due Jan. 18. Contact Rob McLaughlin at (702) 254-5217.
- 28 BJCP Exam**, Burlington, Vt. Contact Tom Ayres at (802) 660-9007.
- 28 Second National Deaf Homebrew Competition, AHA SCP**, Portland, Ore. Entries due Jan. 14. Call the Grateful Deaf Homebrew Society at (503) 775-8685.

- 29 Hail to Ale Club-Only Competition, AHA SCP**. Entries due Jan. 23. Contact James Spence at (303) 447-0816, Ext. 121.

FEBRUARY

- 3-5 HWBTA National Homebrew Competition**, South Barrington, Ill. Entries due Jan. 21. Contact David Ittel at (708) 885-8282.
- 4 BJCP Exam**, Portland, Ore. Contact Doug Henderson at (503) 232-6585.
- 4 Fourth Annual Central Illinois Homebrew Competition, AHA SCP**, Normal, Ill. Entries due Jan. 21. Contact Tony McCauley at (309) 664-6284.
- 10 zymurgy Spring Issue (Vol. 18, No. 1) mails**. Please allow four to six weeks for delivery.
- 11 BJCP Exam**, Tampa, Fla. Contact Bill Jenkins at (813) 623-3711 Ext. 157.
- 11 BJCP Exam**, Brighton, Mich. Contact Bill Pfeiffer at (313) 946-6573.
- 12 BJCP Exam**, Blue Island, Ill. Contact Al Korzonas at (708) 430-HOPS.
- 14 Fur Rendezvous, AHA SCP**, Anchorage, Alaska. Entries due Feb. 13. Contact Douglas Simpson at (907) 338-4256.
- 17 Kansas City Bier Meisters' 12th Annual Homebrew Competition, AHA SCP**, Kansas City, Mo. Entries due Feb. 4. Contact Alberta Rager at (913) 894-9131.
- 18 Commander Saaz's Interplanetary Homebrew Blastoff, AHA SCP**, Cape Canaveral, Fla. Entries due Feb. 14. Contact Carl Saxer at (407) 649-6717.
- 19 BJCP Exam**, Lenexa, Kan. Contact Alberta Rager at (913) 894-9131.

MARCH

- 11 Second Annual Queen of Beer Womens Competition, AHA SCP**, Placerville, Calif. Entries due Feb. 24-March 3. Contact Elizabeth Zangari at (916) 626-7733.
- 11 America's Finest City Homebrew Competition, AHA SCP**, San Diego, Calif. Entries due Feb. 27-March 8. Contact Skip Virgilio at (619) 566-7061.
- 18 Winter Carnival Brewers Assay, AHA SCP**, Fairbanks, Alaska. Entries due March 17. Contact Roger Penrod at (907) 479-8795.
- 19 BJCP Exam**, New Westminster, B. C. Contact Len Spencer at (604) 524-9463.
- 19 BJCP Exam**, Troy, NY. Contact Gregg Smith at (208) 533-4879.
- 25 Second Annual Greater Wichita Open Homebrew Competition**, HWBTA sanctioned competition, Wichita, Kansas. Entries due March 17. Contact Lee Bussy at (316) 267-2391.
- 27 Bock is Best Club-Only Competition, AHA SCP**. Entries due March 20. Contact James Spence at (303) 447-0816, Ext. 121.
- 31 Fifth Annual Dukes of Ale Spring Thing, AHA SCP**, Albuquerque, N.M. Entries due March 25. Contact Guy Ruth at (505) 294-0302.

APRIL

- 1 Ninth Annual Bluebonnet Brew-Off, AHA SCP**, Irving, Texas. Entries due March 18. Contact Pat Morrison at (817) 383-4399.
- 2 BJCP Exam**, Dallas/Fort Worth. Contact A.L. Kinchen at (214) 241-4986.
- 21 zymurgy Summer Issue (Vol. 18, No. 2) mails**. Please allow four to six weeks for delivery.



ILLUSTRATION BY DOUGAL MCKNIGHT

22 Bidal Society of Kenosha, **AHA SCP**, Kenosha, Wis. Entries due April 15. Contact Carol DeBell at (414) 654-2211.

22 Chili Cookoff and Beer Brewoff, **AHA SCP**, Grand Junction, Colo. Entries due April 18. Contact Jana Stevens at (303) 241-0070.

23 **BJCP Exam**, Naperville, Ill. Contact Frank Dobner at (708) 892-3629.

23-26 Institute for Brewing Studies' Microbrewers and Pubbrewers Conference and Trade Show, Austin, Texas. Contact Nancy Johnson at (303) 447-0816, Ext. 131.

MAY

6 **BJCP Exam**, Orlando, Fla. Contact Ronald Bach at (407) 696-2738.

7 Sixth Annual Central Florida Sunshine Challenge, Orlando, Fla., **AHA SCP**. Entries due May 1. Contact Tom Moench at (407) 952-4658.

11-14 Home Wine and Beer Trade Association Conference, Atlanta, Ga. Contact Dee Roberson at (813) 685-4261.

26-28 Fourth Annual Mazer Mead Competition, **AHA SCP**, Ann Arbor, Mich. Entries due May 8-19. Contact Dan McConnell at (313) 663-4845.

29 Rauchbier Roundup Club-Only Competition, **AHA SCP**. Entries due May 22. Contact James Spence at (303) 447-0816, Ext. 121.

JUNE

14-17 **AHA National Homebrewers Conference, Planet Beer**, Baltimore, Md. Details in *zymurgy* Summer Issue (Vol. 18, No. 2). Call the AHA at (303) 447-0816.

JULY

7 *zymurgy* Fall Issue (Vol. 18, No. 3) mails. Please allow four to six weeks for delivery.

8 **BJCP Exam**, Brattleboro, Vt. Contact Pat Baker at (603) 355-3359.

AUGUST

1-5 Great British Beer Festival, London, England. Contact CAMRA at 0727 867201.

12 Josephine County Fair, **AHA SCP**. Entries due Aug. 10. Contact Hubert Smith at (503) 597-2142.

26 Weiss is Nice Club-Only Competition, **AHA SCP**. Entries due Aug. 14. Contact James Spence at (303) 447-0816, Ext. 121.

SEPTEMBER

13 *zymurgy* Special Issue (Vol. 18, No. 4) mails. Please allow four to six weeks for delivery.

OCTOBER

6-7 Great American Beer FestivalSM XIV, Denver, Colo. Call the Association of Brewers at (303) 447-0816.

28 Best of Fest Club-Only Competition, **AHA SCP**. Entries due Oct. 23. Contact James Spence at (303) 447-0816, Ext. 121.

NOVEMBER

22 *zymurgy* Winter Issue (Vol. 18, No. 5) mails. Please allow four to six weeks for delivery.

DECEMBER

9 Renowned Brown Club-Only Competition, **AHA SCP**. Entries due Dec. 4. Contact James Spence at (303) 447-0816, Ext. 121.



AHA SCP = American Homebrewers Association Sanctioned Competition Program

To list events, send information to *zymurgy* Calendar of Events. To be listed in *zymurgy* Spring 1995, information must be received by Jan. 10, 1995. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months before the event. Contact James Spence at (303) 447-0816, Ext. 121, FAX (303) 447-2825, PO Box 1679, Boulder, CO 80306-1679, or CompuServe 70740,1107.



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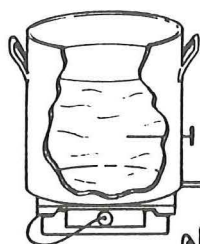
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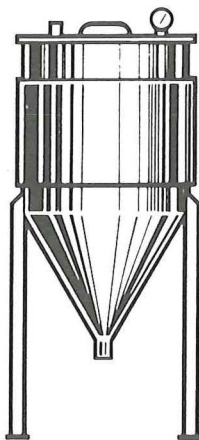
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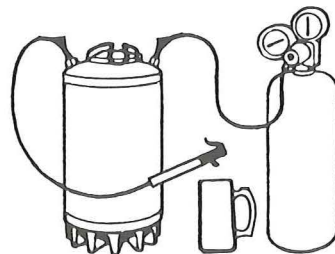
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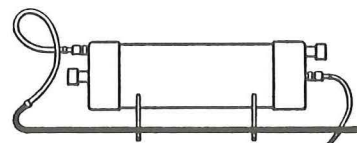
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BREW NEWS

James Spence

HEAD LINES

Does Advertising Affect Drinking?

According to the Beer Institute, which produced the graph below, advertising expenditures have little effect on per capita beer consumption. The graphs, compiled from the Census Bureau, advertising reports and information from R.S. Weinberg and Associates, show a relatively flat line for consumption per capita, while inflation-adjusted advertising expenditures nearly doubled during the period from 1973 to 1992. According to National Beer Wholesalers Association President Ron Sarasin, "Beer marketers advertise to influence market share, not to entice non-drinkers to drink or to make drinkers drink more." (*NBWA Beer Perspectives*, March 28, 1994)

Court to Consider Coors Case

The U.S. Supreme Court has agreed to hear a case involving Coors Brewing Co.'s challenge of a decades old law prohibiting alcohol content information on beer labels. After losing twice to Coors at lower court levels, the U.S. Justice Department has appealed to the Supreme Court. The Justice Department fears that repealing the law would cause brewers to produce stronger beers and stronger advertising campaigns, focusing on alcohol content to increase sales. Coors has challenged the law by saying it shows an unconstitutional restraint on freedom of speech.

'Sensory Drama' Plays at Goose Island

Chicago's Goose Island Brewing Co. hosted "With Beer," described as a social-art



Jerry Curry of "With Beer" experiences the wonder of touch.

event for adults, a sensory drama that commemorates the touch, taste, sight, smell and sounds that make up the art and pleasures savored with beer. Performance artist Jerry Curry and head brewer Greg Hall transformed the brewery into a "hands-on ritualistic performance space." The performance included two poets, a chef, a blind masseur, an actor and a composer.

Sorghum Gains Popularity

National Sorghum Breweries (NSB) of South Africa plans to increase its leading sorghum beer market share to about 20 percent by 1996 by building new breweries and launching new beer types. The investment of around 750 million DM (about \$485 million) seems risky to market experts, but in 1992 the normal beer market increased 4 percent while the sorghum beer market increased 5 percent. NSB products are particularly popular in black townships according to *Brauwelt International*.

Worldwide, sorghum has become a potential brewing crop of the future. When Nigeria banned malt imports in 1988, brewers such as

1973-1992 Advertising (Beer Institute)
Per Capita Beer Consumption (21 and over) and Beer Advertising Dollar Expenditures (Inflation Adjusted)

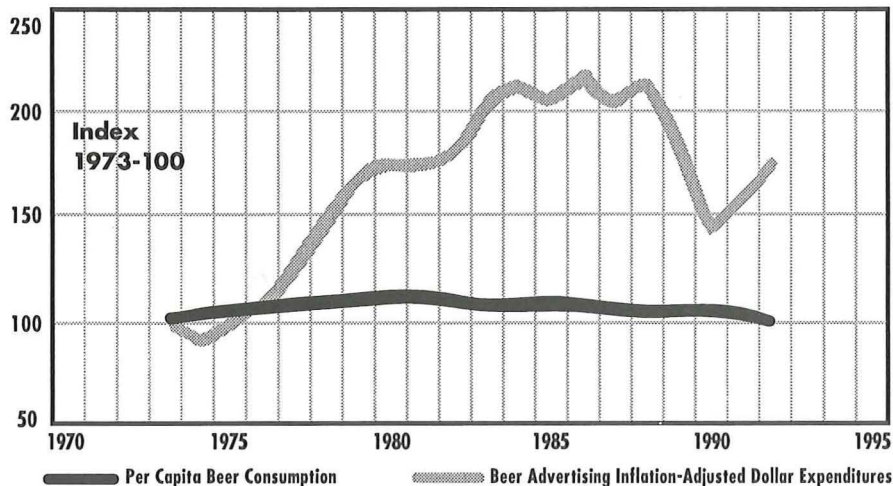


PHOTO COURTESY OF JACK HILL

Guinness were forced to find alternative cereals for beer making. Maize and sorghum grits became the only options. This event and others like it have led to extensive research into brewing with sorghum by brewers and universities, including Heriot Watt, University of Louvain, University of Texas, Heineken, and Guinness. Research has shown that when appropriately cultivated, malted and brewed, sorghum can produce worts comparable to barley worts. A principal stumbling block for large-scale sorghum malt production has been the lack of an established seed industry. Most seed production is not designed specifically for producing sorghum suitable for brewing, making it an industry yet to be developed. (B. T. Little of Guinness Brewing Worldwide lecture to the Institute of Brewing, Cambridge, July 8-9, 1993)

Edme Earns Queen's Award

Malt and malt extract manufacturer Edme Ltd. was presented the Queen's Award for Export Achievement in April. During the past five years, Edme's exports have increased by 400 percent and expanded to more than 35 countries, with particular success in North America. In January 1993, a fire destroyed most of the 100-year-old company's extract factory. Rebuilding cost £3 million. The company began producing homebrew products in 1963 when homebrew licenses were no longer required in the United Kingdom. (Edme Ltd.)



Edme staff cheering the news of the Queen's Award for Export Achievement alongside their distinctive tanker.

Japanese Get a Break on Beer



Four of Japan's largest supermarket chains have challenged a 40-year trend in pricing by offering consumers discounts on beer. The stores are at risk of being cut off by Japan's large breweries that in the past have been investigated for being a cartel. The supermarkets, however, are not concerned. They believe their sales volume is large enough that the breweries will not take measures to stop the beer discounts and paving the way for price negotiations. For consumers, the discounts amount to a savings of 30 cents to \$1 on a can of beer. About 10 percent of the beer sold in Japan is discounted. (*The New York Times*, April 21, 1994)

Redhook Nets Distribution Deal

Redhook Ale Brewery and Anheuser-Busch have reached an agreement giving Redhook

access to Anheuser-Busch's nationwide distribution network in exchange for a minority interest in the Seattle microbrewery. According to both companies, Redhook will continue to operate independently. Redhook brewed 74,000 barrels of beer in 1993. Anheuser-Busch, the world's largest brewer, produced 87.3 million barrels under more than 17 brands. (*Modern Brewery Age*, June 13, 1994, Vol. 45, No. 24)

TECHNOTES

Brits Approve Engineered Yeast

Scientists at BRF International have won approval by the United Kingdom to use a genetically engineered yeast in commercial brewing. The new yeast strain, NCYC1324-pDVK2, is the world's first genetically engineered yeast to be approved for beer production. The yeast strain NCYC1324 was genetically altered so that it produces its own amylolytic enzymes to digest starch. One use for this ability is to inexpensively produce low-calorie beer by having the yeast break down formerly unfermentable dextrin molecules. Brewers may also save the time and money of adding enzymes to fermentations. (*Beverage and Distilling International*, May 1994, pp. 16-17)

Factors Affecting Maltotriose Uptake

Some breweries have problems with high levels of fermentable sugars in their finished beer. Slow yeast uptake of maltotriose, a trisaccharide of three glucose molecules, is usually the culprit. Scientists studying the effect of environment on maltotriose utilization capabilities of ale and lager yeasts found that, in all instances, lager yeast (*S. uvarum*) utilized maltotriose faster than ale yeast (*S. cerevisiae*). In general, both yeasts utilize glucose in wort first, before tackling maltose and maltotriose. Among the fermentation factors studied were oxygenation, agitation, temperature, wort osmotic pressure and ethanol levels. Higher

levels of oxygen in worts led to more rapid maltotriose utilization by the lager yeast, while an increase by ale yeast was evident only at oxygen levels of at least 32 milligrams per liter. Increasing temperature caused both yeasts to increase uptake. Agitation improved uptake by lager yeast, but had no effect on ale yeast. Increasing wort osmotic pressure (simulating high-gravity worts) decreased the lager yeast uptake rate (still faster than ale yeast), but did not affect the ale yeast. Both yeasts had de-

creased uptake with initial wort ethanol levels of greater than 5 percent alcohol by volume. (*Journal of the American Society of Brewing Chemists*, Vol. 52, No. 2, 1994, pp. 41-47)

First Wort Hopping "Rediscovered"

Tests on beer brewed with standard hop additions, and hop additions to the first wort

(first runnings) demonstrated an improvement in hop aroma and flavor when hops were added to first runnings. Beer was brewed from identical recipes, except the two doses of hops normally coming last in the hopping schedule were added when the first wort just covered the bottom of the kettle. The first-wort-hopped beers had better foam quality and, according to taste panel members, had better hoppy aroma and more balanced bitterness. The beers also had higher rates of alpha acid isomerization. The scientists conclude that beer aroma and flavor can be improved by reducing or eliminating some hop aroma compounds through first wort hopping. [*Brauwelt*, 1993, 133(2)]

MICRO AND PUBBWERIES

Information provided by the Institute for Brewing Studies, Boulder, Colo. A complete state-by-state list of all breweries and brewpubs in North America is updated quarterly and available from the Association of Brewers for \$5.

OPENINGS

(Since June 17, 1994)

UNITED STATES

Microbreweries

Alaska: Raven Ridge Brewing Co., Fairbanks
California: Covany Brewing Co., Grover Beach; El Toro Brewing Co., Morgan Hill; Heritage Brewing Co., Lake Elsinore; Napa Valley Ale Works, Napa; Old River Brew Co., Bakersfield
Colorado: Bristol Brewing Co., Colorado Springs; Great Divide Brewing Co., Denver
Florida: The Highlands Brewery, Sebring
Illinois: Star Union Brewing Co., Hennepin
Georgia: Marthasville Brewing Co., Atlanta
Massachusetts: Olde Salem Village Brewing Co., Danvers
Michigan: Duster's Microbrewery, Lawton
Montana: Lang Creek Brewery, Marion; Rock'n M Brewing Co., Belgrade
New York: Lake Titus Brewery, Malone
North Carolina: Dilworth Microbrewery, Dilworth; Gate City Brewing Co., Greensboro
Ohio: Crooked River Brewing Co., Cleveland
Oregon: Oregon Trader Brewing Co., Albany
South Carolina: Palmetto Brewing Co., Charleston
Texas: Frio Brewing Co., San Antonio
Washington: Kelly Creek Brewing Co., Bonney Lake; Redhook Microbrewery, Woodinville; Whidbey Island Brewing Co., Langley

Brewpubs

California: Bootleggers, Bakersfield; El Dorado Brewing Co., Stockton; Old Baldy Brewing Co., Upland; Santa Clara Brewing Co., Santa Clara
Colorado: High Country Brewery, Estes Park; Il Vicino Wood Oven Pizza, Salida
Florida: River City Brewing Co., Jacksonville
Illinois: Box Office Brewery, De Kalb; Brewbakers Ale House & Deli, Moline; Mickey Finn's Brewery, Libertyville; Taylor Brewing Co., Naperville

Louisiana: Abita Brewpub, Abita Springs; Pilot House Restaurant & Brewery, Baton Rouge
Maine: No Tomatoes Restaurant/Great Falls Brewing Co., Auburn; Shipyard Brewery, Portland; Sugarloaf Brewing Co., Carrabassett Valley
Massachusetts: The Brewery at 34 Depot Street, Pittsfield
New Mexico: Il Vicino Wood Oven Pizza, Albuquerque; Rio Grande Brewing Co., Albuquerque
New York: James Bay Restaurant Brewery, Port Jefferson; Park Slope Brewing Co., Brooklyn
Tennessee: Market Street Brewery & Public House, Nashville
Texas: Boardwalk Bistro, San Antonio; Fredericksburg Brewing Co., Fredericksburg; Hubcap Brewery & Kitchen, Dallas
Washington: Anacortes Brewhouse, Anacortes; Birkebeiner Brewing Co., Spokane

CANADA

Microbreweries

British Columbia: Bowen Island Brewing Co., Bowen Island

CLOSINGS

(Since June 17, 1994)

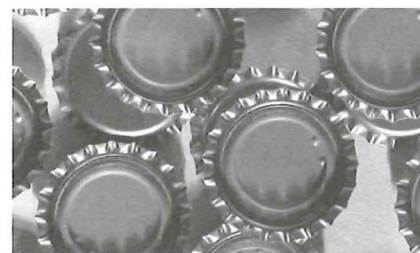
UNITED STATES

Arizona: San Francisco Bar & Grill, Tucson (brewery ceased operations; restaurant still open)

Note the following corrections to the zymurgy Summer 1994 (Vol. 17, No. 2) new brewpubs list:

Maine: Casco Bay, Portland
Oregon: Bandon Brewing Co., Bandon
Tennessee: Smoky Mountain Brewing Co., Knoxville (previously listed as a microbrewery and brewpub.)

Crown Caps Absorb Oxygen



The recent development of oxygen absorbing crown caps (SmartCap®, PureSeal™) has improved the ability to store beer. Using the Mocon test, scientists determined that after 194 days of storage at 68 degrees F (20 degrees C), standard crown caps allowed 1,560 parts per billion to enter (0.002 milliliters per day), while the oxygen absorbing caps allowed 80 parts per billion (0.0001 milliliters per day). After 204 days, the oxygen content of a standard capped bottle of beer was 134 parts per billion and zero in the oxygen absorbing capped beer. The amount of oxygen the beer reacted with was calculated at 1,510 parts per billion for standard caps, 125 parts per billion for absorbing caps. A taste panel preferred the beer stored with an absorbing cap for seven months at 68 degrees F (20 degrees C) to the standard capped beer, and beers stored at 86 degrees F (30 degrees C) were unacceptable. (H.-G. Eils, F. Teumac, and B. Zenner. Proceedings of the European Brewery Convention Congress, Oslo, 1993, pp. 647-654)

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JACKSON ON BEER

Michael Jackson

Finland's Top Brewer in a Brown Study

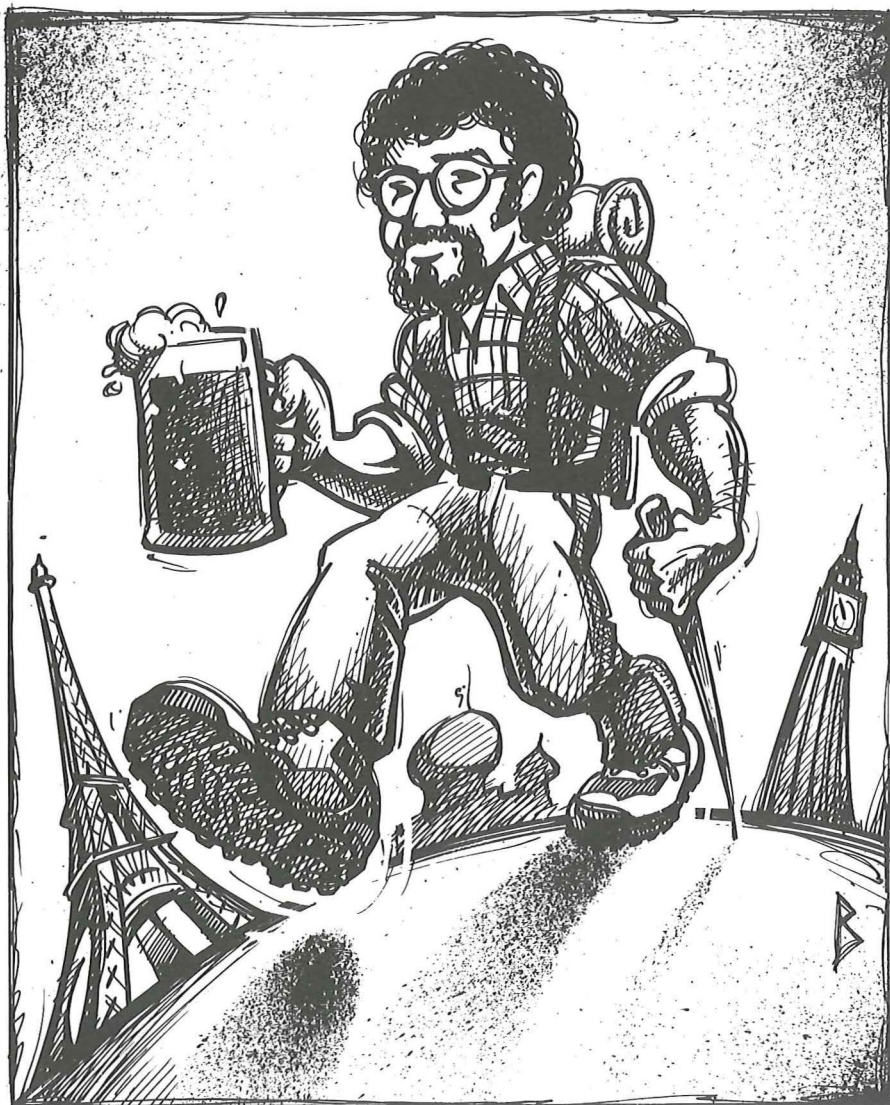
Having lusted over Baltic porters for decades, I shall for the moment leave such devotions to others. Coincidentally, I was in Finland recently where one of the most famous examples, Koff Porter, is produced. On this occasion, though, I was in the snow-blown north to sample a new product from the same brewer — a brown ale.

Koff is short for Sinebrychoff, the name of the Russian who founded the brewery in 1819. In its earliest days, the brewery produced meads, Baltic porter and other top-fermenting beers, but switched to the more modern lagers in 1853.

After Finland's Prohibition at the beginning of the century, Sinebrychoff returned with only lagers, but the porter was reintroduced in the 1950s. In the mid-1980s, the brewery launched a bottom-fermenting approximation of a British ale under the name Cheers, but this was not successful. Being bottom-fermenting, it lacked the true ale character and I suspect that, in any case, Finland was not yet ready for it.

This time, the brewery has made a true top-fermenting ale — and by now the Finns may be prepared for it. In the meantime, they have been introduced to a growing number of imports.

The new product is called Brewmaster's Brown Ale. It has an original gravity of 1.042, is made with a good dash of crystal malt and emerges with an alcohol content of 3.8



percent by weight. It is centrifuged but not filtered, and bottled. It has a color somewhat darker than Newcastle Brown, a touch of malty nuttiness, fruitiness and a lightly acidic finish.

The beer was launched at the old Sinebrychhoff brewery in the heart of Helsinki. This is the oldest commercial brewery site in the Nordic countries, but for the moment it has no production. A brewpub may soon be installed but the principal production has moved to a new site 20 miles north of the city. The Brown Ale represents its first full-fledged launch.

There is a certain piquancy to the notion of an unfiltered example of a 1920s style being the first new product from a brewery that was designed to make lagers at high speed in an advanced system using immobilized yeast.

By the main bus station on Salomon Katu, Helsinki, there were candles and much bric-a-brac in a bar that offers 85 beers, many Belgian. This is called Vastarannan Kiiski, which translates into a joke concerning fish — a Finnish preoccupation. It has a slightly calmer sister bar called Janoinen Lohi (Thirsty Salmon), near the Olympic Stadium.

The week I was there a third branch opened, more in the style of a neighborhood pub, but still with 85 beers, called Hilpea Hauki (Hilarious Pike), near Sornainen Metro.

The owner of these bars, Juha Lehto, buys Dutch furniture and antiques. He lived in the Netherlands for a time, came to admire the "brown cafés" of Amsterdam and married a Belgian. This explains a lot.

Juha also provided much of the furniture for a bar he does not own, William K, in the city center, a restful place for the connoisseur. The main bar is slightly below street level, with stained-glass windows and carpets on the tables in the Dutch style. A few steps lower is an inner bar, with church pews and a reading table. Thirty-odd brews are served under the watchful eye of Olli Majanen. A league-table of the month's best sellers is posted.

Just round the corner in Robertin Katu there is a trendy selection of imported beers with modern art and rock music, at Imamin Keinatuoli, and a similar range with classical music at the Black Door.

The oddest establishment was a barn-like place called Zetor, in the city center,

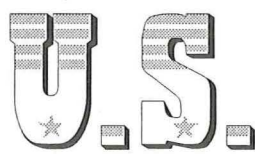
where the servers wore checked shirts and dungarees. Apparently it offers the urbanized young a nostalgic memory of their country heritage, a Nordic version of those "just plain folks" roadhouses in rural America.

I didn't dance. I was too busy eating lake fish baked into rye bread and washing it down with sahti, the strong, spicy-tasting rye- and juniper-beer that country people homebrew in their saunas.

Zetor has its own sauna, too.

Reprinted with permission from What's Brewing, newspaper of the Campaign for Real Ale.

Michael Jackson is internationally the best-known writer on beer. His *Beer Companion* (Running Press, 1994) was recently awarded the 1994 Glen Fiddich Trophy, an honor never before bestowed to a book on beer. His articles, books and documentary videos have introduced beer styles to countless drinkers and brewers outside their native lands. Jackson's use of taste descriptions and accounts of his travels introduced a new genre of writing on beer.



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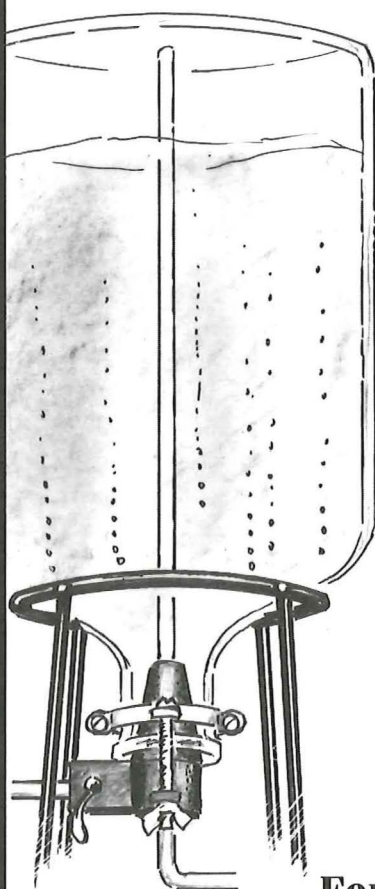
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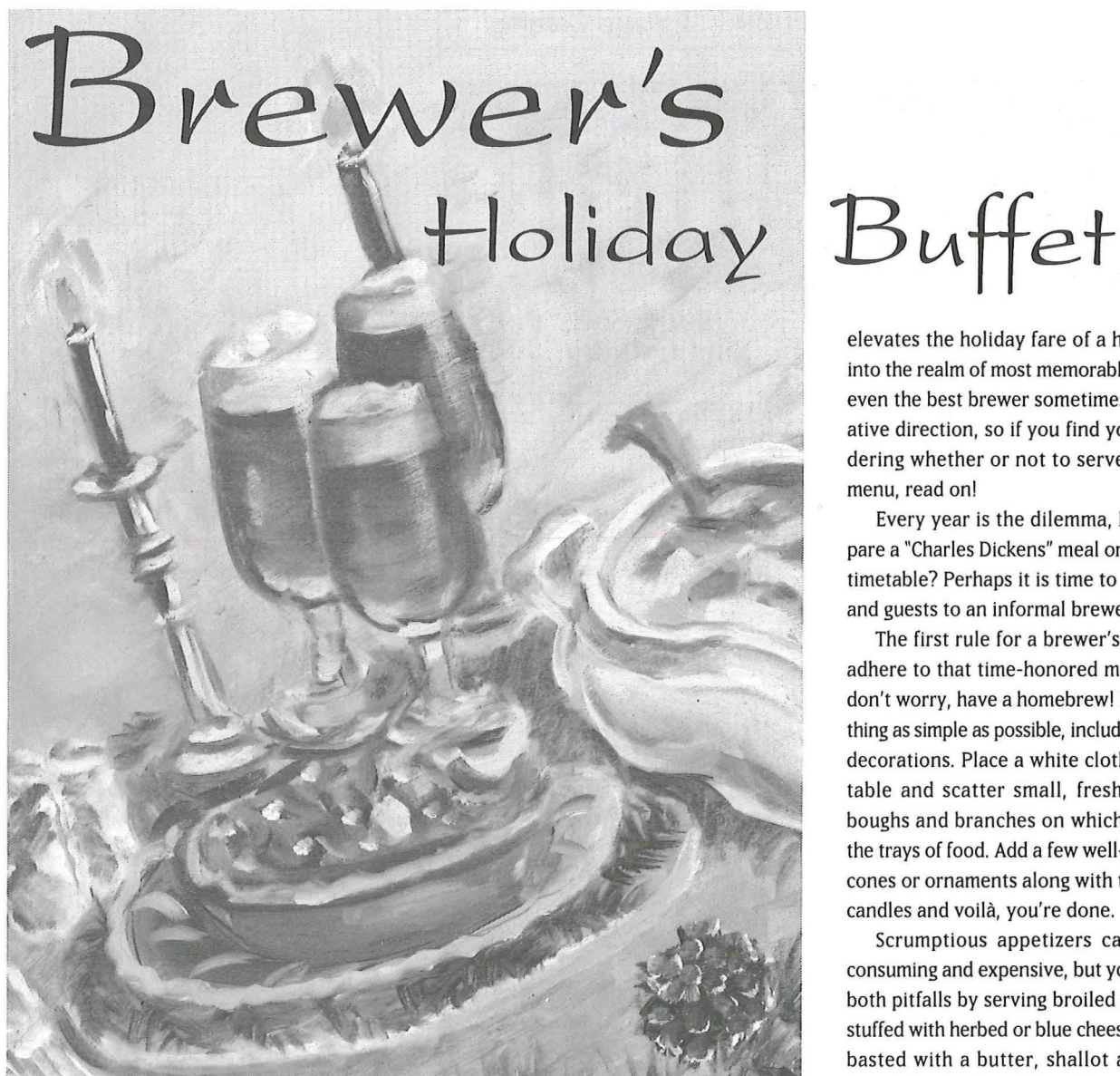
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HOMEBREW COOKING

WITH THE BREWGAL GOURMET

Candy Schermerhorn



Have you ever wondered why a holiday supper at the house of a homebrewer is different from all others? Is it the creative spirit that inspires brewers to present a dazzling array of beer-imbued delicacies, or is it the brewers' passion for fine brew that oblig-

es them to offer only their best beers? Or perhaps it is the joy of sharing that infuses holiday events with the unique passion, warmth and spirit that brewers always seem to radiate.

Undeniably, it is the combination of all (and of course, outstanding homebrew) that

elevates the holiday fare of a homebrewer into the realm of most memorable meals. But even the best brewer sometimes needs creative direction, so if you find yourself pondering whether or not to serve last year's menu, read on!

Every year is the dilemma, how to prepare a "Charles Dickens" meal on a fast-food timetable? Perhaps it is time to treat family and guests to an informal brewer's buffet.

The first rule for a brewer's buffet is to adhere to that time-honored maxim: relax, don't worry, have a homebrew! Keep everything as simple as possible, including the table decorations. Place a white cloth on a large table and scatter small, fresh evergreen boughs and branches on which to cushion the trays of food. Add a few well-placed pine cones or ornaments along with the magic of candles and voilà, you're done.

Scrumptious appetizers can be time-consuming and expensive, but you can avoid both pitfalls by serving broiled mushrooms stuffed with herbed or blue cheese. These are basted with a butter, shallot and Chimay blend that lends a delectable note to their earthy essence. Pass small flutes of Trappist-style ale to sip with these heavenly morsels.

Traditionally, large platters of meat take center stage at a holiday meal. This year lighten the fare with juicy pink carvings of roast tenderloin of beef accompanied by thin slices

of walnut bock rye bread. Surround the platter with dishes of horseradish sour cream (1 1/2 to two tablespoons prepared horseradish per cup of sour cream), marinated tomatoes (sliced and marinated in dressing), thin-sliced sweet onion, herbed mayonnaise (one teaspoon of your favorite herb blend per cup of mayonnaise — marjoram, basil and thyme is a good combination) and beer mustard. Offer a few of your favorite salads and your best porter for a tantalizing presentation.

Of course, even informal affairs deserve a stunning dessert, and none personifies the holiday season like an old-fashioned plum pudding (made weeks ahead of time). Drizzled with brandy, ignited and presented aflame, it will draw smiles of appreciation from even the grinchiest guests. Serve with mounds of softly whipped cream and a holiday spiced ale for a grand finale.

Broiled Stuffed Mushrooms

Serves 12

- 2 to 3 pounds medium to large mushrooms, wiped clean and stems removed
- 1/2 cup Chimay Red, warmed slightly in a saucepan
- 1/2 cup melted butter
- 3 large shallots, finely minced and mashed with 1 teaspoon salt
- 1 teaspoon dried parsley (or chervil)
- 1 teaspoon paprika
- 2 teaspoons lemon zest, finely minced
- 1/4 teaspoon cayenne (optional)
- 1 pound herbed cheese (chèvre, cream cheese, gorgonzola or blue)

(1) Place mushrooms stem-side up in a casserole dish. Stir together the Chimay, butter, shallots, parsley (or chervil), paprika and zest. Pour over the mushrooms and let sit for 1 hour. Drain and reserve marinade.

(2) Stuff the mushrooms with cheese and place six inches under the broiler for seven to eight minutes, basting frequently with the remaining marinade. Remove and garnish with additional paprika, if desired. Serve hot or warm.

Roast Tenderloin of Beef

To roast this lean cut of meat, it is necessary to "lard" the roast to keep it moist during cooking. The lean meat is covered with a layer of fat or bacon during the first two-thirds of the roasting period.

- 1 beef tenderloin (allow 6 to 8 ounces per person)
- 1/2 cup Märzen beer
- 1/3 cup extra virgin cold pressed olive oil
- 1/4 cup bottled steak sauce
- 1/4 to 1/2 teaspoon ground red pepper flakes
- 4 cloves of mashed garlic
- 2 teaspoons dried thyme
- 1 scant teaspoon freshly ground black pepper
- 1/2 tablespoon kosher salt (optional)
- fat for larding (1/3-inch-thick sheets of beef fat or bacon for wrapping) and cooking twine

(1) Combine the beer, olive oil, steak sauce, herbs and spices, except salt. Pour the mixture over the tenderloin and marinate for five to six hours in the refrigerator, turning to keep coated.

(2) Remove roast and let sit at room temperature for 45 minutes. Rub the roast with salt.

(3) With cooking twine, tie the fat onto the marinated meat or drape the entire roast with slices of uncooked bacon. Place the meat on a greased roasting rack in a shallow pan.

(4) Place the roast in the center of a preheated oven at 475 degrees F (246 degrees C)

and roast, allowing about 10 minutes per pound. When the internal temperature reaches 115 degrees F (46 degrees C), remove the roast from the oven.

(5) Carefully remove the fat or bacon with kitchen scissors and tongs, then baste with the remaining marinade and return to the oven. Allow to brown and reach an internal temperature of 125 degrees F (52 degrees C).

(6) Remove from oven and place roast on a platter. Cover with foil and allow to cool completely before slicing. This can be prepared a full day ahead and refrigerated whole.

Walnut Bock Rye Bread

Makes 2 loaves

- 2 1/2 cups medium or dark rye flour
- 2 cups bock, warmed to 110 degrees F (43 degrees C)
- 2 tablespoons bakers yeast
- 1/2 cup sour cream
- 2 tablespoons melted butter
- 1 egg
- 1/3 cups dark brown sugar
- 2 tablespoons caraway seed
- 1 tablespoon orange zest, finely minced
- 2 teaspoons salt
- 1 1/2 cups walnut pieces, toasted in a 350-degree-F (177-degree-C) oven for 12 minutes
- 4 to 5 cups white bread flour
- 1 egg white mixed with 1 tablespoon warm honey

(1) Place one cup of the rye flour in a large bowl and stir in the dry yeast. Pour warm beer over the mixture, whisking thoroughly. Cover and allow to rest in a warm place for 15 to 20 minutes.

(2) Stir the sour cream, butter, egg, brown sugar, caraway, orange zest and salt into the flour mixture, whisking until combined. Stir in the remaining rye flour.

(3) Add the walnuts and stir in the remaining bread flour 1 cup at a time until the dough pulls away from the bowl. Knead vigorously, adding only enough flour to prevent the dough from sticking, until smooth and elastic. Lightly rub a large bowl with oil. Press the dough into the bowl and turn it over, coating the entire surface of the dough with the oil.



Cover and let rise in a warm place until doubled, 60 to 90 minutes. Punch down, divide in half and let rest five minutes, covered.

(5) Form the dough into standard, round or oblong peasant loaves. Place on parchment paper, put into loaf pans (or cookie sheet for peasant loaf), cover and allow to rise until doubled. Brush the tops with egg white and honey.

(6) Lightly score the tops with a sharp serrated knife. Bake in a preheated 350-degree-F (177-degree-C) oven for 30 to 35 minutes, until the top is deep golden and the bottom is well-browned. Cool thoroughly before slicing.

Pubican's Plum Pudding

Serves 10 to 12

- 1 1/2 cups cake flour
- 1 1/2 teaspoons cinnamon
- scant teaspoon ginger
- scant teaspoon cloves
- scant teaspoon baking soda
- 1/2 teaspoon salt
- 1 cup Lyles Golden Syrup*
- 1/3 cup barley wine or Belgian strong ale
- 15 tablespoons butter, room temperature
- 3/4 cup dark brown sugar
- 3 extra large eggs
- 1 cup currants soaked in berry brandy
- 2/3 cup chopped dried apricots soaked in peach or apricot brandy
- 2/3 cup chopped dates
- 1/2 cup flour
- 1/2 cup toasted walnuts
- 1 cup hazelnuts, toasted, peeled and chopped
- 1/4 cup faro or guezue
- 1/4 cup fruit brandy such as Grand Marnier for flambéing

* Lyles Golden Syrup, an English export, can be found in specialty groceries.

(1) Whisk 1 1/2 cups flour, spices, baking soda and salt in a small bowl and set aside. Combine 3/4 cup Lyles Golden Syrup and barley wine in a separate bowl and set aside.

(2) Beat the butter and sugar until very light and fluffy. Add the eggs and beat for an additional minute. Stir the flour and Lyles mixtures alternately in thirds into butter and sugar mixture. Beat for 1 minute.


(3) Coat the currants, apricots and dates in flour then stir the fruits and nuts into the

batter. Divide into two small or one large generously buttered pudding or bundt mold. Place molds in a large pan filled 2 inches deep with hot water. Place a buttered "lid" over each cake (the bottom to a springform pan works well) and place in a preheated 350-degree-F (177-degree-C) oven.

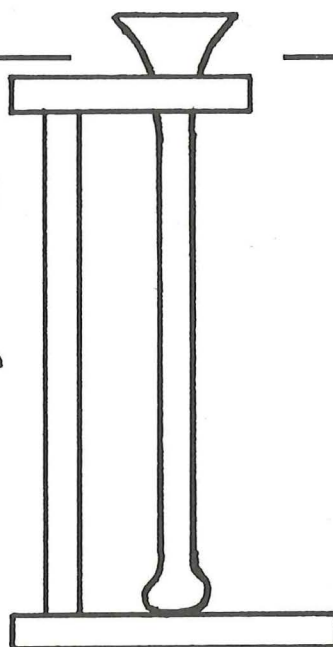
(4) Bake about 45 minutes for small bundts, 75 minutes for large bundt or until a pick inserted into the middle of the pudding comes out clean. Cool for 15 minutes before unmolding. Combine the 1/4 cup Lyles Golden

Syrup and faro beer. Baste the pudding with the mixture, wrap and allow to absorb. Reapply this mixture as often as necessary.

(5) When ready to serve, carefully flambé with 1/4 cup or so warmed Grand Marnier.

Candy Schermerhorn is a culinary consultant and televised cooking personality in the Phoenix, Ariz., area. Candy takes great joy in educating the public about beer and its culinary potential through her classes. She is author of the award-winning *Great American Beer Cookbook* (Brewers Publications, 1993). 

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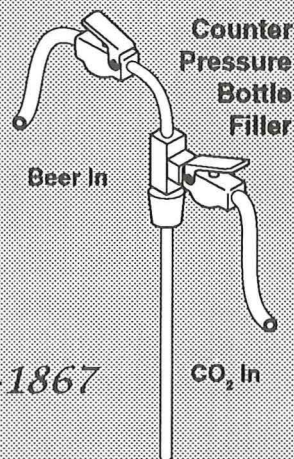
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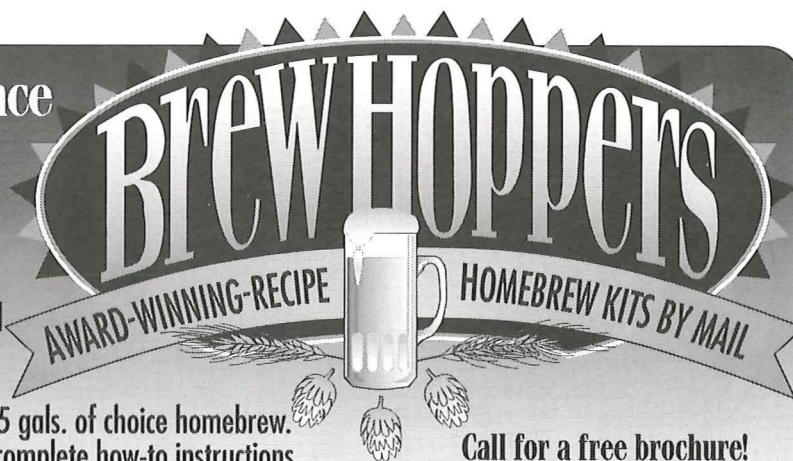
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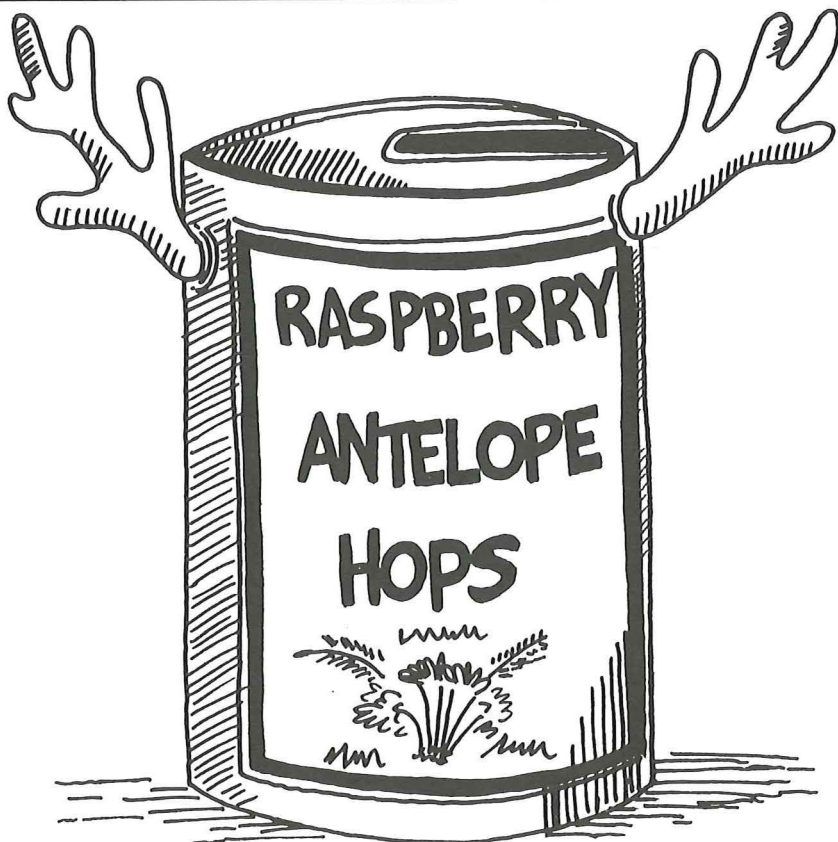
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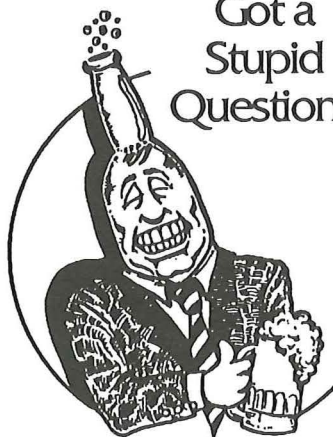
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TIPS & GADGETS

Peter Van Zile

Constant Temperature Bath

For most homebrews wintertime is serious brew time. But if cool temperatures or temperature fluctuations cause you to worry, here is a simple solution. A constant temperature bath gives control over your fermenting environment and also the benefit of fermenting your ales at almost any specific temperature.

Materials List

- 1 72- or 96-quart insulated plastic cooler
- 1 submersible aquarium heater (50 to 100 watts)
- 1 LCD thermometer (I use a Radio Shack catalog #63-854)
- Styrofoam™ packing peanuts

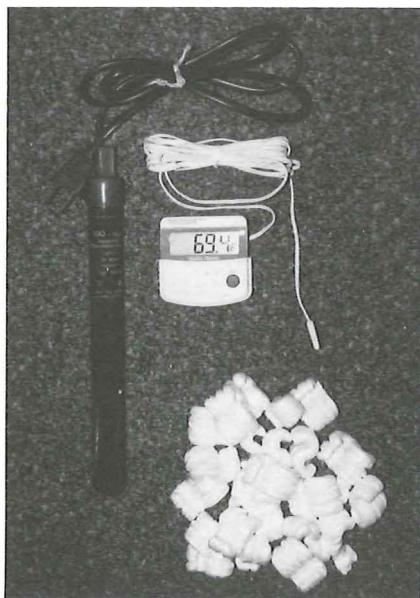
To set up a constant temperature bath, remove the lid of a large cooler. Two 7.5-

gallon pails or two five-gallon carboys will easily fit inside. Add enough water to the empty cooler so the level is a few inches below the top when the fermenters are placed inside. Use a fully sealed adjustable and submersible aquarium heater (50 to 100 watts) to heat and maintain the water temperature. Dial the thermostat to the desired fermentation temperature and allow the water temperature to stabilize. The heater will cycle to maintain the temperature setting. Drop the thermometer's probe into the water and monitor the temperature on the large LCD display. Add

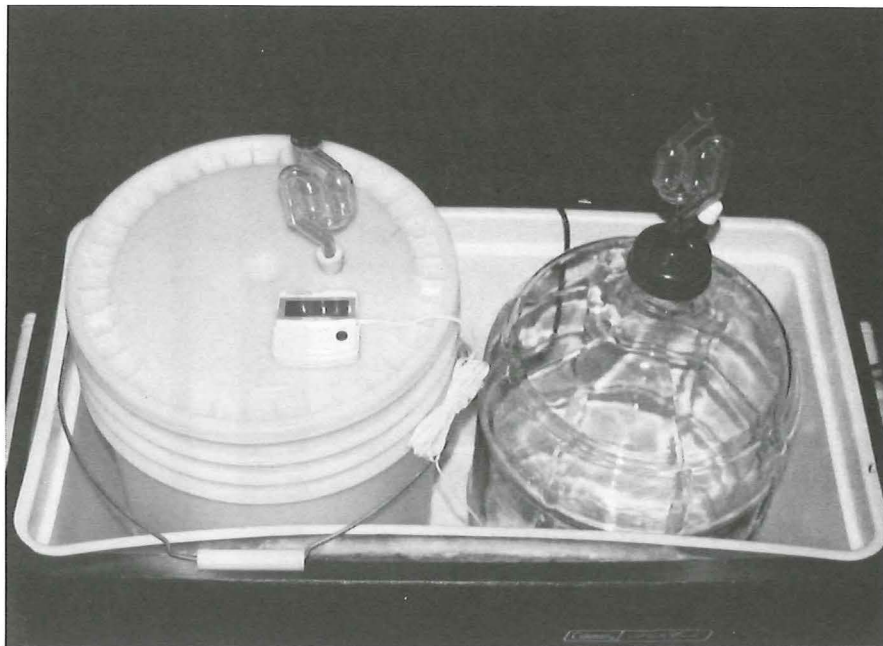
your fermenters to the bath and top with Styrofoam packing peanuts as a flexible, floating insulation layer on the water's surface. Not only does this cut down heat loss, but it minimizes evaporation. This setup will maintain a stable fermenting environment and resist air-induced temperature changes.

Warning: Keep children and pets away from the setup.

Peter Van Zile, of North Arlington, N.J., is a pharmacist who began brewing two years ago after a friend introduced him to the hobby.



In addition to a large plastic cooler, you'll need (from left) submersible aquarium heater, LCD thermometer and packing peanuts.



The constant temperature bath setup will accommodate two fermenters.

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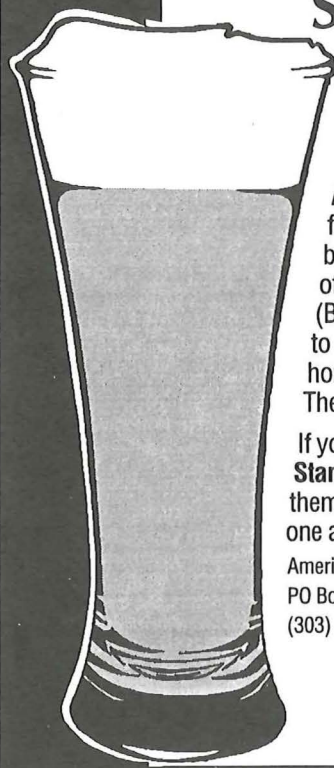
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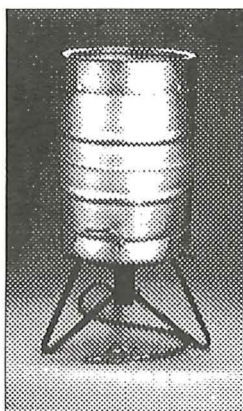
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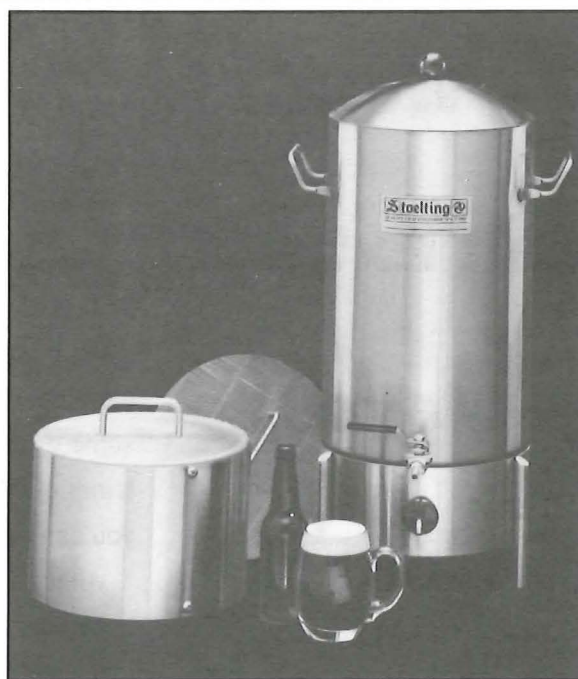
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Malt Extract

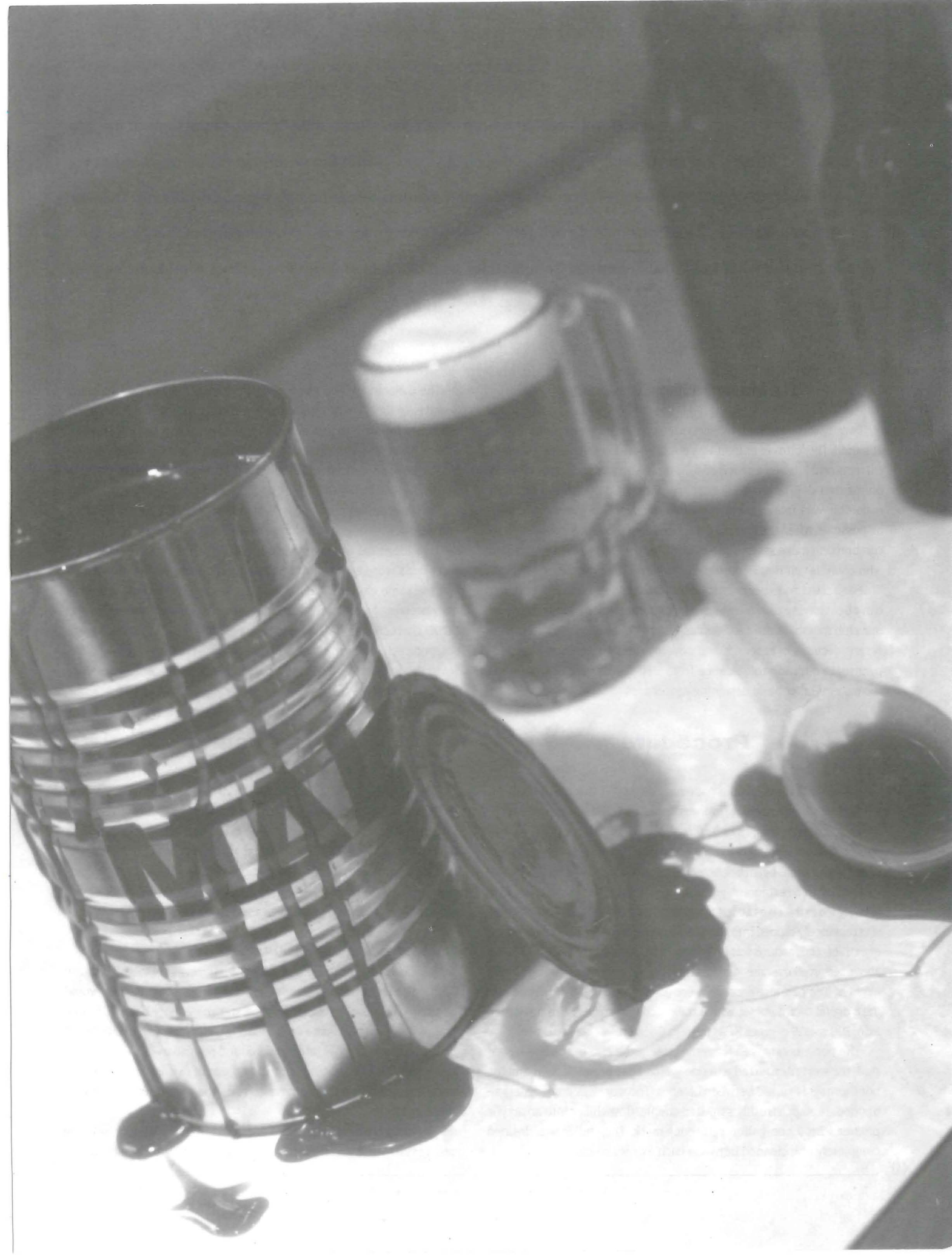
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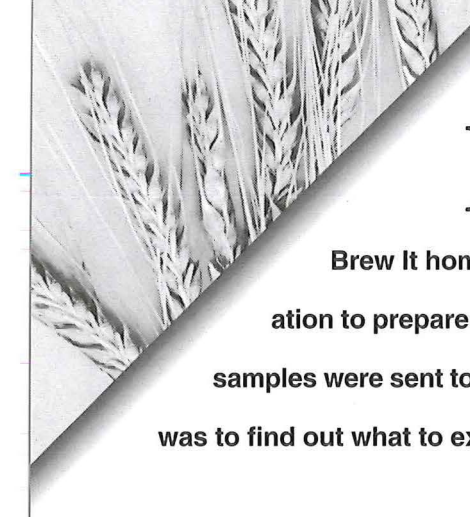
Most of It



Homebrewers everywhere are striving to improve their beers. We have an unprecedented variety of ingredients, suppliers, publications and seminars. Homebrewers are devouring information as fast as they get it. But there seems to be a black hole of sorts when it comes to information on some of our raw materials. Study the label next time you pick up a container of malt extract. What can you tell about the contents? Chances are you can't tell a great deal.

Almost every brewer I know started out using malt extracts, and all-grain brewers use extracts to make starters, adjust original gravities or turn a bock into a doppelbock, so there are a lot of us who want to know what's in that can. Malt extracts are expensive because ingredients, processing, packaging and transportation all cost money. The materials used and the concentration techniques are but two causes of variation between products. Yet from outside the can two malt extracts may look quite alike.





In an effort to peel away the labels and shed a little light, the members of the Just Brew It homebrew club in Bartlesville, Okla., worked with the American Homebrewers Association to prepare and sample 20 commercial malt extracts under homebrewing conditions. The wort samples were sent to Siebel Institute of Technology in Chicago for analysis. The point of this experiment was to find out what to expect in general from modern malt extracts and kits in a typical homebrew setting.

Setting the Scene

Twenty different malt extracts were prepared one gallon of wort at a time. The leftover extract was put to good use, of course. The malt extracts and kits were processed on three successive Sundays (seven on the first day, seven on the second and six on the last) in order to make the work manageable and allow as many club members to help as possible. After the samples were collected, unused extracts were combined to make several composite beers; a fitting reward. After all, who could let all that nascent beer go down the drain?

For access to experimental know-how and equipment, you just can't beat having club members who experiment for a living. Many of our club members are technicians, scientists or engineers who represent decades of research and development experience. Their expertise, in addition to guidance from Siebel, was very helpful in selecting equipment and designing procedures.

Procedure

Each extract was given a code number keyed to a master list. All work after sample preparation was done using the code numbers.

Each container (can, kit or bag) was opened and one pound (454 grams plus or minus one gram) of extract was collected. All weights were determined with a triple-beam balance. One gallon of preheated distilled water was added to a restaurant-grade, two-gallon cast aluminum pot. The preweighed extract was added to the pot. The cup used to hold the extract was repeatedly dipped into the heating water in order to get every drop of extract. The mixture was brought to a boil (at approximately 300 feet above sea level) over medium heat and kept at a gentle rolling boil for 50 minutes. Temperature readings were taken at 15, 30 and 45 minutes using a digital thermometer with a thermocouple probe. Readings varied from 208 to 209 degrees F (98 degrees C), but never above or below.

The pot was removed from the heat at the end of the boiling period, the wort transferred to a one-gallon heat-proof glass jar and the pot thoroughly rinsed between batches. The wort was immediately siphoned through a freshly sanitized counterflow chiller into an acrylic pitcher with a one-gallon reference mark. The chiller was drained completely and cleaned between each extract batch.

The collected wort was topped up with distilled water (the same brand each time) to the one-gallon mark and gently stirred. One sample was withdrawn to measure specific gravity and a second 250-milliliter sample was withdrawn to an HDPE (high density polyethylene) plastic bottle sanitized with iodophor. As per Siebel's instructions, one milliliter of chloroform was added with a syringe to each jar as a preservative/antimicrobial. The sample was capped, lightly agitated and kept refrigerated until shipment the following day.

Two identical pots were used to streamline the process. Two wort boils were going at a time, staggered because we wanted to use the same chiller. Specific gravity was measured with an ordinary brewing hydrometer (calibration with distilled water showed 1.000 corrected to 60 degrees F or 15.5 degrees C). Samples were shipped each Monday, the day after brewing, via next day air. Siebel froze the samples and held them until all 20 were received before doing any analyses.

The Results

The test results for all of the malt extracts are shown in Table 2. Siebel analyzed for extract, pH, acidity, color, iron, reducing sugar, nitrogen and free amino nitrogen (FAN). The extracts are grouped by type: liquid, dry or kit. Some of the test results give two values. The first is the actual test result, the numbers in the columns titled "compensated" have been compensated for differences in wort specific gravity. Let's look at each test and how the results can affect your beer.

Compensating the Results

Because most recipes target a specific starting gravity and because each malt extract had a different extract potential, we thought it would be useful to look at making the same starting gravity beer with each one. What if we had made an 11° Plato (1.044) wort with each extract instead of using the flat rate of one pound per gallon? How would the test results look? That would put all of the malt extracts on equal footing. Fortunately we do not have to redo the experiment to answer these questions.

The properties Siebel tested are concentration dependent. The test results for a given extract are proportional to the amount of

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malt extract used to make the wort. Twice as much malt per gallon would give twice the results for FAN or nitrogen. A simple ratio of 11.0 to the extract percent will give the conversion factor for each malt extract. The conversion for extract number 1008 would be 11 divided by 8.89 which equals 1.2373. The factor for extract 1011 would be 0.9532 (11 divided by 11.54). The numbers in the columns labeled "compensated" were created by multiplying the raw test results by the conversion factors. Thus, the FAN of 140.0 for extract number 1008 is compensated to 173.23 (140 times 1.2373).

We chose 11.0 degrees Plato (1.044) because it is a typical starting gravity and gives an idea of what to expect in a real homebrewing situation. We did not compensate the results for pH because the effect would be negligible, or the results for color because there is no way to do so with accuracy. Adjusting the results in this way helps make up for the concentration advantage of the dry extracts and for the various dilution instructions in the kits.

Extract and Specific Gravity

Extract is the basic measurement of fermentable material in the wort expressed as weight percent dissolved sucrose or degrees Plato (or Brix). Sucrose is the standard reference because it gives a larger increase in specific gravity than other sugars ensuring that results are always below 100 weight percent to avoid confusion. Specific gravity of the samples ranged from 1.028 to 1.046. Keep in mind that each of the extracts will contain a different amount of water depending on how much water the manufacturer wanted to remove before packaging. The liquid extracts will contain about 20 percent water by weight. The dry extracts will be closer to 1 percent water by weight, thus pound-for-pound the dry extracts will contain more fermentable material than liquid extracts.

Because the worts were all prepared at the rate of one pound extract per gallon of water, they can be compared directly with the general values for grains and extracts in *The New Complete Joy of Home Brewing* by Charlie Papazian (Avon Books, 1991), see Table 1.

Dry extract number 1013 could be used at the rate of one pound per gallon of water to make an amber ale with a starting gravity of

1.044. You get 44 specific gravity points per pound per gallon with this extract. The number to the right of the decimal point is the specific gravity yield. Expressed in degrees Plato, this quantity is called extract potential. Extract 1013 has 11.03 degrees of extract potential at the rate of one pound malt extract per gallon of water.

Knowing the specific gravity yield, it's easy to estimate starting gravity with the following formula.

$$SG = \frac{\text{points per pound per gallon} \times \text{pounds}}{1,000 \times \text{gallons}} + 1.0$$

This is an important mathematical relationship for brewers to know. Thus, 6.75 pounds of extract number 1001 would give a starting gravity of 1.050 for a five-gallon batch of wheat beer $37 \times 6.75 \div 5,000 + 1.0$. Later we'll see how to calculate the amount of extract needed to adjust starting gravity.

If you have a hydrometer, you can check the specific gravity of your wort. Specific gravity can be converted to degrees Plato by dividing the last two digits to the right of the decimal point by 4. Take the specific gravity measurement at 60 degrees F (16 degrees C) or

One pound of the following ingredients and water to make 1 gallon will (approximately) yield the specific gravity indicated.

Ingredient	Specific Gravity	(Balling)
Corn sugar	1.035 - 1.038	(9 - 9.5)
Malt extract (syrup)	1.030 - 1.038	(8 - 9.5)
Malt extract (dry)	1.038 - 1.045	(9.5 - 10.5)
Malted barley*	1.025 - 1.030	(6 - 7.5)
Munich malt*	1.020 - 1.025	(5 - 6)
Dextrine malt	1.015 - 1.020	(4 - 5)
Crystal malt	1.015 - 1.020	(4 - 5)
Grain adjuncts*	1.020 - 1.035	(5 - 9)

*These grains must be mashed to obtain the indicated extract.

adjust the reading if taken at higher temperatures. Greg Noonan's *Brewing Lager Beer* (Brewers Publications, 1986) has a hydrometer correction table on page 263.

pH

The acidity or alkalinity of a solution can be expressed as pH on a scale from one (highly acidic) to 14 (highly alkaline). pH is the natural logarithm of the hydrogen ion concentration in the wort. The pH of an all-barley malt wort will naturally fall in 5.0 to 5.5 range with no need

for adjustment. Yeast activity will quickly drop the pH to the mid-4s, which helps protect the fermenting beer from some bacterial infections.

Several of the worts had a pH below 5.0. This is not a problem and does not require corrective action. The low pH may be perfectly natural. The extract producer may have acidified the mash during production or may have used dark specialty grains (chocolate malt, black malt) either of which can lower wort pH.

Note that hop utilization (how much bitterness is achieved in the beer) decreases as pH decreases. A pH below 5.0 may require addi-

TABLE 2. MALT EXTRACT ANALYSIS RESULTS

Sample Number	Extract Name	Extract %	Specific Gravity	pH	Acidity as % Lactic Acid	Acidity, Compensated	Iodine Reaction	Color, degrees SRM	Iron, ppm	Iron, Compensated	Reducing Sugar, %	Reducing Sugar, Compensated	Nitrogen, %	Nitrogen, Compensated	FAN, ppm	FAN, Compensated
LIQUID MALT EXTRACT																
1007	Alexander's Hopped Extract	7.09	1.028	4.8	0.06	0.09	negative	4.5	0.02	0.03	4.16	6.45	0.05	0.08	92.00	142.74
1015	Alexander's Sun Country Pale Malt Extract	8.26	1.033	4.2	0.13	0.17	negative	4.8	0.22	0.29	4.45	5.93	0.05	0.07	113.00	150.48
1017	Irek's Munich Amber Unhopped	8.98	1.036	5.0	0.17	0.21	trace	21.3	0.29	0.36	6.33	7.75	0.09	0.11	172.00	210.69
1014	Irek's Munich Light Unhopped	8.87	1.035	5.2	0.14	0.17	trace	10.0	0.13	0.16	6.31	7.83	0.08	0.10	158.00	195.94
1008	Mountmellick Products, Ireland, Unhopped Light	8.89	1.035	5.4	0.11	0.14	negative	7.5	0.12	0.15	7.09	8.77	0.07	0.09	140.00	173.23
1001	Premier Reserve Gold Label Brewer's Wheat Malt Extract	9.33	1.037	5.1	0.18	0.21	negative	8.1	0.07	0.08	6.48	7.64	0.11	0.13	205.00	241.69
1004	Premier Reserve Gold Label Unhopped Malt Extract	8.98	1.036	5.3	0.16	0.20	negative	9.7	0.16	0.20	6.56	8.04	0.09	0.11	225.00	275.61
DRY MALT EXTRACT																
1013	Northwestern Extract Co. Amber Dry Malt Extract	11.03	1.044	5.1	0.16	0.16	negative	24.7	0.13	0.13	7.68	7.66	0.11	0.11	223.00	222.89
1019	Northwestern Extract Co. Dark Dry Malt Extract	10.98	1.044	4.5	0.18	0.18	negative	54.5	0.51	0.51	6.89	6.90	0.10	0.10	203.00	203.37
1011	Northwestern Gold Dry Malt Extract	11.54	1.046	5.3	0.18	0.17	negative	12.2	0.05	0.05	7.51	7.16	0.11	0.10	225.00	214.47
1002	Premier Dia Malt Light Dry Malt Extract	10.98	1.046	5.3	0.17	0.17	negative	10.0	0.01	0.01	7.20	7.21	0.09	0.09	163.00	163.30
LIQUID MALT EXTRACT KITS																
1006	Armstrong New Zealand Premier Lager Kit	9.18	1.037	5.0	0.14	0.17	trace	14.8	0.11	0.13	6.43	7.70	0.07	0.08	152.00	182.14
1016	Black Rock New Zealand East India Pale Ale Kit	9.01	1.036	5.1	0.14	0.17	trace	10.6	0.13	0.16	6.11	7.46	0.07	0.09	134.00	163.60
1005	Cooper's Australian Brewery Bitter Kit	8.84	1.035	5.2	0.10	0.12	negative	24.6	0.07	0.09	6.44	8.01	0.06	0.07	120.00	149.32
1012	Cooper's Australian Brewery Stout Kit	8.87	1.035	4.9	0.13	0.16	negative	86.5	0.13	0.16	5.91	7.33	0.07	0.09	153.00	189.74
1003	Edme Superbrau Gold Weizen Lager Wheat Bier	9.27	1.037	5.4	0.15	0.18	negative	14.8	0.40	0.47	6.70	7.95	0.11	0.13	191.00	226.65
1009	Edme Superbrau Pale Lager	8.90	1.035	5.3	0.10	0.12	negative	10.6	0.11	0.14	6.98	8.63	0.07	0.09	127.00	156.97
1010	Mountmellick Products, Ireland, Brown Ale Kit	8.82	1.035	5.1	0.13	0.16	negative	38.2	0.03	0.04	6.40	7.98	0.07	0.09	133.00	165.87
1018	Munton's Gold Docklands Porter	8.88	1.035	5.0	0.12	0.15	negative	54.2	0.09	0.11	5.73	7.10	0.08	0.10	142.00	175.90
1020	Munton's Gold Imperial Stout	8.78	1.035	4.9	0.14	0.18	negative	120.1	0.06	0.08	5.62	7.04	0.08	0.10	133.00	166.63

Note: Because the actual gravity for one pound of dry extract per gallon of water is very close to the reference of 11 °Plato, the compensated test results are nearly equal to the raw test results. This is just a coincidence.

tional bittering hops to get your usual result. Lower pH worts may yield a rounder, more well-defined malt character, but this is highly subjective. Experiment with wort pH and decide for yourself. If you like the results, food-grade lactic or phosphoric acid may be used to acidify wort. Both of these acids are naturally occurring in beers. Exercise caution when handling phosphoric acid.

You can test the pH of your own wort at home. pH test strips are available for the typical brewing range of 4.0 to 6.0 from laboratory suppliers or beer and wine supply stores.

Acidity

Acidity can be expressed in units other than pH. In this test, an alkaline solution (such as dilute sodium hydroxide) is added to counteract the acidity of the wort. This is called titration. The amount of acid can be calculated from the amount of alkaline solution added. Acidity in the wort may be naturally occurring from dark malts or the result of bacterial infection. A stout kit may have a higher acidity, or lower pH, than a pale lager kit. Acidity above 0.3 weight percent as lactic acid can indicate bacterial infection.

Titration kits are available at beer and wine supply stores so you can determine wort acidity at home.

Iodine Reaction

Remember this test from chemistry class? Drop iodine from the medicine cabinet on a potato slice and look for dark blackish-purple signaling the presence of starch. Yeast will not process starch. The starch will remain in the finished beer making for a hazy final product with poor flavor stability. Although it was surprising to see four out of the 20 extracts tested give a slight starch reaction, Dr. Joe Power of the Siebel Institute did not believe this would be a problem in homebrewing use. A trace reaction indicates that the presence of starch was just barely discernible.

Get some iodine from the drug store and try this test yourself. Siebel fills a test tube with wort and carefully adds a layer of iodine on the surface of the wort. Hold it up to the light and note any blackish-purple color change. Pour the test tube's contents down the sink, not back into the boil pot.

Color

In degrees SRM (Standard Research Method), color tells you whether you can expect to create a pale ale (8 to 10 SRM) or a stout (35 and up). Lower numbers in degrees SRM indicate a lighter color. Amber or dark extracts will get higher values. The lightest colored extracts were none too light for a Pilsener (2 to 5). Our standardized dilution of one pound extract per gallon is fine for making a comparison between extracts but might not be the actual dilution recommended for a kit.

I do not know of any rules of thumb for estimating color based on blending extracts or using different amounts of the same extract. The best option is to check the color of the wort before the boil using the techniques described in the chapter by George Fix in *Evaluating Beer* (Brewers Publications, 1994) pages 133 through 141.

Iron

An all-malt wort will typically contain some iron. About 0.05 parts per million (ppm) is typical. This is a really small amount. Thinking of percent as parts per hundred may help understand ppm. One percent is 10,000 ppm. Iron can be introduced from a rusty can or rusty brewing gear or even from your tap water. Iron in wort is mostly a negative. High iron content can cause oxidation haze in

the finished beer, and can also promote the oxidative production of diacetyl from acetalactic acid (more on diacetyl later). Iron can usually be tasted in amounts greater than 0.15 ppm, according to Ted Konis in *Evaluating Beer*.

Yeast will absorb some iron from the wort. Joe Power reports that yeast can cope with iron levels as high as 0.2 ppm. Greg Noonan in *Brew Free or Die* (Brewers Publications, 1991) states that iron levels in brewing water greater than 0.3 ppm will damage yeast. Iron levels greater than 0.3 ppm in the wort are undesirable.

The high iron levels in some of the extracts are a cause for concern, especially since the

brewer cannot correct for this defect. A review of our procedure, equipment, water and schedule showed no common element for the high-iron extracts. Furthermore, all of the original containers appeared to be in good condition with no damage or rust. Possible sources of iron from the extract manufacturing process are equipment and brewing water.

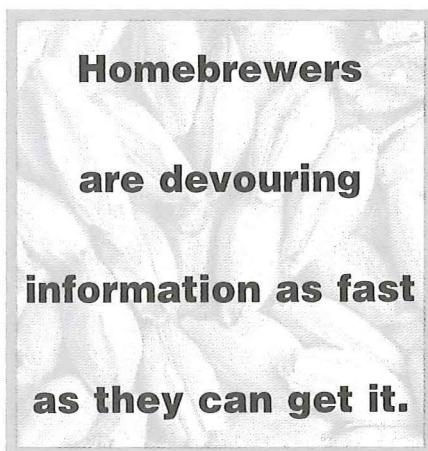
If you want to check the iron in your water or your wort, Hach (Box 608, Loveland, CO 80539-0608, (800) 277-4224) makes an iron test kit (#25100-25) good for 25 tests in the 0 to 1.0 ppm range.

Reducing Sugar

This quantity indicates how much fermentable material is in the wort and hints at its character. The analytical method used is adequate for comparison purposes but does not give an absolute number you can hang your hat on. A 2 percent difference between extracts is considered significant. All sugars will register to some extent and the test is twice as sensitive to glucose as maltose and dextrins. Thus, an adulterated extract, an extract to which sugar has been added, would give a much higher number than an all-malt extract. A highly adulterated extract (20 percent glucose) would give a reducing sugar result of 10 percent in an 11° Plato wort.

Malt extract is the largest single cost in a batch of beer and it's natural to want as much malt for your money as you can get. Concern over adulteration of malt extract is supported by a University of Saskatchewan report by Paik, Low and Ingledew. The detailed study found adulteration even in extracts labeled "all malt."

While you cannot test directly for reducing sugar at home, you can test for the presence of other sugars, such as glucose. Glucose test strips (designed for use by diabetics) are available at most pharmacies and can be used to check your wort at home. Be sure the strips you buy are selective for glucose.



Nitrogen and FAN

The nitrogen test results give the total nitrogen in the wort. The nitrogen exists in the form of proteins and amino acids. Free amino nitrogen (FAN) is a measure of amino acid nitrogen. Only the nitrogen contained in the amino acids is usable by the yeast. Amino acids, the building block of proteins, are organic acids containing an NH_2 group. A typical brewing wort will have a FAN in the 240 to 275 ppm range. A FAN of 150 ppm is the minimum acceptable.

Ingredients have an important effect on the amount of nitrogen and FAN in an extract wort. Malting procedure, mashing temperature program and the variety of barley malt all play a part. The amount of malt may be the overriding factor. Use more malted barley, get more FAN. Wheat has a higher protein content than barley, so using wheat will significantly increase the nitrogen and FAN, as you can see by looking at the numbers for the two wheat extracts.

FAN for most of the extracts tested lower than 200 ppm and well below the normal range for an all-malt wort. There are a number of possible reasons for the low FAN numbers. The effects of malting and mashing techniques and variety of barley have already been mentioned. Heavy use of adjuncts, like rice, corn or sugar, can result in a lower FAN because those adjuncts contribute poorly if at all to the FAN pool. Lastly, protein and FAN are lost in the process of making the malt extract. Wort is normally whirlpooled and filtered after the boil and before concentration to remove trub, which harbors spoilage organisms. While this step increases stability and lowers the risk of bacterial contamination, it results in the inevitable loss of some material we would rather have in the wort.

Brewers care about FAN because low free amino nitrogen is a cause of off-flavors. Not all amino acids are equal in the eyes of your yeast. At low FAN levels, yeast is forced to use the less desirable amino acids resulting in higher levels of off-flavors in the finished beer. Low FAN also contributes to slow fermentation starts and incomplete fermentation (Paik et. al.; Lodahl).

Diacetyl may be the most noticeable off-flavor to result from low FAN, according to George Fix. Diacetyl is a ketone, one of many byproducts of fermentation. Its buttery or butterscotch flavor and aroma can be okay at low levels but becomes unpleasant at high levels and as beer ages. Diacetyl is inappropriate in many beer styles, especially many lagers. Unfortunately, lager yeasts are more sensitive to low FAN than are ale yeasts. Avoid the use of continental lager yeasts with low FAN worts.

There are effective measures you can take to increase FAN in your extract brewing. If a kit calls for additional sugar, add dry malt extract instead. Sugar contributes no FAN. Liquid malt extracts can be used,

but dry extracts are easier to handle. The more adventurous can do a partial mash with a pale malt. About two pounds of barley malt in addition to the kit for a five-gallon batch will increase FAN by 60 ppm.

Whether you brew from kits or from your favorite recipe, you can do what some big brewers do: ferment a strong wort and then dilute to the desired final strength. A given amount of malt extract contains a given amount of FAN. The less you dilute the extract with

water, the greater the FAN concentration will be. To do this at home, brew your regular extract recipe adding only enough liquid to bring the fermentation volume up to three gallons. Ferment as usual and then dilute the batch to five gallons with boiled/chilled water at bottling time. Boiling three gallons instead of five will increase FAN levels in the fermenter while sacrificing some hop utilization because of the lower volume/higher gravity boil. The higher gravity boil is likely to be no greater than the gravity equivalent of a barley wine. If you employ a mini-mash to boost FAN, include a 30-minute protein rest at 120 to 135 degrees F (49 to 57 degrees C) before raising

the temperature to 150 degrees F (66 degrees C) for conversion.

I could not find a practical nitrogen or FAN test for home use.

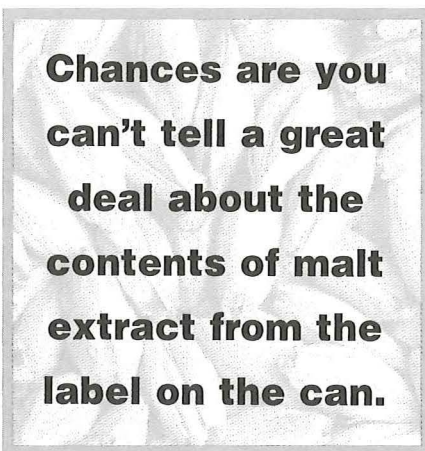
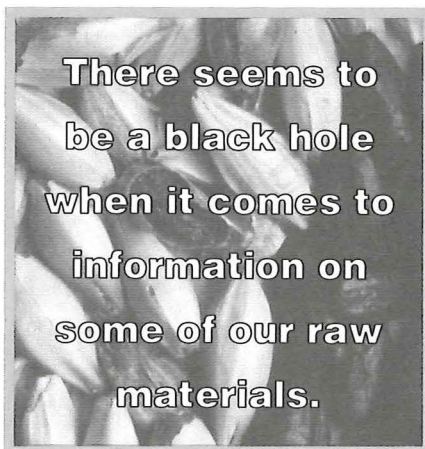
Using the Malt Extract Table

Some examples will illustrate how you might use the table. What if you want to make a Pilsener? Only two of the extracts in the table, 1007 and 1015, are light enough to make a credible Pilsener. Both of these extracts have borderline FAN results, but you really want a light Pilsener and you want it bad. Solve the low FAN problem by brewing a strong wort and diluting later, as described previously.

What if you're a kit brewer? One of the easiest ways to improve a kit is to add malt extract when the kit calls for sugar. Extract number 1012 is a stout kit weighing 3.75 pounds that calls for the addition of 2.2 pounds of sugar. Mix the kit contents with five gallons of water and check the specific gravity. Using the formula above, the specific gravity should be about 1.026. Assuming

you wanted an original gravity of 1.040 and were going to use dry extract number 1019 (SG yield equals 44 from Table 2), you would need to add 1.6 pounds of dry extract. The following formula makes the calculation easy:

$$\text{Pounds of extract} = \frac{(\text{change in SG} \times 1,000 \times \text{gallons})}{(\text{SG yield})}$$



Example:

$$1.6 \text{ pounds} = \frac{1.040 - 1.026 \times 1,000 \times 5 \text{ gallons}}{44 \text{ points/pound/gallon.}}$$

The same trick will work for liquid extracts but they are messier to handle than dry extracts.

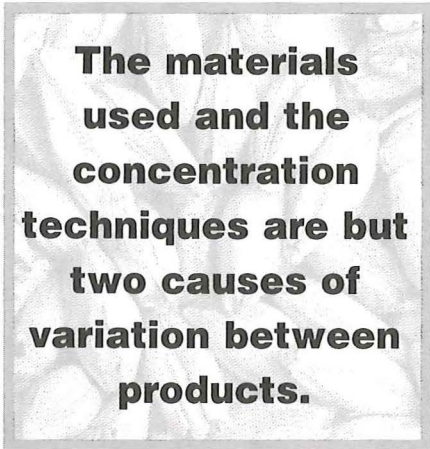
Sometimes you should look at a combination of properties. The reducing sugar test is not accurate enough on its own to indicate adulteration unless the results are up around 10 percent. An adulterated extract would also be expected to have a low FAN because of lower malt content. The combination of low FAN and high reducing sugar together are a cause for concern. But don't worry, get out the glucose test strips if you can't relax with a particular extract.

The Next Step


We only sampled 20 malt extracts while there are several times that many available worldwide. There is no way we could test them all. And we certainly don't have access to the Siebel lab every time there's a question about extracts. The good news is that most of the wort evaluation tests can be done at home excepting nitrogen and FAN. If you run the tests (gravity, pH, color, iron, iodine reaction and glucose) with every new extract or kit you buy, you'll have an impressive data base. This could certainly be done as a club activity.

Although several of the extracts listed ingredients, only two gave typical analysis results (numbers 1018 and 1020). The printed specifications agreed with the Siebel test results. The test results on the cans appeared to be for the malt extract "as is" so we had to "dilute" the numbers to the one pound per gallon level in order to make a fair comparison. Manufacturers will not know how much brewers will dilute their extracts, so listing bulk properties is a realistic compromise.

I tried tracking down manufacturers' specifications through homebrew shops but did not have any luck. When I called one extract maker, I was told that more data are generally available for their food-grade extracts but not for the brewers-grade extracts. If you want to see more information on the label, let manufacturers know and encourage them to make it available. This is especially true for tests that we can't do at home, such as FAN.



**The materials
used and the
concentration
techniques are but
two causes of
variation between
products.**



**What can I
expect from
malt extracts
and kits in a
typical homebrew
setting?**

Final Remarks


We weren't looking to find bad extracts. We did this experiment to learn something. Even though most of the samples looked pretty good, the test results showed a wide variation in some properties, close agreement in others and a few surprises, especially the iron numbers.

Just Brew It hopes that you find this information useful. We had fun with the experiment and learned a few things too. Many people outside the club helped us along the way. Special thanks to Fisher Scientific for donating equipment and the American Homebrewers Association for initiating the project and paying for the tests and materials. Thanks to Ilse Shelton and Joe Power at Siebel, Martin Lodahl and George Fix for their help with technical details.

The Just Brew It club members who did the experimental work are Tim Harper (president), Lee Kobylinski, Adrienne Kobylinski, Layne Hair, Oscar Sarlandt, Mike Watkins, Laurie Watkins, Rob Dahlgren, Tod Taylor, Joe Bergmeister and Fred Wenzel. Without them, there would have been no data to write about.

Having good data is important, but data is not beer. The point, after all, is to make enjoyable beer and to enjoy the process. While you are studying all of the numbers, remember that the most important test is the taste test.

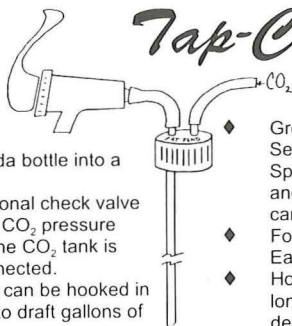
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- Various authors, *Evaluating Beer*, Brewers Publications, 1993.
- Norman Farrell, a homebrewer since 1978, is a founding member of Just Brew It, a Certified BJCP Judge and current vice-president of Brew Bayou homebrewing club in Texas. Norman's other hobby, bicycling, goes great with brewing because both involve "drafting." 



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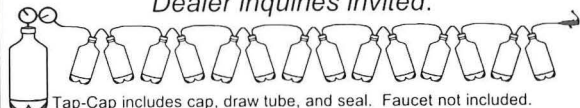


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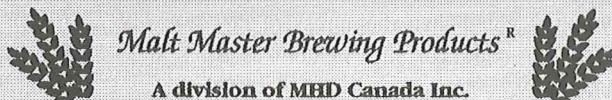
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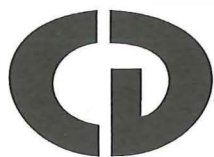
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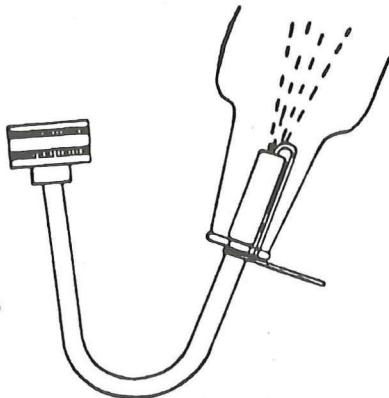
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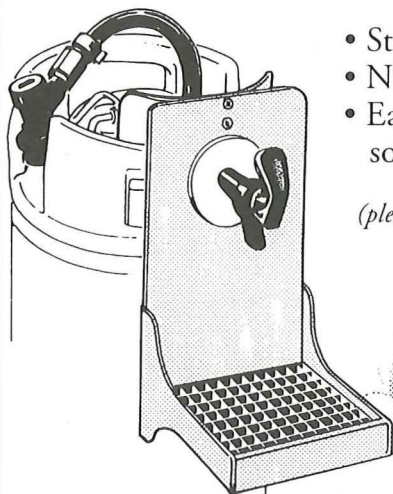
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Two of the first grains to be domesticated were barley and wheat. Wheat made great bread and barley made great beer. It still does. No matter what we beer fans think, nature actually made the barleycorn, the seed

or grain of the barley plant, for the purpose of reproduction. Within its husk the grain stores starches, enzymes and proteins to supply sugars and soluble proteins for plant nutrition and growth. This process happens naturally in the bosom of Mother Earth — when the right combination of moisture and warmth presents itself to the buried barleycorn it will germinate and grow.

The commercial malting process also provides an optimal environment for germinating grain. The maltster strives to achieve the best balance of moisture, starch (carbohydrates), enzymes and proteins for brewing beer. When that balance is reached, the growth process is stopped by heating and drying the grain. The finished malt is a storable enzyme, carbohydrate and protein package complete with its own filter (husk), ready for use at the brewer's convenience. The starches are readily available for turning into fermentable sugars, the enzymes are prepared to transform the starches under the right conditions and the proteins are soluble for yeast nutrition, all in their own tiny container.

For several reasons barley has been the grain of choice for beer makers in Europe (and elsewhere) since before recorded history. Barley has an advantageous husk that protects

the acrospire growing inside the endosperm. In many other grains the first leaf immediately grows out the end of the seed. The large food reserves of the endosperm are the starches that the brewer needs. The husk serves the additional purpose of protecting the endosperm from mold while it is germinating and will later serve as a filter during mashing.

American maltsters only use varieties of barley approved by the American Malting Barley Association. The AMBA is responsible for developing improved strains of barley for maltsters and brewers through genetic manipulation. They work in association with several universities around the country, and with various maltsters and brewers who assist with the research by brewing test batches from new strains.

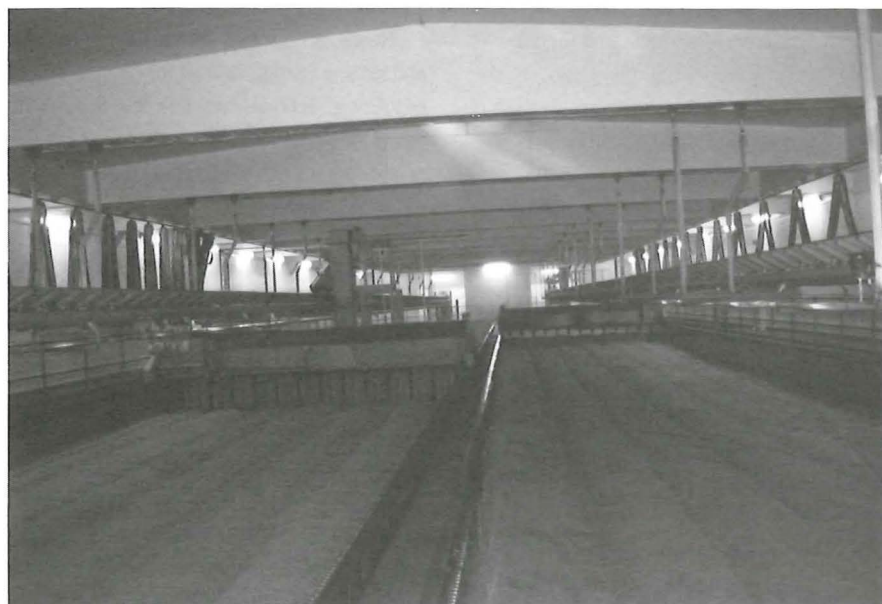
There are two major strains of barley. U.S. six-row barley is grown predominantly in the Midwest and parts of the Northwest, and is a tougher grain with more husk to produce

tannin flavors during brewing. It results in beers with a sharper flavor. Two-row barley is grown almost exclusively in the northwestern United States, western Canada and the cooler parts of Europe. The two-row variety has less husk and makes beer with a softer, cleaner flavor. The particular strain of barley is becoming less important to commercial brewers because of genetic manipulation. The best attributes of each variety are being developed in the other.

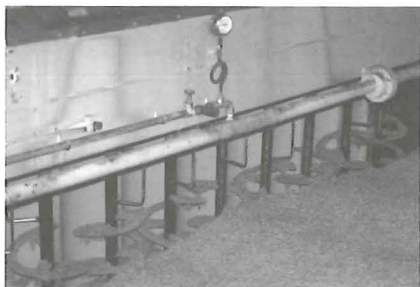
Once the grains are grown and harvested they are analyzed for protein, "plump" and germination viability. "Plump" refers to kernel sizing and germination viability refers to potential vigor of growth. Some maltsters use brokers, who are responsible for the quality of the grain, to buy grain of certain specifications. Other maltsters have their own field staffs who work directly with the growers. In either case, quality control is stressed by all the maltsters.

The barley must have a 12 to 14 percent moisture content before it can be stored. In the United States the grain is bought at the correct moisture content for storage, but in England, where barley is traditionally more damp from the field, it must be dried before storing. The barley is stored in silos or grain elevators for a minimum of four to six weeks. The grain needs this dormancy to mature to its "sweet period," when it will be ready for germination. In nature this would be comparable to lying dormant on the soil through winter until spring. Occasionally, dormancy might take up to five months, depending on how much water reached the grain during the growing season.

The first step in the modern malting process is cleaning and grading, performed after the grain matures. Vibrating screens and flowing air filter out weeds, dust and barley grains that are too small to malt. Other machines, called "indents" are rotating



Saladin boxes, each holding 225 tons of germinating barley, are turned by screw augers moving slowly through the grain. Munton & Fison, Stowmarket, England.



A row of screw augers in the germination (saladin) box at Munton & Fison, Stowmarket, England.

circular drums with dimples in the drum wall to separate out larger particles.

Typical U.S. two-row grain is now 11 percent protein, 12 percent moisture, 8 percent fibrous cellulose and most of the rest is starch and some sugar. The starch is encased in a protein and cellulose matrix, essentially very long chains of molecules. The grain is hard and will stay this way until the proper combination of environmental conditions occurs, in nature when spring brings warmth and moisture.

Brewers used to malt grains by steeping them in a river or stream, germinating the grain on a damp stone floor, raking by hand and kilning over fires of peat or wood. Today, in our quest for the perfect beer — one that can be reliably duplicated — the malting industry has become modern and mechanized.

The industrial springtime begins in the steeping tanks. Grain is moved by a screw conveyor that pushes grain through the length of the conveyor with a long rotating screw, or a drag conveyor that drags the grain along a U-shaped channel with plastic paddles hung from above. Once in the steeping tanks, the barley is immersed in water, drained and allowed to rest. If the grain is not "rested," or "couched," it might drown or die. The first immersion is eight hours, followed by an eight-hour rest. The two or three cycles of water changes vary in duration; the warmer the water, the shorter the total steep. Temperatures vary from 42 to 60 degrees F (6 to 16 degrees C). At 50 to 52 degrees F (10 to 11 degrees C), the temperature of well water used by some maltsters, the steep is 44 to 48 hours. At 60 degrees F (16 degrees C), the steep might take only 42 hours. Tanks are typically sized to handle 40,000 to 60,000 pounds of barley. Each 42,000-pound tank will use almost 44,000 gallons of water in

the steep. A maltster might use either well water or city water, depending on the location. The steep is finished when the grain is "chitted," or has started to germinate. At this point the cell walls of the barleycorn are breaking down and white growth can be seen where the roots will emerge.

The grain is then conveyed to the germination compartments which are special boxes, called "saladin" bins or "saladin" boxes (so named after the French inventor, Jules Alphonse Saladin, who made a pneumatic germination system). These shallow rectangular boxes vary in size from 80 feet by 15 feet to 200 feet by 22 feet, with perforated stainless-steel floors. As the grain germinates and heats up it uses more oxygen. Air at 100 percent humidity is introduced to humidify and cool the grain. Forced air from the air-washer is 58 to 64 degrees F (14 to 18 degrees C) and controls the amount of carbon dioxide and heat given off by the grain. Air is imported via an updraft method, where the air is pumped from below through the perforations in the bin floor, or a downdraft method, where air is sucked downward through the grain and out the perforations in the bin floor.

Meanwhile, a row of vertical spiral augers rotate like giant screws through the grain, moving slowly from one end of the bin to the other. This process ensures a uniform airflow to all the grains by leveling the hills and valleys in the bin, and keeps emerging rootlets from getting tangled and becoming root bound. A rake performs the same function in more traditional malting operations. Additives to enhance germination are available but are prohibited from the malting processes used in the United States.

Germination is complete when the acrospire has grown to between three-fourths and one full length of the grain. An experienced



Cylindroconical steep tanks at Munton & Fison, Stowmarket, England.

maltster knows by the look, feel and smell when the growth, enzymes and proteins are all at the necessary stages to produce good wort. Malting, like brewing, is as much an art as a science. Some maltsters vary only the time the grain spends in the bin, as few as 3 1/2 days or as long as it takes for barley to germinate and reach the correct modification. Other maltsters on tighter schedules can achieve the same results by manipulating the temperature and moisture reaching the grain in the germinating boxes. They might allot only four or five days with varying temperatures to the germination process for each batch.

Brewers are looking for well-modified malt where most of the starch has been converted to a soluble condition. Because the growing acrospire takes up so much of the endosperm, well-modified malts will yield less fermentable sugar, but the brewer will also have less haze from raw proteins in the finished product.

The green malt is now ready for kilning, which stops the germination process. The malt is taken to the kilns by conveyor, dumped from the bottom of the germination bin into another salad-type bin used for kilning or, in a few places, the salad bin used for germination can also be used for kilning.

Many maltsters use two-level salad-type kilns with vertical screw augers, similar to those in the germinating compartments, for turning the grain. The floors are slatted, and when the slats tilt from the horizontal position to vertical, the grain falls to the level below.

Heated air comes from the base of the kiln and rises to the upper level for the first stages of kilning. Between the kiln levels cold-air vents allow ambient air in to make sure the top level does not overheat as the lower level temperatures get hotter.

At the top level the grain starts at 48 percent moisture and is kilned by some maltsters at 120 to 140 degrees F (49 to 60 degrees C) for 18 to 20 hours. Other maltsters kiln the green malt at not more than 120 degrees F (49 degrees C) until the moisture level reaches 12 percent. Then the slats tilt and the grain falls to the lower level of the kiln where the grain is kilned at 160 degrees F (71 degrees C) to further lower the moisture content. During the "final finishing," the last part of the kilning process when the kiln reaches 185 degrees F (85 degrees C) and the grain dries to between four and 4 1/2 percent moisture, the

color and flavor of the malt are determined. The sugars, amino acids, proteins, heat and water content all help determine the color and flavor of the final malt. The final finishing takes three to four hours. Total time on the lower level is about 14 hours.

If the high-moisture green malt was kilned at high temperatures initially rather than bringing down the moisture content and raising the temperature gradually, enzymes would be lost, the yield would be less and there would be "glassiness." "Glassiness" describes the grain's appearance in cross-section. A normal two-row kernel will be white and powdery inside. If it appears shiny then the kernel didn't grow during germination or there was a problem in kilning. By kilning the drier malt at high temperatures, those problems are avoided and more flavor is produced.

After the rootlets are removed, or "decumled," the malt is ready to be sent to the brewer or the malt extract producer who will mix the malts. Pale malt is the basis for most of their finished products.

From Kernel to Syrup

Making malt extract begins with a mash like any grain brewer uses. On this scale, industrial machines crush the grain with four or six rollers, some of which can mill 4,000 pounds of malt an hour. Ground grain is now called grist, and is ready for mashing. In a nutshell, mashing provides the right temperatures for the enzymes to change the starches into sugars and break down proteins.

While there is some sugar present in the germinated malt, most of the grain is now soluble starch. The maltster is looking for how well the starch molecules break down during the mashing process. Very long chains of molecules have broken down into shorter chains during germination, but only when the chains are shorter — one, two, or three sugar molecules long — will they be fermentable. During the mashing process diastatic enzymes developed during the malting process will make the chains of molecules fermentable. The alpha-amylase enzyme breaks the molecule chains in the middle, producing more and shorter chains. The

beta-amylase enzymes break off chains of one to three molecules (fermentable chains) from the ends of longer chains. Alpha-amylase and beta-amylase enzymes both convert starch to fermentables at 148 to 150 degrees F (64 to 66 degrees C). At higher temperatures (156 to 158 degrees F or 69 to 70 degrees C) beta amylase is quickly denatured leaving only alpha amylase to work on the starches. Since alpha amylase is limited in what it can convert, a less fermentable, more dextrinous wort is produced. Some beer styles, like Scottish ale, necessitate a dextrinous wort while others would be out of style with such a wort.

Industrial mashing is the same as mashing at home only on a larger scale. Malted barley is put into heated water and kept at specific temperatures for specific periods of time. The temperatures activate the enzymes that turn the molecule chains of starch into short chains of fermentable sugars. Some companies use the temperature controlled mash for some batches and the single-temperature mash for others. Some malt extract producers use just the single-temperature mash procedure. A well-modified malt mashes well at a single temperature.

The body and alcoholic content of the beer can be controlled by varying the temperatures and times of the mashing process. The manufacturers of malt extract change the

variables of the mashing process depending on the extract desired, and whether it is a standard or specialty malt.

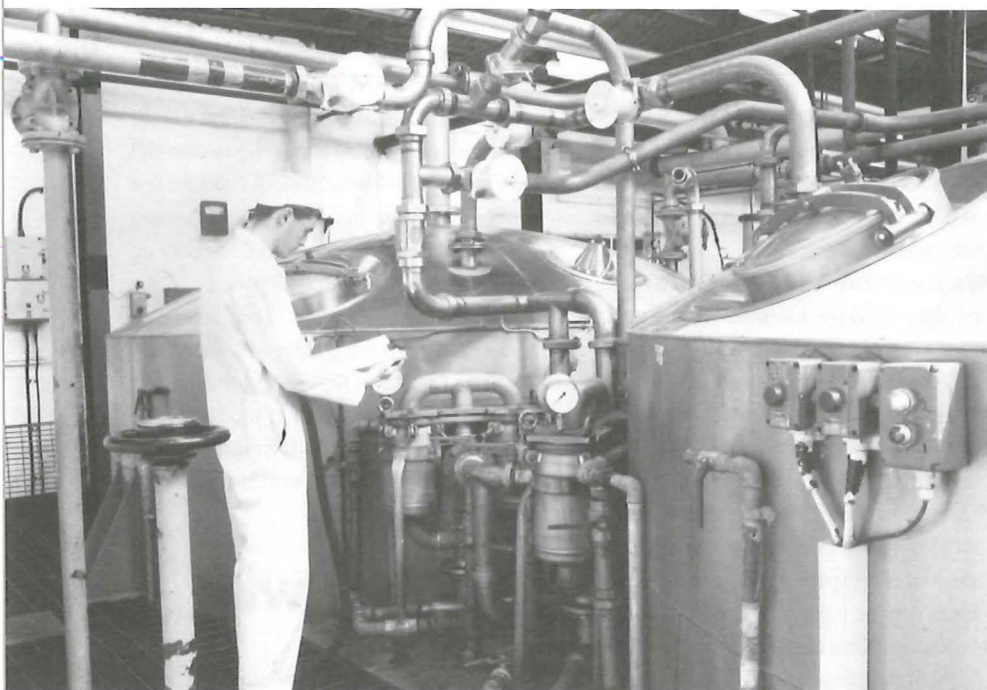
Once the mashing is finished the wort is drawn out of the bottom of the lautertun leaving the grain husks behind. The first few runnings from the tun are recycled through again until enough husk material has built up on the tun floor to form a filter bed and the wort runs clear. Clear wort is put in a holding tank. The grains are sparged with hot water. This is added to the wort in the holding tank. After pasteurization at 180 degrees F (82 degrees C) for 30 to 60 seconds to kill any mold or yeast spores, the wort is ready to be turned into malt extract.

Instant Wort

Several methods of reducing wort to liquid malt extract are used in the industry, but basically, the moisture in the wort is removed until it is a syrup of about 20 percent water and 80 percent sugar solids. Extracting moisture takes place in a vacuum where the water can be boiled off and evaporated at lower temperatures. Water boils at lower temperatures in a vacuum, thus eliminating the adverse effects on the sugar (development of caramelization flavors and of-



Mash temperature and time are constantly monitored from this mash-tun control panel.



At the lautertun, temperature and runoff clarity are controlled.

ten dramatic increases in color) caused by high temperatures. In some systems the wort is run into a tube within the vacuum chamber, the chamber is heated, the water is drawn up and off as steam to a heat exchanger at the top of the vacuum, condensing it into distilled water, then the wort (minus the evaporated water) circulates into another tube where the same process takes place reducing it further. This process operates at 125 to 130 degrees F (52 to 54 degrees C) and is continuous. Wort can be poured into the first tube at the same rate it finishes as liquid malt extract at the end. Volumes tend to be 700 to 800 gallons at once.

Another process for making liquid malt extract involves a vacuum chamber, but the chamber is heated and the water is drawn through the tube's membrane walls, evaporating in the vacuum. Temperatures start at 200 degrees F (93 degrees C), and go down to 120 degrees F (49 degrees C). It takes about one-half hour for the final syrup of 20 percent water/80 percent sugar to be reached using this method.

To make a hopped malt extract, many producers add extracts of aromatic and bittering hops to their finished malt extracts because hop aromatics are lost in the heating process required to make malt extract. Dennis Alexander, of California Concentrates, an industrial producer of malt extracts, used

whole hops in the boil of a trial batch, and it boiled over and they lost half a batch. (I envisioned an industrial-sized spill — worse than those I sometimes get on my kitchen stove.) He said it was a real mess, and I believed him.

The liquid malt extract is pasteurized a second time before being canned for homebrewers or put in drums for larger breweries and retailers.

Diastatic malt extracts have more diastatic enzymes that are useful when brewing beers with non-enzymatic adjuncts such as unmalted wheat, rice or barley. In standard malt extract processes, most of the diastatic enzymes are destroyed during kilning and pasteurization. Diastatic malt extracts are not pasteurized, and therefore, must be carefully produced with exacting cleanliness. Sanitary regulations do not allow American malt extract producers to use this process.

Dried malt extract takes the process one additional step to reduce the moisture content of the extract to about 1 percent. Heated malt extract enters a dryer chamber from the top through a spinning disc atomizer. Flowing air keeps the atomized extract droplets spinning in a spiral until the droplets dry, then they are expelled through an outlet in the base of the dryer. A droplet is thoroughly dried before it reaches the bottom as a powder. Hammers keep the chamber walls

vibrating to discourage any deposits from forming. The finished product is chemically identical to liquid malt extract, except for the moisture content.

Byproducts of the mashing process are not wasted. Spent grain goes to livestock as feed. Water is often recycled where possible through all phases of malting, mashing and extracting, or in some cases, to fish ponds and greenhouses.

Glossary

Acrospire: a new rootlet.

Diastatic: an enzyme capable of converting starch to sugar.

Endosperm: the food reserves inside the husk.

Green malt: newly germinated barley not yet dried or kilned.

Saladin box: A pneumatic germination system invented by Jules Alphonse Saladin in France in the 1880s. The term is now synonymous with germination box.

Acknowledgements

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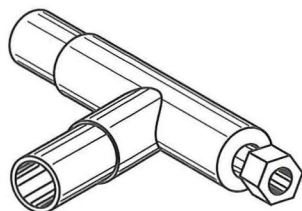
Schneider, Seth, of Crosby & Baker in Westport, Mass. Telephone interview. 1994.

Carol G. O'Neil graduated from Connecticut College for Women in 1968, and married a career Marine Corps officer. She lived in Moscow, for two years and traveled extensively about the Soviet Union. In addition to raising two children and free-lance writing, Carol has been a White House volunteer and a volunteer interviewer with the Navy-Marine Corps Relief Society. Carol lives with her husband in Monterey, Calif. where she writes, does research and gives tours for the Point Sur (Lighthouse) State Historic Park, and of course, assists with each new batch of homebrew. ☺

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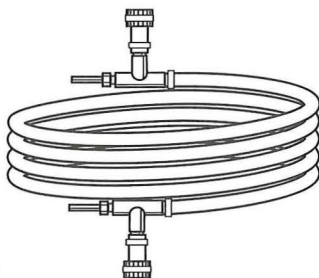


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THE REGAL

Altbiers



Altbiers were brewed in Cologne, Münster and Düsseldorf, Germany.

It was late afternoon as I drove in heavy traffic into Düsseldorf. I found a drab but inexpensive hotel room in The Altstadt (old city) and parked the car. Düsseldorf is not frequently mentioned as a tourist destination because it is primarily a medium-sized financial center. It might be comparable to a city like Hartford, Conn.

The guidebook that led me here was Michael Jackson's *Pocket Guide to Beer* (Simon & Schuster, 1992). Jackson had already led me to such highlights as the beer halls of Munich and the fabulous Hirsch Brewery-Hotel in Ottoburen, where a swimming pool is heated by the brew kettles.

My destination was the Altbier breweries of old Düsseldorf, particularly, Zum Uerige. The brewpub is very large, covering the first floor of several adjoining buildings. On your way into the dimly lit rooms to find a table you must constantly dodge wooden kegs of beer being rolled to the serving stations, where two people lift them to high shelves for dispensing by gravity. The tall, narrow glasses are filled by the usual German method of filling halfway, waiting until the head settles a bit, then filling completely. Once you order one beer it is a standing order and you are brought glass after glass until you persuade your waiter to stop and settle the bill, kept by tick marks on your coaster.

The Zum Uerige brewery, visible through windows in a back room, is all gleaming polished copper with antique equipment still in use, such as an original Baudelot ammonia-based refrigeration system. The place is always crowded, although the food menu is minimal with only (delicious!) sausage and cheese plates.

BY ROGER DESCHNER

OF *Düsseldorf*

The large crowd spilled out onto the sidewalk of a side street that evening, soaking in the warmth of a pleasant fall evening along with the warmth of great beer.

But Zum Uerige the place is overshadowed by Zum Uerige Altbier. It has a beautiful deep copper color and a nice white head, a sturdy, complex German maltiness with a wonderful, huge hoppiness that brings everything into balance. It is a very big beer with a big, intense flavor profile, but neither sweet nor unusually alcoholic. Zum Uerige Altbier is truly one of the world's magically special beers. (Michael Jackson gives it four stars.) I will always remember my evening at Zum Uerige, drinking perhaps the best beer I have ever had, and watching the staff roll out the wooden barrels. It made Düsseldorf, an otherwise unspectacular city, the high point of the trip.

Unfortunately, my visit did not coincide with the seasonal specialty called *Sticke* (secret), which has a higher gravity, is dry-hopped and even more intense. Zum Uerige brews one batch of *Sticke* to serve in September and one in January.

I also visited Zum Schlüssel (The Key) brewery, which had a characteristic romantic, very German setting, a full food menu and very good Altbier. However, it was not quite as intense as Zum Uerige's beer.

Where did this mystical elixir, Düsseldorf Altbier, come from? Why doesn't anybody know about it? To answer the second question first, perhaps the fame of Düsseldorf Altbier has not spread farther because most of the breweries making it in Düsseldorf are brewpubs (called house breweries). While Altbier is not an appellation like Kölsch is for Cologne, this kind of Altbier is not made outside of Düsseldorf's half-dozen or so brewpubs, not even elsewhere in Germany. Very little of the Düsseldorf product is exported anywhere, much less across the Atlantic. (This situation is changing. See Commercial Examples, below.) The major problem is simply that most people have never tasted this gem of the brewing world. Even though the American Homebrewers Association wisely gives "Düsseldorf-style Altbier" its own subcategory, it may be the least understood classification. Well-meaning American homebrewers or microbrewers usually miss the mark because they have not tasted it, since traveling to Düsseldorf is about the only way to gain the experience.



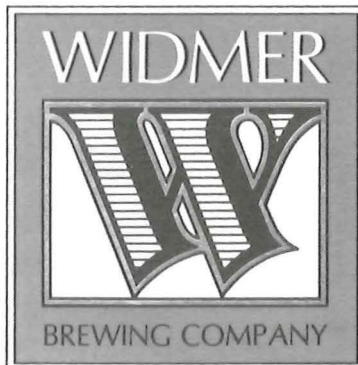
Banner waves in the afternoon sun outside the Zum Uerige house brewery in Düsseldorf.

Other beers called Altbier are brewed in other regions of Germany. The most distinct of these is the Münster style, a remarkable brew in its own right, having a slight lactic character somewhat like a Berliner Weiss. It is made with as much as 40 percent wheat malt, making it fairly light colored. Pinkus Münster Alt is imported to the United States, but it is clearly distinct from the Düsseldorf style. Many German brewers, such as the larger breweries of Dortmund, call their ordinary dark beer "Alt." These tend to be darker, less hoppy, sweeter and unremarkable compared to the Düsseldorf style. Many of the American efforts appear to be imitating the Dortmund-style Altbiers.

To understand its history it helps to know how real Düsseldorf-style Altbier is made. Altbier brewing starts with a lengthy upward step infusion mash, or a decoction mash, using a mixture of traditional German malts in relatively soft water. Hops are primarily Spalt with some Tettnanger and Saaz. Primary fermentation is at a relatively warm 60 to 65 degrees F (16 to 18 degrees C) using specific clean single-strain yeast followed by cold (41 degrees F or 5 degrees C) conditioning like

a lager beer. Esters produced in the warm primary phase are subdued in the cold secondary. This process is the hallmark of an Altbier.

Altbiers should fall in the initial gravity range of 1.045 to 1.051, but can vary greatly in final gravity. There is a lively debate among brewers about which of the so-called Altbier yeasts is the real one, and the answer probably is that they all are, even though they differ greatly in attenuation. One might suspect that the low-attenuating Wyeast No. 1338, which leaves a big malty profile, could be more like Zum Uerige, while the drier Wyeast No. 1007 could be similar to the strains used by some of the other Düsseldorf brew houses. Although the exact hop bill varies from one brewery to another, Altbier is a hoppy beer — from 35 to 50 IBUs. Randy Mosher's table in *The Brewer's Companion* (Alephenalia Publications, 1994) shows that Düsseldorf Altbier has the highest rate of hop bitterness per unit of gravity of all the world's beer styles. A typical malt bill would contain mostly German two-row Pilsener malt, Munich and Vienna specialty malts and no more than a small amount of caramel malt. A touch of black malt is used to adjust the color to a deep copper, but not brown. Some brewers use a portion of wheat malt as well. Too many brewers make the mistake of using too much crystal malt and too few hops, the result being a sweet brown ale they call Altbier but missing the mark completely.



Altbier brewing predates the invention of refrigeration and the Pilsener style that refrigeration fostered. "Alt" is German for "old," meaning simply top-fermented the old way. But the Düsseldorf style also is "old" in that it has a big flavor profile, in contrast to the increasingly light and clean Pilseners pioneered in the 19th century. We are indeed lucky that the city of Düsseldorf continues this unique brewing style today. My visit was one of the reasons I began to brew at home. I searched in vain for anything like the beer I had in Düsseldorf, so I resolved to make it myself. My

homebrewed versions have yet to hit the mark, although I am getting closer with each revision, and the research I did in preparing this article should improve them another step.

If you want to try brewing a Düsseldorf Altbier, start with the right ingredients. It is important to use German-type malts and hops to give this beer a German accent; otherwise it could be an India pale ale or a California common. But the most frequently overlooked ingredient is hops. Think "medium-dark, malty, German beer for hop-heads." To be truly in style use "noble-type" hop varieties for bittering, as well as for flavor and aroma. This does make a difference and the cost is insignificant at homebrewer quantities. If you have the facilities, try kegging Düsseldorf Altbier in a wooden barrel, as is done



Bronze sculptures at of Zum Uerige depict the four stages of beer — growing grains, brewing, kegging and enjoying.

at Zum Uerige. Researchers studying the effect on beer flavor have investigated certain bacteria that live only in wooden beer vessels.

This recipe has several alternatives, such as choice of mashing procedures or making the higher-gravity *Sticke* Altbier. To make *Sticke*, follow the general recipe below, but raise the original gravity to about 1.058, add a little more roasted malt, raise the hopping to about 60 IBUs and dry hop when racking to the secondary. (*Sticke* is an intense brew!)

Düsseldorf Altbier

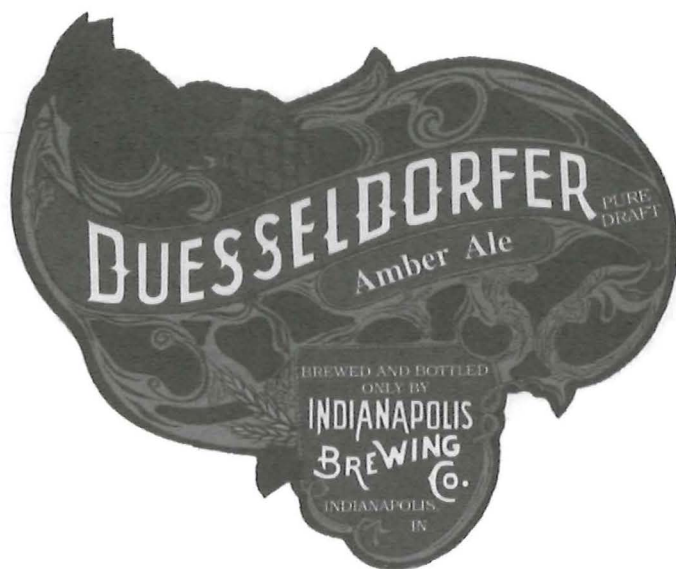
Ingredients for 5 gallons

- 1 pound Munich malt
- 1 pound Vienna malt
- 1 pound caramel malt
- 1 to 4 ounces black patent malt (Vary this to achieve SRM color in the mid-teens — a deep copper but not brown.)
- 6 pounds German two-row Pilsener malt (Vary this if your mashing efficiency is not about 85 percent to achieve original gravity between 1.045 and 1.050.)
- 3 ounces Spalt hops (Saaz, Tettnanger or Hallertauer can also be used. Avoid Cascade or other distinctively fruity American hop varieties.) Adjust the amount of hops based on your boil gravity and the alpha acid levels of your hops — try to achieve 35 to 50 IBUs.

moderately soft water

Wyeast No. 1338 [My preference, but whatever you use make a starter! Alternate alt yeast selections can be found in the "Table of Available Yeast Strains," *zymurgy* Summer 1994 (Vol. 17, No. 2).]

Dr. Bob Technical's wheels of malt and hops can help you get close to the target gravity and hop level here. The right mashing procedure is important. Some Düsseldorf brewers use a standard decoction mash, while others use this 2 1/2 hour upward step infusion mash:



- 122 degrees F (50 degrees C), hold for 45 minutes
- raise temperature to 144 degrees F (62 degrees C) at one degree C per minute, hold for 20 minutes
- raise temperature to 158 degrees F (70 degrees C) at one degree C per minute, hold for conversion
- raise temperature to 169 degrees F (76 degrees C) for mash-out

Boil for 1 1/2 to 2 hours with the following hop additions:

- 40 percent of hops after 15 minutes
- 20 percent after one hour
- 20 percent five minutes before end
- 20 percent at end of boil

Do not skip the later flavor and aroma hop additions, as some might suggest.

Ferment at 60 to 65 degrees F (16 to 18 degrees C) until fermentation stops. Rack, and condition at 41 degrees F (5 degrees C) for three weeks or longer. Residual gravity may be high and this is OK. Prime or force carbonate. Serve relatively fresh while the hop character is still evident.

Commercial Examples

One Düsseldorf Altbier is now being imported to the United States in limited quantities. While none of the other examples available in the United States are "it," if you want to taste an approximation of the Düsseldorf-style Altbier, you might try the following:

Schlösser Alt — ("Locksmith" — not to be confused with Zum Schlüssel, "The Key.") Made in Düsseldorf and now available for the first time in a few U.S. cities, on draft only.

Alaskan Amber — (Alaskan Brewing Co., Juneau, Alaska) Revives an old tradition of brewing Altlike beers in Alaska. Probably not an accident that it goes especially well with smoked salmon.



Widmer Alt — (Widmer Brewing Co., Portland, Ore.) Though unfortunately toned down from its earlier aggressive imitation of Zum Uerige, is still brewed using the unique Düsseldorf process.

Anchor Steam® — (Anchor Brewing Co., San Francisco, Calif.) The California Common beer style is superficially similar, and Anchor's process is close to the Düsseldorf process except in the use of lager yeast instead of ale yeast. Anchor Steam® is moderately close to Düsseldorfer Altbier in color, texture, hoppiness and a certain element of "wonderfulness." It is plausible to suppose that German immigrant brewers in old San Francisco, faced with the near impossibility of obtaining ice, turned to the old Alt process they remembered from Düsseldorf because it worked and produced drinkable beer under the circumstances.

Go to Düsseldorf — Why not taste the real thing? There is no U.S.-made beer that compares with Zum Uerige Altbier fresh from the source. Watch for transatlantic airline fare wars. Düsseldorf is a frequent landing point for flights from the United States, and fares have occasionally dipped to the price of a flight across the United States. Düsseldorf is easy to reach by car or train from Belgium, The Netherlands or Luxembourg. Bring your copy of *Pocket Guide to Beer* as your tour guide!



American Altbiers not in the Düsseldorf style — Düsseldorf Ale (Indianapolis Brewing Co., Indianapolis, Ind.), Schmaltz' Alt (August Schell Brewing Co., New Ulm, Minn.), Old Detroit Ale (contract brewed by Frankenmuth Brewery Inc., Frankenmuth, Mich.), St. Stan's Alt (St. Stan's Brewery, Modesto, Calif.).

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Roger Deschner is a homebrewer, member of the Chicago Beer Society, Recognized BJCP judge, amateur photographer and professional computer systems programmer from Chicago, Ill.

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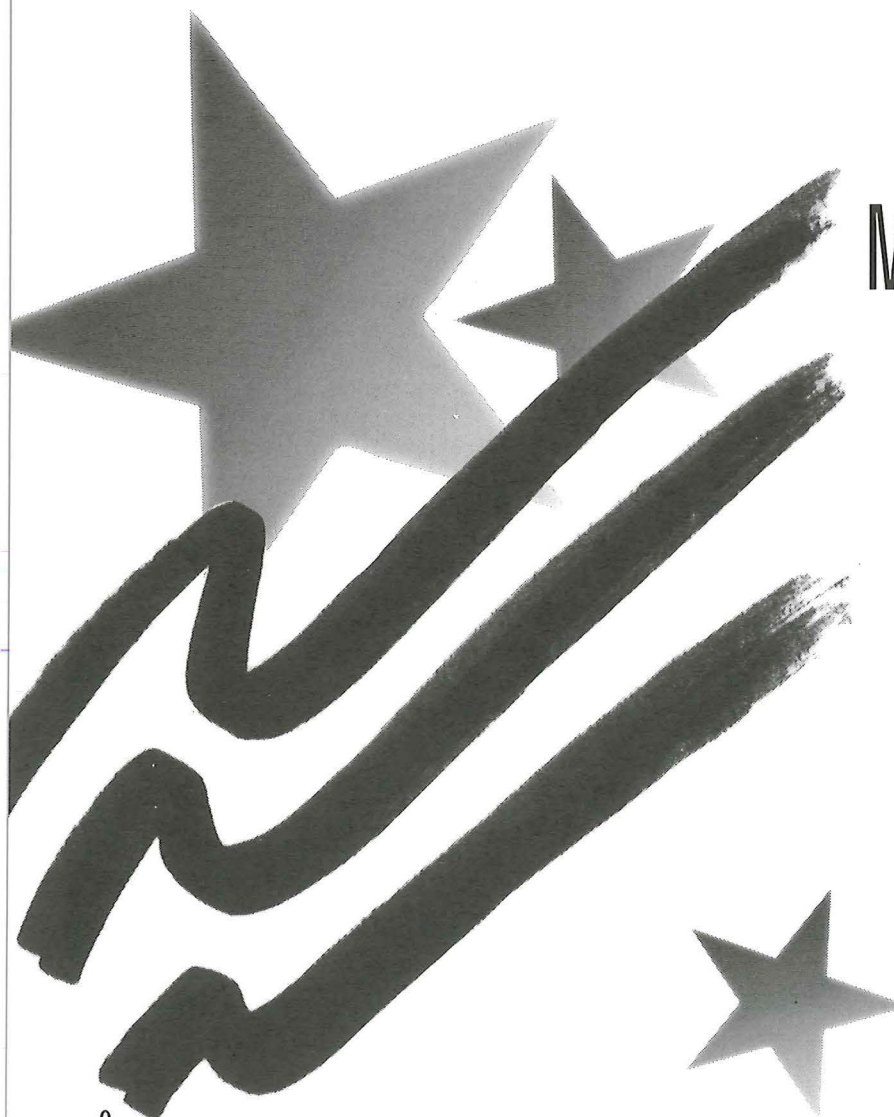
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In Search of American



Mention Altbier to homebrew enthusiasts and most will look mystified. Some will consider the style to be close to brown ale, while others see it as some form of amber ale. Most agree the beer is highly hopped.

The reality is that Altbier has undergone a metamorphosis in the United States since the beginning of the homebrew/microbrew revolution. While the traditional Düsseldorf example of the style is deep copper, malty, highly hopped, with a clean dry finish and an original gravity between 1.044 and 1.050, some American commercial examples range from light to medium amber. The recipes for Altbier also differ with the addition or deletion of wheat and dark malts. It may well be that the paradox of what constitutes an Altbier could lie in the scarcity of Alt from many regions in the United States, and perhaps the "Americanization" of the style.

With the migration of Germans to the United States, one would expect Altbier to be prevalent in regions where they settled. Since the majority of Germans who settled here were from Bavaria and other southern German areas, Pilseners were the beer of choice. This isn't to say that Altbier was not produced in the United States because it was, but the beer was often known generically as a dark beer. One of the places Altbier was produced was in Alaska. In the mid-1980s, when Geoff and Marcy Larson were preparing to open Alaskan Brewing Co., they found a recipe in the Juneau library for Altbier from the defunct Douglas City Brewery, Alaska, which became the basis for their award-winning Alaskan Amber.

BY BEN JANKOWSKI

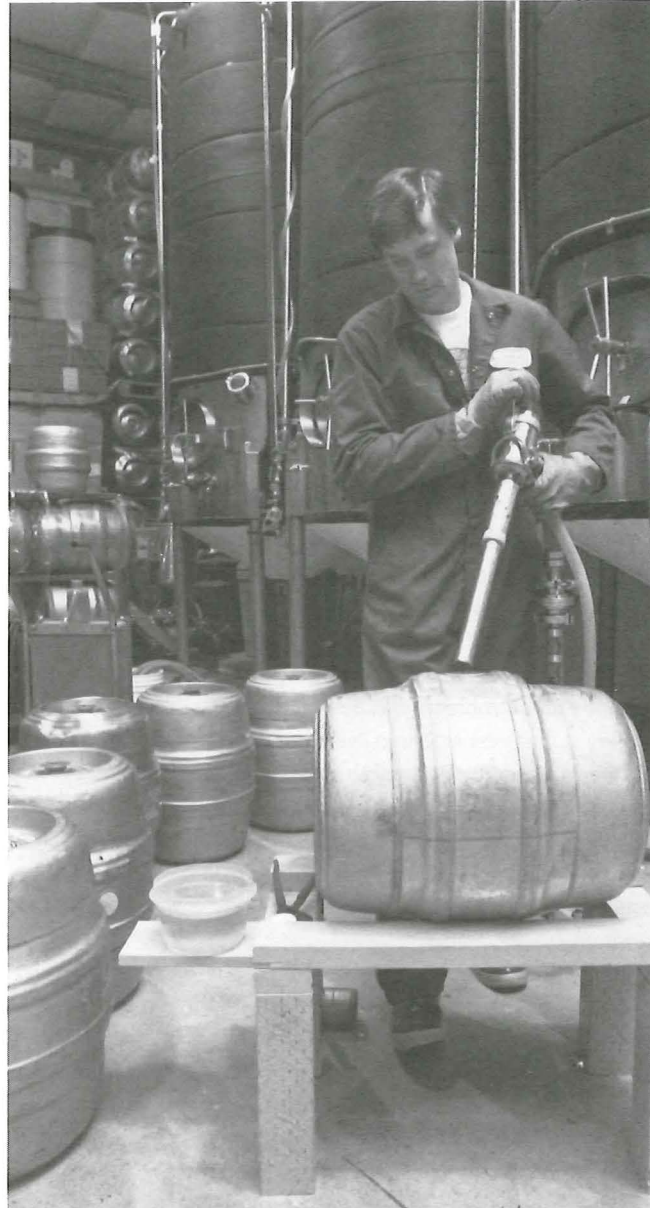
Alt

“I think the original Düsseldorfer Altbier style is fairly obscure in this country; little or none of it is imported. I’ve tasted a few German Altbiers and there is definitely a family resemblance among them: Munich malt flavor, dry throughout, little hop aroma and flavor but a strong hop bitterness, well-attenuated with a light to medium body for a normal gravity (11 to 13 °P) beer. There aren’t any American beers that I’ve tasted that really fit this description; they tend towards a caramel malt, heavier bodied beer, with strong hop aroma and flavor as well as bitterness. In this respect, they seem to fall into another style, perhaps American red ales, like Rogue Red and Maritime Pacific Flagship Red.”

Darryl Richman of Bellevue, Wash., is a 10-year homebrewer, National BJCP judge and author of *Bock* (Brewers Publications, 1994).

Flavor Profile and Description

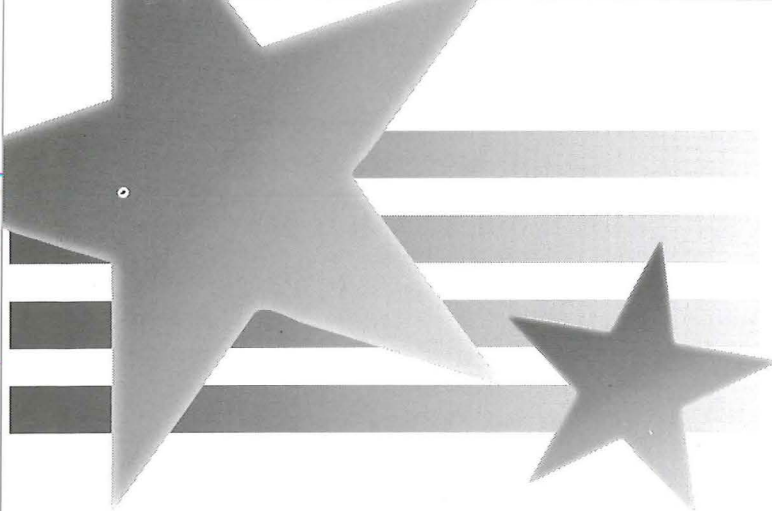
Frank Commandy of Widmer Brewing Co. describes Altbier as being “not a one-dimensional beer.” Starting off malty, the flavor will quickly turn hoppy, followed by a crisp dryness. This is unlike a brown ale, which will have chocolate and black malt profiles with little hop bite (except American brown ales). A pleasing aspect of Altbier is that being a moderately low-gravity beer with excellent attenuation, it can be consumed as a summertime thirst quencher.



Geoff Larson, co-owner and founder of Alaskan Brewing and Bottling Co., fills a keg in the Juneau brewery.



Alaskan Brewing’s Alaskan Amber was the 1990 Great American Beer FestivalSM Altbier category winner.



While there are many brewers who have been producing various German-style Altbiers, a new category of this style has been emerging. Called American Alt, this style of Altbier is amber to copper with less hop bite, yet still having the dryness associated with the Düsseldorf version of the style. This hybrid style has been a source of consternation for microbrewers, as the winners of the Düsseldorf Altbier category at the Great American Beer FestivalSM the last few years have been from this unofficial American style. The winner of the 1990 Great American Beer FestivalSM Düsseldorf Altbier category was the Alaskan Brewing's Alaskan Amber; 1991's gold medal went to Lone Trail Ale from the Mountain Brewers in Bridgewater, Vt.; in 1992 Samuel Adams Boston Stock Ale took the gold and the 1993 winner was New England Brewing's Atlantic Amber.

Before producing an American Altbier, sample the commercial styles in your area to acquaint yourself with the flavor profile. A local brewpub may be a starting point, because most likely the Altbier you will encounter will be some form of the American version: amber, somewhat hoppy, with dry notes at the end. Altbiers from the Pacific Northwest will have the most diversity, with Widmer's being more similar to the Düsseldorf style, followed by Alaskan Amber (where available), which is more typical of American Altbier. California's St. Stan's Brewery produces two types of Altbier. The Midwest has recently added an Altbier in the form of Schmalz's Alt from August Schell Brewing but using American high-alpha-acid Chinook hops for bittering. Grolsch's Amber is available in many areas of the country. Michael Jackson in his *Beer Companion* (Running Press, 1993) describes Grolsch's Amber as very similar to an Altbier in taste and brewing processes used, and may well fit the proposed American Altbier category.

Recipe Formulation

Producing an American version of Altbier is not difficult. Patience, however, is needed for the cold secondary fermentation period required for the clean, dry taste.

Two methods can be used for brewing an American Alt. The first version requires up to 15 percent wheat malt in the grain bill. Wheat is consistently used for Altbier in the United States, and will increase head retention. The second version uses no wheat, and relies on roast and dark malts in conjunction with cold secondary fermentation to give the beer its dry mouthfeel at the end of the taste.

“American Alt beer is one of the least recognized beer styles. Only a few U.S. brewers make Alt beers because of the extra costs for cooler primary fermentation and cold secondary storage. However, the benefit, whether it is an imported Alt or an American formulation, is an extremely smooth flavor profile without any hint of sharpness.”

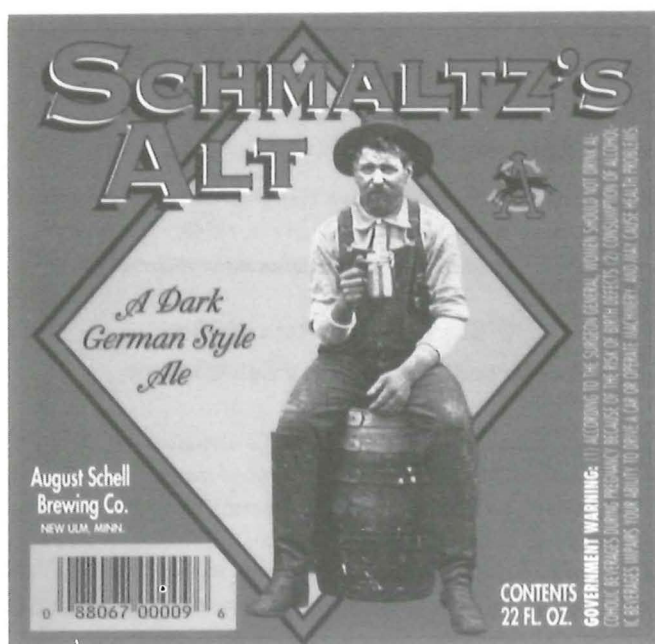
Garith Helm, head brewer, St. Stan's Brewery in Modesto, Calif.

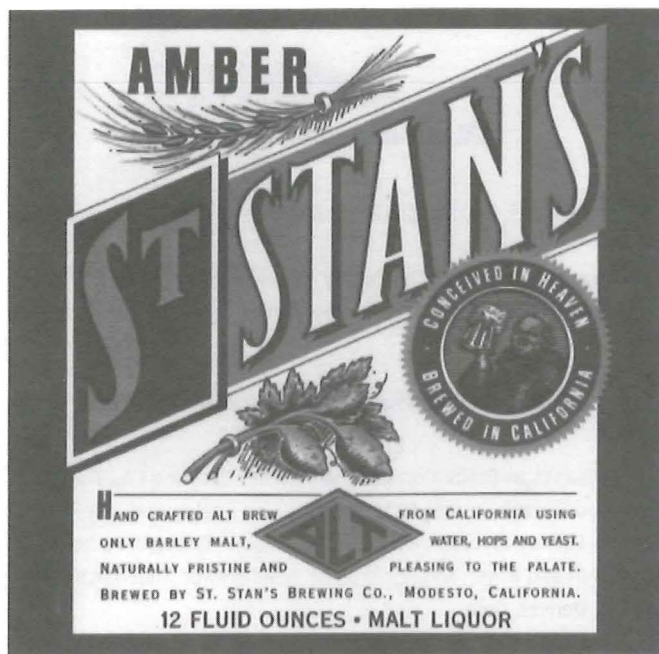
The primary malt for brewing Altbier can be any two-row malt. Klages and Harrington malts give the best conversions. Seven to eight pounds of primary malt is sufficient for a five-gallon batch. Extract brewers can use five to six pounds of pale or amber dry or liquid malt extract. Wheat extract is also available, and one-half to one pound should produce an American Altbier.

Hop selection is straightforward. Bittering hops can be middle-of-the-road alpha acid Perle or Northern Brewer hops. American Altbiers typically use some derivative of their European cousins, such as Mount Hood, Liberty and American Tettnanger for flavoring, and perhaps Nugget, Chinook or Galena hops for bittering. Cascades and Centennials can be used, but in small quantities, no more than one-half ounce in a five-gallon batch.

Water treatment is up to each brewer. Some brewers swear by soft water, but my best advice is to use whatever comes out of the tap. A teaspoon of calcium carbonate will certainly help smooth some of the sourness of dark malts.

Mash with a protein rest of 120 degrees F (49 degrees C) followed by steps of 140 to 145 degrees F (60 to 63 degrees C) for 20 minutes, then 154 to 158 degrees F (68 to 70 degrees C) for an additional 20 minutes. Mash-out should occur at 168 to 170 degrees F (76 to 77 degrees C).





Sparge as usual. Alternatively, a single step infusion can be used at 155 degrees F (68 degrees C) for one hour.

Pitch at least a quart of starter yeast when the wort temperature is 60 to 65 degrees F (16 to 18 degrees C). Pitching at 60 to 65 degrees F (16 to 18 degrees C) will produce fewer esters than higher temperature fermentations while still being in a temperature range most ale yeasts can tolerate. After five to seven days the green beer should be transferred to the secondary fermenter, placed in a refrigerated unit and the temperature gradually reduced from 50 to 30 degrees F (10 to 0 degrees C) for up to three weeks, according to Jackson. Homebrewers may not have total control over their refrigerators, so a temperature of 40 degrees F (4 degrees C) is an acceptable final temperature for some brewers. Dry-hopping is optional and depends on the recipe.

Yeast selection can offer some interesting varieties. Wyeast produces a highly flocculent, less attenuative Altbier ale yeast (No. 1338) with a tendency to produce a beer with a malty character. Wyeast American ale (No. 1056) can be used, but is not as resilient below 50 degrees F (10 degrees C) for cold maturation. A new Kölsch yeast (Wyeast No. 2565) seems to be promising, though I have not used it.

The following is a recipe to start the homebrewer off on the path to brewing American Altbier. It is loosely based on an award-winning beer by Steve Daniel of League City, Texas.

When we read the description of the old Douglas City Brewery's process, we quickly realized that producing Altbiers in Alaska was more a matter of convenience than pursuit of a specific style. Cooler fermentation temperatures were easily attained, and a hearty lifestyle made the big-bodied beers popular. However, highly prized hops from the 'old country' (Saaz) were used sparingly, as shipments were few and far between. The result was a frontier version of the old-style Altbier.

Geoff Larson, brewmaster, Alaskan Brewing and Bottling Co., Juneau, Alaska.

To me the dominant characteristics of Düsseldorf Altbiers are a low-to-medium body with medium-to-high hop bitterness. American Altbiers, while fine in their own right, do not have the crisp bitterness of the Düsseldorf Altbiers. I think some of the American Alts have an IBU level close to the Düsseldorf Alts, but have fuller body making the perceived bitterness lower.

Jim Homer, National BJCP judge, Boulder, Colo.

American Hybrid Altbier

Ingredients for 6 gallons

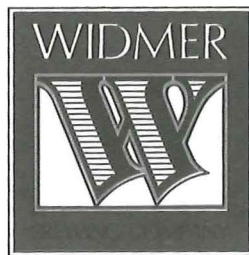
- 8 pounds two-row pale malt (Klages, Pilsener)
- 2 pounds 40 °L crystal malt
- 2 pounds Vienna malt
- 1 pound wheat malt
- 1/3 tablespoon sea salt
- 5/8 tablespoon gypsum
- 3/4 ounce Perle hops, 8 to 11 percent alpha acid (60 minutes)
- 1/4 ounce Northern Brewer hops, 7 to 9 percent alpha acid (40 minutes)
- 1/4 ounce Hallertau hops, 3 to 5 percent alpha acid (30 minutes)
- 1 tablespoon Irish moss (15 minutes)
- Wyeast No. 1338 in one-quart starter

- Original specific gravity: 1.052
- Final specific gravity: 1.010
- IBUs: 25 to 30

Rest at 122 degrees F (50 degrees C) for 20 minutes, raise temperature 155 degrees F (68 degrees C) for one hour. Mash-out at 160 degrees F (71 degrees C). Cold condition for three weeks at 40 degrees F (4 degrees C).

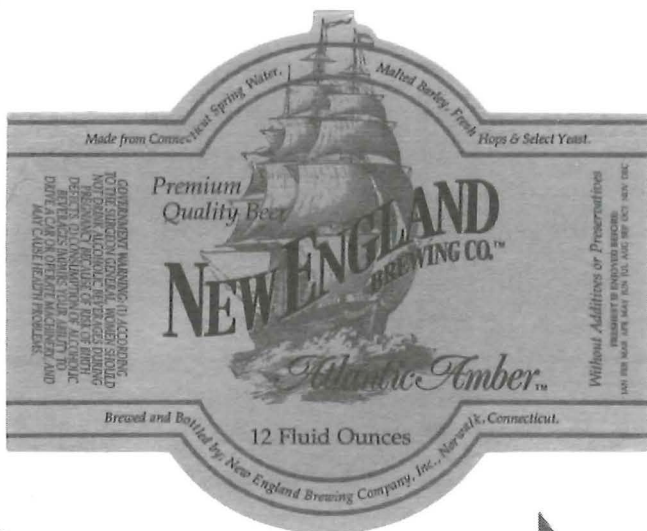
The hybrid is a moderate-colored amber beer with distinct maltiness. The generous dose of hops kicks in at the middle of the palate, followed by dryness that is not overbearing.

Next time a tasting session is arranged, treat your fellow brewers to an American-style Altbier, an emerging new style.



Widmer Alt is a top-fermented Altbier with a rich copper color and a thick creamy head. It is brewed according to an old German recipe by the Widmer family of Portland, Ore.

Altbier



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Jackson, Michael, *Michael Jackson's Beer Companion*, Running Press, 1993.

Conversation with Frank Commandy, Widmer Brewing Co., July 1994, and with Lou Farrell, Thunder Bay Brewing, June 1994.

Acknowledgments

My thanks to Frank Commandy, Widmer Brewing Co., Portland Ore.; Lou Farrell, Thunder Bay Brewing Co., Englewood, N.J.; Peter Leavitt, Sunday River Brewpub, Bethel, Maine; George Fix, brewing consultant and writer; and Eric Warner, head brewer, Tabernash Brewing Co., Denver, Colo.

A Certified BJCP judge and homebrewer, Ben Jankowski is co-founder and former president of Paumanok United Brewers, Long Island's largest homebrew club. His writing has appeared in *Ale Street News*, *BrewingTechniques* and *Celebrator Beer News*. This is his first *zymurgy* article.

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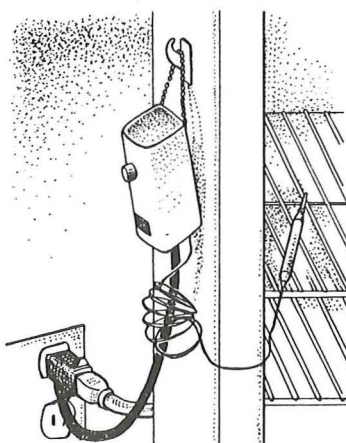
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LIGHTNING

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THE 1994 COMMEMORATIVE BREWS

By

Mark

Groshek

When AHA President Karen Barela and Administrator James Spence decided to include a commemorative mead for the first time at the 16th Annual National Homebrewer's Conference in Denver, they didn't have to look far to find their meadmaker. Phil Fleming looms large on the beer and mead scene in the Denver-Boulder area, in more ways than one. Besides winning awards for more than 12 years, being one of the first 10 people to become a BJCP Master judge, and teaching classes on brewing and judging, at 6 feet 6 inches Phil stands literally head and shoulders above the rest of the local brewing community. His meads are well-known in Boulder. "The choice was obvious," said James.

To pick the brewer of the commemorative beer, Karen and James scoured the records of recent AHA sanctioned competitions to see which local brewers were producing award-winning beers. Two things stood out about Denver brewer Tom Hail — he was winning a lot of awards, including best of show at the 1993 California Small Brewers Festival and the AHA 1993 Weiss is Nice Club-Only Competition, and first place in two German wheat beer categories at the 1993 Dixie Cup. And his beer names are rarely politically correct. So they invited Tom to brew the commemorative beer.

It didn't take Tom long to agree to brew a beer for BrewStorm '94, "about an hour and a half, I think," he said. But as Tom points out, he is not known for political correctness or sound judgment. "I think I had brain clouds as a little kid, and I was disoriented and vulnerable because of the tax season," Tom admits. Nonetheless, he began to borrow kettles, carboys and Cornelius kegs. Since he usually brews in 12-gallon all-grain batches anyway, it didn't seem all that hard to imagine brewing six batches over several weekends. "I just wasn't allowed to brew again for a while," he said.

Lightning Strikes

Phil, on the other hand, had several misgivings about making a commemorative mead. When Karen called in the fall of 1993, Phil set a lot of conditions, thinking they would nev-

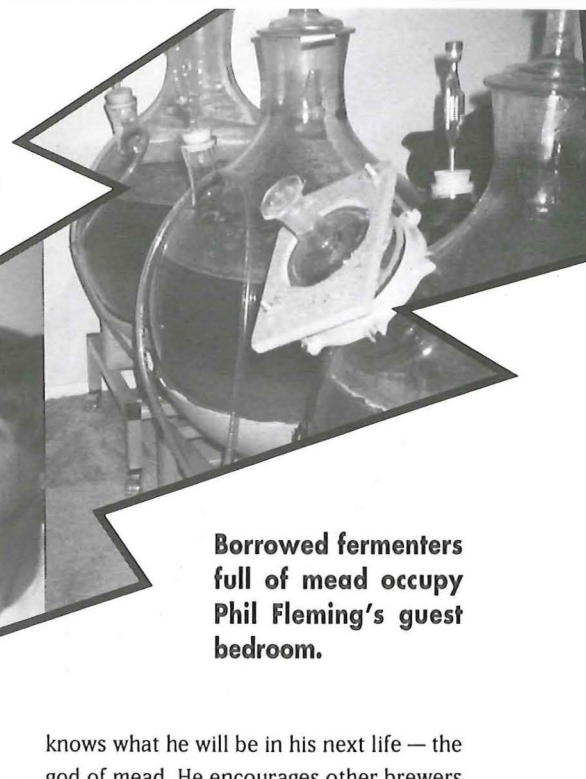
er be met. "But then one day in February all the conditions were met, so I had to make the mead," he remembered. "I still question whether it was worth it. Really, at least a year should have been allowed to make the mead but we knew this going into the project. Karen thought it would be a good learning experience to serve young mead.

Phil, an engineer by trade,

runs his own business.

He started brewing in 1982 after taking a brewing class with AHA Founder Charlie Papazian. "I wanted to make less expensive beer," he said. "It has never been cheaper, but there is no substitute for enjoying a beer with friends." Except perhaps enjoying mead with friends. With his first mead, brewed in 1990, he won third place in the traditional mead category at the AHA National Homebrew Competition. He's been making mead ever since.

Why mead? "It has a mystical, sensual quality, like the nectar of the gods," explained Phil. "There's nothing quite like that. I feel like a king when I drink mead." Phil thinks he was probably a brewer in a past life, but he

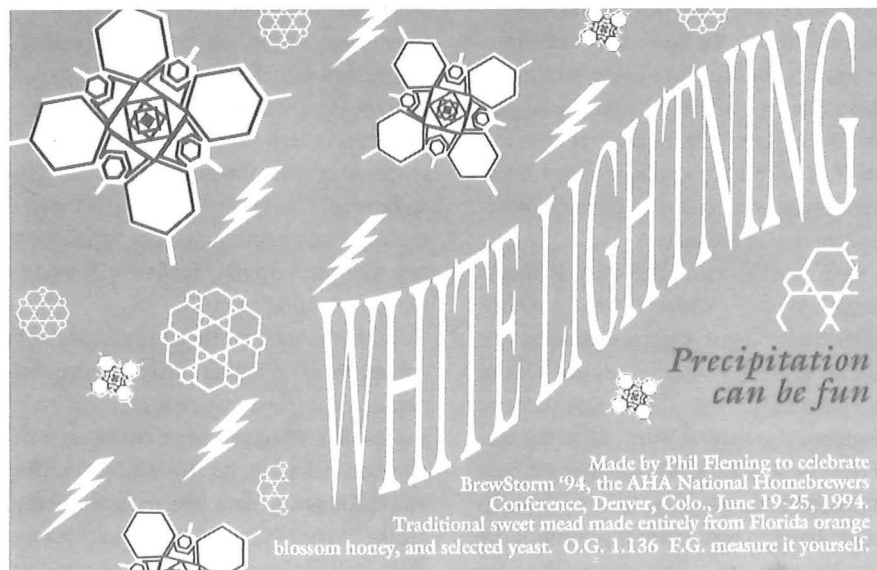


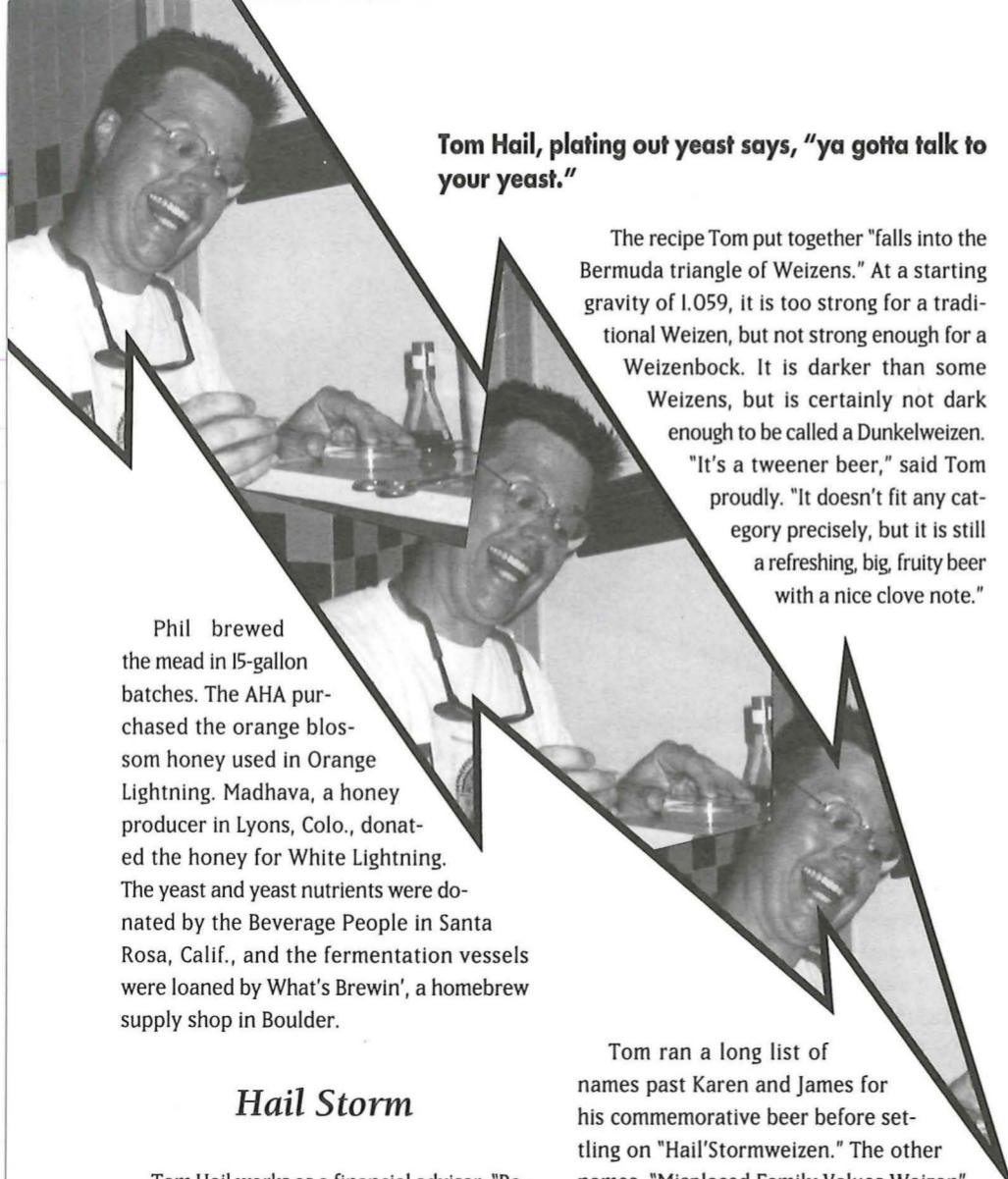
Borrowed fermenters full of mead occupy Phil Fleming's guest bedroom.

knows what he will be in his next life — the god of mead. He encourages other brewers to make meads. "They're even easier to make than beer — you don't have to boil or add hops." What you do need is patience, some fermenters you can tie up for a while, and space for fermentation. "The key to a great mead is not to rush it," said Phil.

Brewing has taken over most of Phil's house in Broomfield, Colo. His garage is filled with at least three beer refrigerators and scads of brewing gadgets. Equipment and fermenters can be found on each level of his home. The commemorative meads occupied the guest bedroom while they fermented. While he did invite friends to help with the brewing and bottling, Phil otherwise didn't have to make many accommodations to his lifestyle.

Phil actually made two meads. "White Lightning Ginger Mead" was served at the Grand Banquet at the AHA Conference, and was quite good in spite of its youth. "It should have been drier," he said. "At the time it was bottled, it was still too sweet." A second mead, "Orange Lightning," did not make it into bottles in time for BrewStorm '94, so Phil will get his wish to deliver a properly aged mead to next year's Conference in Baltimore, Md. "What I wanted to make with the White Lightning was a medium, sparkling gingered mead — almost like a Champagne," said Phil. "If I had enough time to age it, I think that's about what I would have gotten. The Orange Lightning was designed as a traditional still sweet mead, and it is still fermenting slowly."





Tom Hail, plating out yeast says, "ya gotta talk to your yeast."

The recipe Tom put together "falls into the Bermuda triangle of Weizens." At a starting gravity of 1.059, it is too strong for a traditional Weizen, but not strong enough for a Weizenbock. It is darker than some Weizens, but is certainly not dark enough to be called a Dunkelweizen. "It's a twener beer," said Tom proudly. "It doesn't fit any category precisely, but it is still a refreshing, big, fruity beer with a nice clove note."

Phil brewed the mead in 15-gallon batches. The AHA purchased the orange blossom honey used in Orange Lightning. Madhava, a honey producer in Lyons, Colo., donated the honey for White Lightning. The yeast and yeast nutrients were donated by the Beverage People in Santa Rosa, Calif., and the fermentation vessels were loaned by What's Brewin', a homebrew supply shop in Boulder.

Hail Storm

Tom Hail works as a financial adviser. "Basically, I play with rich people's money," he said. Tom brewed his first batch of beer around 1982. It must not have been particularly good, because it was more than eight years before he brewed another batch. He took up brewing again on the day the United States invaded Iraq, producing "The Great American Satan Barley Wine." He also helped brew "Bombs Away Pale Ale." He helped develop recipes for a fledgling brewpub in the Boulder area currently in search of a home. Tom has already achieved Certified BJCP judge status and continues to judge regularly in the Denver area. And though he brews many styles of beer and has won awards for a variety of them, wheat beer has become a special interest for him. His copy of Eric Warner's *German Wheat Beer* (Brewers Publications, 1992) has long since lost its cover. "I thought about making something easier," he said, "but when Karen asked me to brew I knew it would have to be a German wheat beer."

Tom ran a long list of names past Karen and James for his commemorative beer before settling on "Hail'Stormweizen." The other names, "Misplaced Family Values Weizen" (after Colorado's Amendment 2), "Pass the Potato Salad Weizen," "Airfare to Nowhere" (Tom won a roundtrip to the 1993 Great American Beer FestivalSM as a prize for his best-of-show award from the California Small Brewers Festival, but couldn't use it because he lives in Denver where the Festival is held) and "Boring Life Wheat" were creative but didn't fit the BrewStorm theme. Plus BrewStorm organizers couldn't resist incorporating Tom Hail's last name.

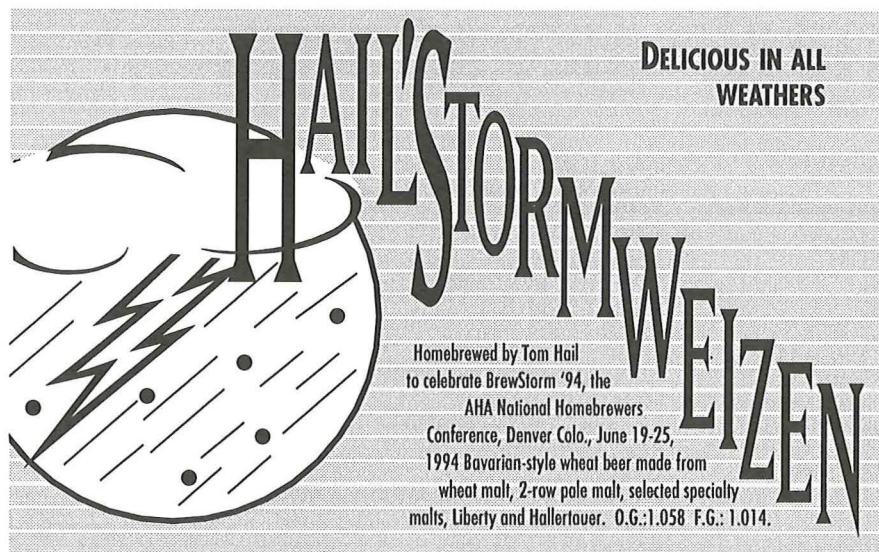
Tom assembled a crack team of assistants for the first batch. "We had two M.D.s, a Ph.D. molecular biologist, several engineers — it was an impressive team. They ate a lot of Louisiana hot links, and after eight hours we produced 12 gallons of wort." All of the other batches, which Tom made by himself, took at least two hours less. In all, he made six 12-gallon batches over several weekends. He repitched the yeast from one batch to the

next, assuring rapid fermentation. Several weeks before he produced a smaller batch of Speise, which is wort he canned for priming at bottling and kegging time. The Tabernash Brewing Co. in Denver donated the German wheat malt and Rockies Brewing Co. in Boulder donated the pale barley malt. There are two secret ingredients in Tom's beer. One is dog hair — "Well not really, but our dogs Muesse, Mike and Claire do like to carry the spoons around," Tom says. The other is a special Weizen yeast that Tom acquired from Europe. "It is fruitier than most other Weizen yeasts I've tried, and it produces a somewhat sweeter and clovier beer than most." The long list of awards he has won for his wheat beers attests to the quality of his yeast.

Tom's wife, Jennifer, keeps his brewing mania in check. The actual brewing process takes place on the back porch, but fermentation is limited to the basement. With its fairly constant temperature in the mid-60s, their basement turns out to be the perfect environment for producing excellent ales and Weizens. Tom, like Phil, has a lot of interesting brewing gadgets. "Jennifer has really been pretty supportive of my brewing," says Tom, "but she made me promise to stop brewing at home if I ever 'go pro.'"

If making the beer and mead was fairly fun, bottling was an interlude that both Tom and Phil would like to have skipped. "We made it a little easier by kegging the beer that was served at the Grand Banquet," said Tom, "but we still had to bottle 600 seven-ounce bottles to give to the Conference participants." He bottled about 200 bottles per bottling session. All the beer, bottled and kegged, was primed with unfermented wort (Speise) to allow for traditional bottle conditioning. Denver's Tabernash Brewing Co. donated space not only for the storage and cold-conditioning of Tom's beer, but also for the storage of all the beers judged in the second round of the National Homebrew Competition during BrewStorm '94.

Both Tom and Phil ran into problems with bottles. Phil's new bottles arrived too early and part of the shipment was missing. This made the task of bottling somewhat easier, since he only had enough for 48 750-milliliter bottles. Phil had hoped to have time to force carbonate the "White Lightning Ginger Mead," but the shipping problems and work left him just



enough time to get the mead bottled. Because it has not finished fermenting, the unenviable task of bottling the "Orange Lightning" in seven-ounce bottles lies in the future for Phil.

Tom's shipment of new bottles was more than a month late in arriving. "I don't think the bottled beer was quite as good as the kegged beer, because it sat on the yeast for weeks longer than it should have," said Tom. The shipping problems frustrated the AHA as well, but erratic delivery is a chronic problem faced more or less routinely by most microbreweries, who are at the mercy of the glass companies.

Phil and Tom are proud to be Colorado natives. Tom is a member and vice president ("railroaded," he said) of the Unfermentables, a Denver-area homebrew club. Phil's main club affiliation is with Boulder's Hop Barley and the Alers, but he also maintains a membership with the Unfermentables and the Fort Collins Mash Tongues. Phil is the founding member and past president of the Tall Brewers of America Club. (Those men under 6 feet 2 inches and women under 5 feet 10 inches need not apply.)

Neither Phil nor Tom have any plans to brew professionally, though both have contemplated it. Tom would jump at the chance, "but you have to remember I'm not known for my sound judgment. As the financial adviser in the family, Jennifer has made it clear that I can't take a cut in pay to brew." Phil has also thought about brewing professionally, "but I was cured of that notion when I got involved in brewing a large batch of beer."

In spite of all his achievements, "mostly I'm just a homebrewer," said Phil. "I wouldn't have it any other way."

White Lightning Ginger Mead

Phil Fleming

Ingredients for 5 gallons

- 6 3/4 pounds Madhava clover honey
- 5 1/2 pounds Madhava alfalfa honey
- 3 1/4 pounds Madhava wildflower honey
- 5 ounces fresh ginger root (smashed)
- 2 ounces Beverage People™ yeast nutrient
- 3/4 tablespoon tartaric acid
- 3/4 tablespoon acid blend
- 10 grams Beverage People™ Prise de Mousse yeast

- Original specific gravity: 1.117
- Final specific gravity: 1.020

Orange Lightning Traditional Still Sweet Mead

Phil Fleming

Ingredients for 5 gallons

- 18 1/4 pounds orange blossom honey
- 2 ounces Beverage People™ yeast nutrient

- 3/4 tablespoon acid blend
- 3/4 tablespoon tartaric acid
- 10 grams Beverage People™ 71-B yeast

- Original specific gravity: 1.136
- Final specific gravity: to be determined

Hail's Stormweizen

Tom Hail

Ingredients for 12 gallons

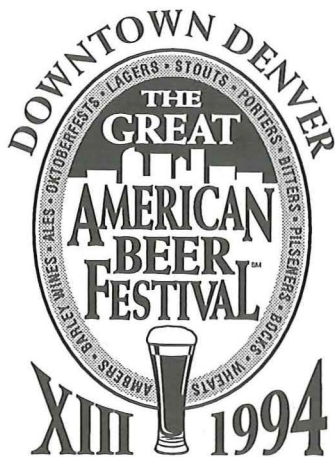
- 12 pounds German wheat malt
- 1 pound Munich malt
- 1/2 pound CaraMunich malt
- 7 pounds domestic two-row pale malt
- 1 1/4 ounce Hallertauer hop plugs
- 1 1/4 ounce Liberty hop plugs
- Hail's European Weizen yeast (you can use any wheat beer yeast)

- Original specific gravity: 1.059
- Final specific gravity: 1.014

Dough-in at 117 degrees F (47 degrees C) for 10 minutes, raise to 122 degrees F (50 degrees C) for 10 minutes, raise to 128 degrees F (53 degrees C) for 10 minutes. Remove 40 percent of the mash for decoction. Raise this portion to 160 degrees F (71 degrees C) for 15 minutes, then boil for 35 minutes. Return the decoction to the main mash and adjust to 147 degrees F (64 degrees C) for 15 minutes. Raise to 159 degrees F (71 degrees C) for 30 minutes. Raise to 170 degrees F (77 degrees C) for 10 minutes. Sparge to collect 14 gallons.

Boil for two hours with a 50/50 mixture of Hallertauer and Liberty hop plugs to give a total IBU of 14 (about 2 1/2 ounces total). Half of the hops are boiled for two hours, one-quarter for one hour and one-quarter for the last 20 minutes. Ferment at 63 degrees F (17 degrees C) for eight days. After bottling hold for five days at 63 degrees F (17 degrees C), and then cold condition at 40 to 45 degrees F (4 to 7 degrees C).

Mark Groshek is a pediatrician, bicyclist and homebrewer, though not necessarily in that order. A Certified BJCP judge who has been brewing for seven years, he is the outgoing president of the Unfermentables, a Denver-area homebrew club.



1994 GREAT AMERICAN BEER FESTIVALSM MEDAL WINNERS

ALE

AMERICAN AMBER ALE

GOLD: Alaskan Autumn Ale, Alaskan Brewing Co., Juneau, Alaska
SILVER: Capstone ESB, Oasis Brewery, Boulder, Colo.
BRONZE: DeLaveaga Red Ale, Seabright Brewery, Santa Cruz, Calif.

AMERICAN BROWN ALE

GOLD: No medal awarded
SILVER: Oregon Trail Brown Ale, Oregon Trail Brewery, Corvallis, Ore.
BRONZE: Tut Brown Ale, Oasis Brewery, Boulder, Colo.

AMERICAN PALE ALE

GOLD: Mirror Pond Pale Ale, Deschutes Brewery, Bend, Ore.
SILVER: Pier Pale Ale, Huntington Beach Beer Co., Huntington Beach, Calif.
BRONZE: Post Road Pale Ale, Old Marlborough Brewing Co., Framingham, Mass.

BARLEY WINE

GOLD: Hercules Strong Ale, Boston Beer Works, Boston, Mass.
SILVER: White Lightning, Barndo Rodeo, Arlington, Va.
BRONZE: Old Boneyards Barley Wine, Pizza Port/Solana Beach Brewery, Solana Beach, Calif.

BELGIAN-STYLE ALE

GOLD: Belgian Strong Ale, Pacific Beach Brewhouse, San Diego, Calif.
SILVER: Celis White, Celis Brewery, Austin, Texas
BRONZE: Triple, Pacific Coast Brewing Co., Oakland, Calif.

BLOND ALE

GOLD: No medal awarded
SILVER: No medal awarded
BRONZE: Big Nose Blond, McNeill's Brewery, Brattleboro, Vt.

CLASSIC ENGLISH PALE ALE

GOLD: El Toro Oro Golden Ale, El Toro Brewing Co., Morgan Hill, Calif.
SILVER: Pullman Pale Ale, Riverside Brewing Co., Riverside, Calif.
BRONZE: No medal awarded

DRY STOUT

GOLD: Out of Bounds Stout, Avery Brewing Co., Boulder, Colo.
SILVER: Zonker Stout, Snake River Brewing Co., Jackson, Wyo.
BRONZE: 7th Street Stout, Riverside Brewing Co., Riverside, Calif.

DUSSELDORF-STYLE ALTBIER

GOLD: Alt, Butterfield Brewing Co., Fresno, Calif.
SILVER: Centennial Alt, Boston Beer Works, Boston, Mass.
BRONZE: Wild Horse Ale, Great Basin Brewing Co., Sparks, Nev.

ENGLISH BROWN ALE

GOLD: Sara's Brown Ale, Yegua Creek Brewing Co., Dallas, Texas
SILVER: Ironwood Dark, Redwood Coast Brewing, Mountain View, Calif.
BRONZE: Holy Cow! Red Ale, Holy Cow! Casino, Cafe and Brewery, Las Vegas, Nev.

GERMAN WHEAT ALE

GOLD: Tabernash Weiss, Tabernash Brewing Co., Denver, Colo.
SILVER: DeGroen's Weizen Bock, Baltimore Brewing Co., Baltimore, Md.
BRONZE: Heavenly Hefe Weizen, Heavenly Daze Brewery, Steamboat Springs, Colo.

INDIA PALE ALE

GOLD: Vail Pale Ale, Hubcap Brewery and Kitchen, Vail, Colo.
SILVER: Sierra Nevada Celebration Ale, Sierra Nevada Brewing Co., Chico, Calif.
BRONZE: No medal awarded

PORTER

GOLD: Mountain Valley Porter, Mountain Valley Brewpub, Suffern, N.Y.
SILVER: Noah's Dark, Pacific Tap and Grill, San Rafael, Calif.
BRONZE: Black Jack Porter, Left Hand Brewing Co., Longmont, Colo.

SCOTTISH ALE

GOLD: Victoria Ave. Amber Ale, Riverside Brewing Co., Riverside, Calif.
SILVER: Steamboat Scottish, Heavenly Daze Brewery, Steamboat Springs, Colo.
BRONZE: Laughing Lab Scottish Ale, Bristol Brewing Co., Colorado Springs, Colo.

SPECIALTY STOUT

GOLD: Oatmeal Stout, Gray Brewing Co., Janesville, Wis.
SILVER: Boulder Stout, Rockies Brewing Co., Boulder, Colo.
BRONZE: Zoser Stout, Oasis Brewery, Boulder, Colo.

STRONG ALE

GOLD: Belk's Extra Special Bitter, Anderson Valley Brewing Co., Boonville, Calif.
SILVER: Untouchable Scotch Ale, Martha's Exchange Restaurant and Brewing Co., Nashua, N.H.
BRONZE: Mogul Madness, Rogue Ales, Newport, Ore.

TRADITIONAL BITTER

GOLD: Sawtooth Ale, Left Hand Brewing Co., Longmont, Colo.
SILVER: Four Horsemen Ale, Mishawaka Brewing Co., Mishawaka, Ind.
BRONZE: ESB, Stoddard's Brewhouse and Eatery, Sunnyvale, Calif.

LAGER

AMBER LAGER

GOLD: Sea Dog Oktoberfest, Sea Dog Brewing Co., Camden, Maine
SILVER: Rhino Chasers Dark Lager, Rhino Chasers, Culver City, Calif.
BRONZE: Textfest, Hubcap Brewery and Kitchen/Dallas, Dallas, Texas

AMERICAN DRY LAGER

GOLD: Lite Ice, Miller Brewing Co., Milwaukee, Wis.
SILVER: Olympia Dry, Pabst Brewing Co., Tumwater, Wash.
BRONZE: Icehouse, Miller Brewing Co., Milwaukee, Wis.

AMERICAN LAGER

GOLD: Grain Belt Premium, Minnesota Brewing Co., St. Paul, Minn.
SILVER: Original Coors, Coors Brewing Co., Golden, Colo.
BRONZE: Lone Star, Lone Star Brewing Co., San Antonio, Texas

AMERICAN LIGHT LAGER

GOLD: Pabst Genuine Draft Light, Pabst Brewing Co., Tumwater, Wash.
SILVER: I.C. Light, Pittsburgh Brewing Co., Pittsburgh, Pa.
BRONZE: Ice-Draft Light, Anheuser-Busch, St. Louis, Mo.

AMERICAN MALT LIQUOR

GOLD: Olde English 800, Pabst Brewing Co., Tumwater, Wash.
SILVER: Pigs Eye ICE, Minnesota Brewing Co., St. Paul, Minn.
BRONZE: Colt Ice, Carling National Brewing Co., Baltimore, Md.

AMERICAN PREMIUM LAGER

GOLD: 1857, The Lion, Wilkes-Barre, Pa.
SILVER: Signature, The Stroh Brewery Co., Detroit, Mich.
BRONZE: Budweiser, Anheuser-Busch, St. Louis, Mo.

BOCK

GOLD: Samuel Adams Double Bock, The Boston Beer Co., Boston, Mass.
SILVER: DeGroen's Doppelbock, Baltimore Brewing Co., Baltimore, Md.
BRONZE: Mai-Bock, Stoudt Brewing Co., Adamstown, Pa.

DARK LAGER

GOLD: Hefe Dunkel, Saxer Brewing Co., Lake Oswego, Ore.
SILVER: Michelob Classic Dark, Anheuser-Busch, St. Louis, Mo.
BRONZE: Denargo Lager, Tabernash Brewing Co., Denver, Colo.

EUROPEAN PILSENER

GOLD: Pilsener, Stoudt Brewing Co., Adamstown, Pa.
SILVER: Friesian Pilsener, The Leavenworth Brewery, Leavenworth, Wash.
BRONZE: Condor Lager, Irons Brewing Co., Lakewood, Colo.
HONORABLE MENTION: Hübsch Pilsner, Sudwerk Privatbrauerei Hübsch, Davis, Calif.

MUNCHENER HELLES AND EXPORT

GOLD: Hübsch Lager, Sudwerk Privatbrauerei Hübsch, Davis, Calif.
SILVER: Export Gold, Stoudt Brewing Co., Adamstown, Pa.
BRONZE: Golden Spike Lager, Tabernash Brewing Co., Denver, Colo.

MIXED STYLE

AMERICAN LAGER/ALE OR CREAM ALE

GOLD: Liebotchaner Cream Ale, The Lion, Wilkes-Barre, Pa.
SILVER: Genesee Cream Ale, Genesee Brewing Co., Rochester, N.Y.
BRONZE: Scrimshaw Beer, North Coast Brewing Co., Fort Bragg, Calif.

AMERICAN WHEAT ALE OR LAGER

GOLD: Calistoga Wheat Ale, Napa Valley Brewing Co., Calistoga, Calif.
SILVER: Whitewater Wheat Ale, Great Divide Brewing Co., Denver, Colo.
BRONZE: Weizenbier, Coors Brewing Co., Golden, Colo.

FRUIT, VEGETABLE BEER

GOLD: Pyramid Apricot Ale, Hart Brewing Inc., Kalama, Wash.
SILVER: Passion Pale, Alameda Tied House, Alameda, Calif.
BRONZE: Brewberry Pale, Pacific Tap and Grill, San Rafael, Calif.

HERB, SPICE BEER

GOLD: Cerveza Chilibeso, Great Basin Brewing Co., Sparks, Nev.
SILVER: Blue Mountain Heaven, Hubcap Brewery and Kitchen/Dallas, Dallas, Texas
BRONZE: Yule-Tied, Redwood Coast Brewing, Mountain View, Calif.
HONORABLE MENTION: Juju Ginger Ale, Left Hand Brewing Co., Longmont, Colo.

NON-ALCOHOLIC MALT BEVERAGES

GOLD: Stroh's NA, The Stroh Brewery Co., Detroit, Mich.
SILVER: O'Doul's, Anheuser-Busch, St. Louis, Mo.
BRONZE: Keene's NA, Pittsburgh Brewing Co., Pittsburgh, Pa.

SMOKE-FLAVORED BEER

GOLD: Alaskan Smoked Porter, Alaskan Brewing Co., Juneau, Alaska
SILVER: Zebulon's Peated Porter, Phantom Canyon Brewing Co., Colorado Springs, Colo.
BRONZE: Dixie Holy Smoke, Dixie Brewing Co., New Orleans, La.

SPECIALTY

GOLD: Honey Ale, Gray Brewing Co., Janesville, Wis.
SILVER: Harvest Moon Pumpkin Ale, Sharky's Brewery, Omaha, Neb.
BRONZE: Rye Bock, Steelhead Brewery and Cafe, Eugene, Ore.

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Category India Pale Ale

Category Range			
	Low	Calculated	Hi
Gravity	1.050	1.060	1.065
Alc./vol.	5	5.8%	6.5
IBU	40	52	65
Color	8	8.7	14
Terminal Gravity		1.015	

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FOR THE BEGINNER

Fred Hardy and Al Korzonas

Morten C. Meilgaard in *Evaluating Beer* (Brewers Publications, 1993) tells us that there are more than 100 separately identifiable flavor elements in beer that a good taster should detect, of which about 40 are common in most beers. Maybe so, but that first brew usually is described without using a single one of them. That's okay, but beginners should learn the accepted terms for beer flavor descriptors because we often learn through discussions with others. Unless the speaker and listener are using the same language, little communication takes place. The concepts learned here will not only help you judge your beer, but also understand the comments you get on judging forms or from experienced tasters at club meetings.

The non-technical terms we run across most often in discussions about first brews are "great," "wow" and "exciting!" Those of us who are (or were) skeptical about our ability to make beer in our own kitchen can be excused for describing the first beer in emotional terms. You wait a week after pitching the yeast and carefully lift the plastic lid of the fermenter. Your senses are assailed with the unmistakable aroma of beer! Wow, this is exciting — it's homebrew!

Before we even open the beer, we should prepare ourselves for judging. A good flossing and brushing of the teeth is important to reduce the acids that are naturally pre-

Judging Your Brew

sent in the mouth and can throw off your sense of taste. Don't partake in spicy or otherwise aggressive foods (mustard, onions, peppers, etc.) before judging — they will make evaluating subtle aromas and flavors much more difficult if not impossible. Don't wear cologne for obvious reasons and avoid

anything greasy on your lips such as lip balm which can kill an otherwise perfect beer's head retention. Don't use flowery soaps for washing your hands since they will be close to your nose when you are evaluating the aroma of the beer. Between beers, unsalted crackers or plain white bread are good for clearing

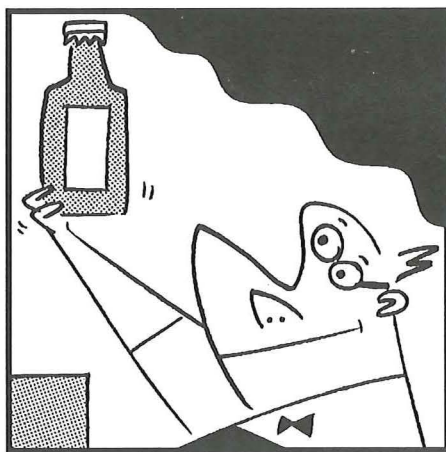
the palate followed by a sip of cool water. A comfortable, quiet, smoke-free environment is important as are clean glasses or crystal-clear plastic cups (soap residue will ruin head retention).

It is recommended you judge the qualities of the beer in the proper order, starting first, as Beer Judge Certification Program

judges do, with a bottle inspection. It is debatable whether this should be done at all and most judges agree that bottle inspection should not influence a beer's score. On the other hand, it can be important to know the fill level, for example, if the beer turns out to be oxidized. What judges usually note are the fill level, whether there is a *ring around the collar* and how the sediment looks. In the literature, fill level has been linked with over- and undercarbonation, whereas in fact, it has no effect. A low-fill bottle will produce a larger "pfffft" sound upon opening, but that's about it. A ring around the collar can be caused by an infection (a mold or an aerobic bacteria) but most often it is created by protein from priming with malt extract or wort. A longer boil and quick chilling of the primings will usually eliminate those unsightly rings. Sediment inspection will tell the judge how sticky or powdery your yeast is (how carefully it must be decanted) or if the beer has been filtered.

Once you open the bottle, you should first judge the aroma because subtle aromatics often dissipate after only a minute or two. It's a good idea to only partially fill your tasting glass with beer so you can swirl it to intensify the aroma. Some judges like to cover the glass with their hand while swirling the sample to further concentrate the aroma. Appearance (color, head retention and clarity) are often judged next. Finally, we get to taste the beer. Tasting includes not only the flavor but also several other aspects we will cover shortly.

Brewers strive to produce a beer best described as *clean*. Most commercial beers meet this criteria, and are distinguished by the lack of unpleasant aromas and/or flavors. *Off-flavors* and *off-aromas* are non-specific



Inspect the bottle.

descriptions of this fault. "Off," in this context, simply means that the brew cannot be described as clean, and something in the aroma and/or flavor detracts from the drinker's enjoyment. When assessing off-flavors and aromas, you should forget about what you might use to describe normal beer and think about *all* kinds of

aromas and flavors. Think about vegetables: cabbage, celery, corn; think about the medicine chest: Listerine, rubbing alcohol, cough syrup, plastic bandages; think about mold, about wet cardboard, about sherry, nuts and skunks. Most of these aromas and

flavors are the result of bacterial or wild yeast infections so if you detect them, your course of action should be to evaluate your sanitation techniques and the condition of your equipment. Some off-flavors are the result of mishandling of the wort or beer. These infections can't hurt you, by the way, they just make your beer less enjoyable and, technically, off.

Oxygen is the enemy of beer flavor and aroma. Except for at the start of primary fermentation, every effort should be made to prevent beer from absorbing oxygen throughout the production process. A beer that is *oxidized* and stale signals its state in both flavor and aroma. A beer that had a nice hoppy *nose* (aroma) when in its prime is telling you something when a bottle seems to have no nose at all. It is signaling that the next bottle may exhibit obvious staleness if not drunk soon. Clearly, one will heed this message and proceed to dispatch the remainder of that batch with great urgency. Beers age and oxidize at different rates, with beers having a higher (1.050 and up) starting gravity generally aging more gracefully and slowly than lower-gravity brews.

Once oxidized or stale, a brew will acquire a flavor and aroma often described as wet cardboard. When a beer has a sherrylike aroma, this usually indicates oxidation also, most

often caused by the introduction of oxygen to the wort while it is still hot. This is known as hot-side aeration and is one of the most common faults in first brews. One of the biggest improvements you can make in your process is to chill the wort before aeration.

Skunky or *catty* aromas are the result of

light affecting hop components and is thus often referred to as *lightstruck*. Some people describe the aroma as that of tomato plants. The solution is to keep the beers in the dark. (Sunlight and fluorescent lights affect the beer much more quickly than incandescent lights.)

Aromas vary widely within and between beer styles, and are an

integral part of beer enjoyment. Like many other aspects of beer, the aromas may be good or bad, or good in one style and bad in another. *Phenolic* is one such characteristic. Under phenolic comes such aromas as clove-like, spicy and Band-Aid-like. The first two are desirable in Bavarian-style Weizen, the last is not pleasant in any brew. Band-Aid-like aromas are also described as *medicinal*. Closely related is *chlorophenolic*, a similar off-aroma having its origin in, and being reminiscent of, chlorine (either from sanitizing or municipal water).

Esters are a specific group of chemicals produced by yeast when wort is fermented at warm (ale) temperatures. Esters give beer fruity flavors and aromas. These fruity flavors and aromas are the primary distinguishing factor between ales and lagers. In ales, a degree of esters is necessary for the style to be authentic, but in most lagers, esters are a fault.

Dimethyl sulfide (*DMS*) is another aromatic compound that separates ales from

lagers. It is characterized by a cooked corn aroma and is acceptable in small amounts in lagers. DMS is not welcome in ales. Elevated DMS levels are usually the result of bacterial infection, non-vigorous or covered boils, or slow cooling of the wort after the boil. Some malts are higher in the precursors of DMS than others. The paler malts, such as Pilsener malt, have more DMS precursors than darker malts such as pale ale malt.

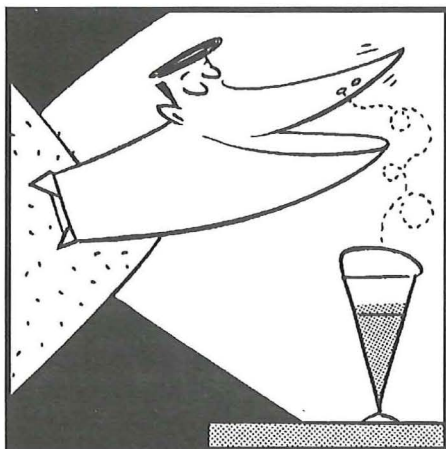
Last in this abbreviated list is *diacetyl*. Identified as a *buttery* or *butterscotch* aroma, diacetyl is a natural byproduct of fermentation. Some diacetyl is prized in most British ales, but it is not expected in lagers. Normally, yeast consumes diacetyl in the final stages of primary fermentation, but several factors may cause the yeast to fail. These include racking the brew off the yeast too soon, fermentation temperatures too cool for the particular yeast strain and introduction of oxygen during primary fermentation. Diacetyl can also be produced by certain bacteria and at very high levels can take on a rancid butter character.

Balance is a term that describes the taste effect of the hops and malt working in concert. Too much of either will tip the scale toward bitterness or sweetness. A balanced brew has a demarcation between bitter and

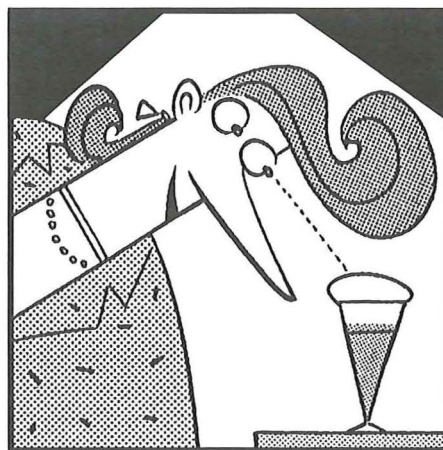
sweet that is consistent with the flavor profile of the beer's style, and is a quaffer's delight. The balance of a Scottish heavy, for example, should definitely lean toward malt whereas the balance of an India pale ale should be dominated by hop bitterness.

Sweetness, salt-

iness, sourness and *bitterness* are sensations detected by taste buds on the tongue. Sweetness detectors are predominantly on the tip of the tongue, salt mostly on the sides just behind the tip. Sweetness derived from malt may be masked by hop bitterness. A beer style that is supposed to be sweet must not be overshadowed by hop bitterness. Salt, on the



Judge the aroma.



Evaluate the appearance.

other hand, is not a desirable flavor characteristic of any beer style, however, some styles like India pale ale often have a mineral component related to salty.

Sour is a term often feared in connection with both flavor and aroma in homebrew. It is a perfectly acceptable term, and may also be described as *acidic*. Dark malts such as black patent, roasted barley and chocolate malt are more acidic than pale malts and advanced brewers will often add calcium carbonate to their brewing water to balance this acidity. When encountered in excess, this taste sensation usually derives from either acetic or lactic

acids caused by contamination. The flavor detectors are on the sides of the tongue farther back than the salt detectors.

An interesting exercise to train your taste identification is to draw three six-ounce glasses of tap water. In one, dissolve one-half teaspoon of sugar; dissolve one-fourth teaspoon of salt in the second and one-fourth teaspoon of lemon juice in the third. Taste them in turn, rinsing your mouth thoroughly with plain tap water between each tasting. Take a sip and swish it around your mouth. Spit it out and think about the taste and sensations of sweet, salty and sour. To get a feel for basic bitterness, try tasting cooled, unsweetened black coffee. The sensory effects of hop bittering and lingering astringency are detectable predominantly at the back of the tongue and in the throat.

After swallowing you have the remembrance of the beer's flavor called the *finish* or *aftertaste*. The mineral content of your brewing water has a strong effect on the beer's finish. If your water is high in sulfates (either naturally or by the addition of gypsum or Burton water salts) the bitterness of the beer will be intensified and will linger into the finish. A long, dry, lingering bitterness is a characteristic of high sulfate water such as that in famous brewing town of

Burton-upon-Trent. What beer judges call *mouthfeel* is another aspect of overall taste sensation. It includes body, *conditioning* and other mouth sensations aside from flavors. Beers that are described as bland may not lack flavor but rather what is called *body*, and are best described as characterless, watery or *thin*. These descriptions cover

beers at one end of the body spectrum. If the beer tends toward the consistency of pancake syrup it is described as *heavy*, *thick*, or *full-bodied*.

Conditioning has to do with the amount of carbonation a beer has. A beer that is gassy is often called *effervescent* or *overcarbonated* (depending

on whether the level of carbonation is right or wrong for the style) and is obvious when a sip explodes into a prickly sensation in the mouth. The opposite of the sudden release of carbon dioxide in your mouth is a beer described as *flat*. In between is the entire range of degrees of carbonation that may be appropriate for one style of beer, but not for another. Bavarian wheat beers are usually quite spritzy with carbonation and American lagers tend to be even more carbonated, but Belgian ales in general are the most highly carbonated and are often described as effervescent. English bitters are the other extreme and taste *smoother* by comparison because of their low carbonation rates.

A brew that is clearly alcoholic will be identified as *warming* or having *alcoholic heat*. This is literally the warming sensation in your mouth and throat when you taste the beer. It is slightly reminiscent of the sensation a shot of straight vodka produces. Some beer styles (barley wines, Belgian strong ales) are expected to have this warming character. Alcoholic heat also is characteristic of high-gravity ales called winter warmers brewed for consumption during the colder months. Too much alcoholic heat, called *hotness*, is a flaw identified by an un-

pleasant burning, or hot prickling sensation in the mouth and throat.

Astringency also can be classified under mouthfeel. Astringency is detectable in the aftertaste as a powdery or drying sensation in the throat, as if you swallowed finely ground chalk. To get an idea of astringency, chew a grape skin or a dark red apple peel. Usually traceable to tannins leached from grain husks, an astringent aftertaste is usually the result of boiling your grains or using high-carbonate water.

Paying close attention to the many flavors and aromas in your homebrew will not only increase your enjoyment, but will give you a firm basis of discourse to learn how to improve your beer and to help others improve theirs. You may even decide that you would like to become a beer judge. It's a tough job, but someone has to do it.

References

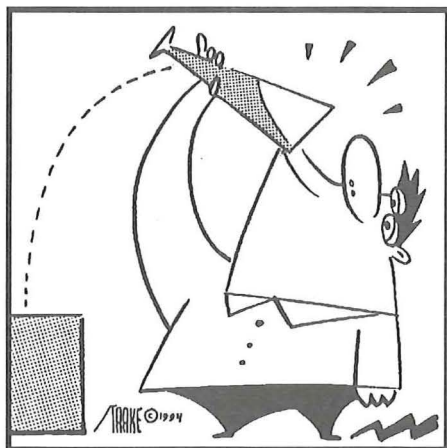
Various authors, *Evaluating Beer*, Brewers Publications, 1993.

zymurgy Troubleshooting 1987 Special Issue (Vol. 10, No. 4).

A 30-year computer industry veteran, Fred Hardy is founder of the Dulles Regional Brewing Society (Drebs), a Certified BJCP judge and has won several ribbons with his homebrews. Fred's Internet address is: fcmhb@access.digex.net.

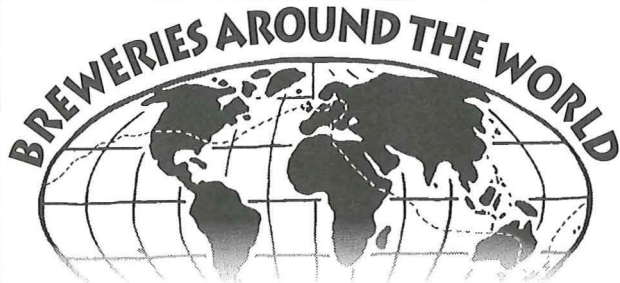
Al Korzonas, a National BJCP Judge, is a technical editor for *zymurgy*. An electrical engineer by trade, Al works as a software developer for AT&T Bell Laboratories to support his homebrewing habit. He is an active member of the Chicago Beer Society, Brewers of South Suburbia and the Urban Knaves of Grain homebrewing clubs and owns Sheaf and Vine Brewing Supply in Countryside, Ill.

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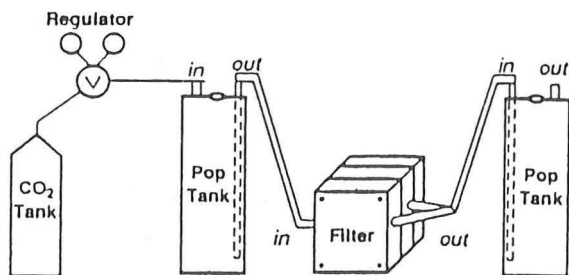
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C I R C L E

James Spence



It's time to chill out. For many folks, winter is the perfect brewing season — it's pleasant and comforting to hang around the cozy heat and sensuous aromas of the brew kettle, fermentation temperatures stay steady and cool and there are no chores to do outside. Perfect brewing conditions. The beers brewed from these recipes should be ready for late winter or spring sipping. Be sure to make enough for your friends. And, as always, brew what you brew best: your own beer made your way. If these recipes don't seem quite right for your individual brewing techniques, change them to make them your own — maybe you'll discover a better beer.

HERB BEER



SILVER MEDAL
AHA 1994 NATIONAL HOMEBREW COMPETITION
Mike Cobb
Mountain View, California
"'Bingbadaba' Chili Pepper Ale"
Herb Beer

Ingredients for 5 gallons

- 5 1/2 pounds light dry malt extract
- 1 pound Carastan malt
- 1 3/4 ounces Cluster hops, 7.4 percent alpha acid (60 minutes)
- 1 1/4 ounces Willamette hops, 4.8 percent alpha acid (20 minutes)
- 3/4 ounce Willamette hops, 4.8 percent alpha acid (five minutes)
- Wyeast No. 1007 liquid yeast culture
- 9 fresh chopped serrano chili peppers (in primary)
- 3/4 cup dextrose (to prime)

- Original specific gravity: 1.057
- Final specific gravity: 1.020
- Boiling time: 60 minutes
- Primary fermentation: seven days at 68 degrees F (20 degrees C) in plastic
- Secondary fermentation: 30 days at 68 degrees F (20 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

Steep Carastan malt for 10 minutes. Leave peppers in primary fermenter for seven days.

Judges' comments

"Malt followed by chili pepper. Slightly hot on the back of the palate. Good balance. Pepper flavor and aroma are inviting."

"Gentle up-front heat with increasing warmth in the back of the mouth. Beer characteristics hidden, but there. Peppers dominate but do not burn, a nice balance. Could use a bit more hops."

"Nice mellow chili flavor. A nice drinkable chili brew — I wouldn't change much."

"The chili flavor is very appealing. The brew is not too hot and finishes very nicely. I like the balance of the beer — it leaves my mouth wanting another sip. Good job balancing the beer, herb and heat."

GERMAN-STYLE ALE



SILVER MEDAL
AHA 1994 NATIONAL HOMEBREW COMPETITION
Dave Shaffer
Lafayette, Colorado
"Klink Kölsch"
Kölsch

Ingredients for 10 gallons

- 17 pounds Klages malt
- 2 pounds wheat malt
- 1 pound 10 °L crystal malt
- 1 ounce Hallertauer hops, 3.8 percent alpha acid (90 minutes)
- 1 ounce Hallertauer Hersbrucker hop pellets, 4.2 percent alpha acid (90 minutes)
- 1/2 ounce Saaz hop pellets, 3.9 percent alpha acid (90 minutes)
- 1 ounce Saaz hop pellets, 3.9 percent alpha acid (five minutes)
- 1/2 ounce Spalt hop pellets, 3.8 percent alpha acid (five minutes)
- 1/2 ounce Spalt hop pellets, 3.8 percent alpha acid (two minutes)
- 1 ounce Hallertauer Hersbrucker hop pellets, 4.2 percent alpha acid (two minutes)
- Wyeast No. 1056 liquid yeast culture
- 3/4 cup corn sugar per 5 gallons (to prime)

- Original specific gravity: 1.047
- Final specific gravity: 1.010
- Boiling time: 105 minutes
- Primary fermentation: 16 days at 62 degrees F (17 degrees C) in glass
- Secondary fermentation: five days at 62 degrees F (17 degrees C) in glass
- Age when judged (since bottling): three months

Brewer's specifics

Mash grains in at 124 degrees F (51 degrees C) for protein rest. Raise to 152 degrees F (67 degrees C) for 80 minutes. Raise to 163 degrees F (73 degrees C) for 10 minutes. Sparge with 170-degree-F (77-degree-C) water for 70 minutes.

Judges' comments

"Lacks Kölsch fruitiness. There is also some clinging oxidized bitterness. Color slightly dark for class."

"Some harsh flavors. Almost astringent. Hop flavor lingers. Overstated for this delicate style. Problems with recipe formulation rather than brewing techniques. Slightly too dark for style."

GERMAN LIGHT LAGER



BRONZE MEDAL

AHA 1994 NATIONAL HOMEBREW COMPETITION

Dan Leithauser
Thornton, Colorado
"Leithauslager III"
Dortmund/Export

Ingredients for 5 gallons

- 5 pounds Pilsener malt
- 3 pounds Klages two-row malt
- 1 pound 40 °L crystal malt
- 2 ounces Tettnanger hops, 5.5 percent alpha acid (45 minutes)
- 1 ounce Saaz hops, 4.8 percent alpha acid (15 minutes)
- 1 ounce Hallertauer hops, 4.9 percent alpha acid (15 minutes)
- 1 ounce Saaz hops, 4.8 percent alpha acid (finish)
- 1 ounce Hallertauer hops, 4.9 percent alpha acid (finish)
- Yeast Lab Amsterdam lager yeast culture
- 3/4 cup corn sugar (to prime)

- Original specific gravity: 1.040
- Final specific gravity: 1.006
- Boiling time: 45 minutes
- Primary fermentation: four days at 50 to 60 degrees F (10 to 16 degrees C) in glass
- Secondary fermentation: eight days at 50 to 55 degrees F (10 to 13 degrees C) in glass
- Age when judged (since bottling): 2 1/2 months

Brewer's specifics

Mash grains for three hours at 152 degrees F (67 degrees C). Sparge with 5 gallons 162- to 168-degree-F (72- to 76-degree-C) water (5.0 to 5.5 pH).

Judges' comments

"Slight oxidized flavor but malt and hops are nicely balanced. Excellent Dortmunder."

"Wonderful formulation. Balance perfect, bitterness right on. Just a little sherrylike aftertaste. May be a bit oxidized."

ENGLISH-STYLE PALE ALE



SILVER MEDAL

AHA 1994 NATIONAL HOMEBREW COMPETITION

John O'Neal
Tucson, Arizona
"Nelson's Victory Ale"
Classic English Pale Ale

Ingredients for 6 3/4 gallons

- 11 1/2 pounds Schreier two-row malt
- 1/2 pound Belgian aromatic malt
- 1/2 pound Belgian CaraPils malt
- 1/2 pound Belgian CaraVienne malt
- 2 ounces British Columbia Goldings hops, 5.3 percent alpha acid (60 minutes)
- 2 ounces British Columbia Goldings hops, 5.3 percent alpha acid (15 minutes)
- 1/2 ounce Kent Goldings hop plugs (finish)
- 1/2 ounce Fuggles hops (finish)
- 1 ounce Kent Goldings hop plugs (dry-hop two weeks in secondary)
- Wyeast No. 1968 Special London ale liquid yeast culture
- 1 1/4 cups dry malt extract (to prime)

- Original specific gravity: 1.054
- Final specific gravity: 1.012
- Boiling time: 90 minutes
- Primary fermentation: five days at 65 degrees F (18 degrees C) in glass
- Secondary fermentation: two weeks at 64 degrees F (18 degrees C) in glass
- Age when judged (since bottling): not given

Brewer's specifics

Mash-in at 127 degrees F (53 degrees C) with 4 gallons water. Raise to 142 degrees F (61 degrees C) for 15 minutes. Raise to between 152 and 154 degrees F (67 and 68 degrees C) for 30 minutes. Sparge with 6 gallons of 168-degree-F (75-degree-C) water to collect 8 gallons of wort.

Judges' comments

"Hop bitterness appropriately dominates. Smooth throughout palate. Very tasty, clean, flavorful beer. A little more hop bouquet would be nice."

"High hop bitterness is appropriate. Malty notes prevalent. Maybe slightly astringent. Maybe a little too much conditioning. I feel like I'm in England."

BOCK



SILVER MEDAL
AHA 1994 NATIONAL HOMEBREW COMPETITION
Darryl Richman
Bellevue, Washington
"Ein Bischle"
Doppelbock

Ingredients for 10 gallons

- 21 pounds pale Munich malt
- 5 pounds European two-row malt
- 1/2 pound chocolate malt
- 3 1/2 ounces Hersbrucker hops, 2.9 percent alpha acid (60 minutes)
- 1/2 ounce Northern Brewer hops, 7.4 percent alpha acid (60 minutes)
- Siebel 203/PU-D liquid yeast culture
- force carbonate in keg

- Original specific gravity: 1.074
- Final specific gravity: 1.024
- Boiling time: 60 minutes
- Primary fermentation: 20 days at 45 degrees F (7 degrees C)
- Secondary fermentation: 85 days at 34 degrees F (1 degree C)
- Age when judged (since bottling): four months

Brewer's specifics

Triple decoction mash. Dough-in at 100 to 104 degrees F (38 to 40 degrees C) for three hours while first decoction heats, 124 to 129 degrees F (51 to 54 degrees C) for two hours while second decoction heats, 142 to 145 degrees F (61 to 63 degrees C) for 70 minutes while third decoction heats, and 162 degrees F (72 degrees C) for 15 minutes. Pull first decoction at 100 degrees F (38 degrees C), raise to 130 degrees F (54 degrees C) for 30 minutes. Raise to 142 to 151 degrees F (61 to 66 degrees C) for 35 minutes. Raise to 160 to 162 degrees F (71 to 72 degrees C) for 35 minutes. Raise to boil for 30 minutes and return to rest mash. Pull second decoction and raise to 142 to 150 degrees F (61 to 66 degrees C) for 40 minutes. Raise to 157 to 161 degrees F (69 to 72 degrees C) for 45 minutes. Raise to boil for 30 minutes and return to rest mash. Pull third decoction and raise to 154 degrees F (68 degrees C) for 20 minutes. Raise to boil for 30 minutes and return to rest mash.

Judges' comments

"Malty, sweet, roasty. Low hop bitterness. No hop flavor, some DMS in flavor. Balance appropriate to style. Did I see a goat? Good beer. Could be bigger."

"A bit of astringency in finish from bitterness. Balance to hop side. Sweet and malty, fruitiness comes out, alcoholic, roasty. Reduce hop bitterness."

VIENNA/MÄRZEN/ OKTOBERFEST



SILVER MEDAL
AHA 1994 NATIONAL HOMEBREW COMPETITION
Jeff Niggemeyer
Kent, Washington
"Wizard Lager"
Vienna

Ingredients for 5 gallons

- 4 pounds Vienna malt
- 5 pounds Gambrinus pale malt
- 1/2 pound 40 °L crystal malt
- 1/2 pound dextrin malt
- 3/5 ounce Pride of Ringwood hops, 6.8 percent alpha acid (60 minutes)
- 2/5 ounce Pride of Ringwood hops, 6.8 percent alpha acid (30 minutes)
- 1 ounce Saaz hops, 6.2 percent alpha acid (finish)
- Wyeast No. 2007 Pilsener lager liquid yeast culture
- 3/4 cup corn sugar to prime

- Original specific gravity: 1.046
- Final specific gravity: 1.013
- Boiling time: 60 minutes
- Primary fermentation: 18 days at 68 degrees F (20 degrees C) in glass
- Age when judged (since bottling): not given

Brewer's specifics

Mash grains at 152 degrees F (67 degrees C) for 75 minutes.

Judges' comments

"A nice balance of flavors. Some toasted malt balanced with low hop bitterness and a touch of hop flavor. Clean as a whistle. Good job. Except for an oxidation aroma note, this one is nice and clean. Well done."

"Balance is OK. Somewhat watery in foretaste. Overcarbonated slightly. Maybe try adding more Munich malt or cutting back on hops a bit. Well-made beer."

BOCK IS BEST CLUB-ONLY COMPETITION



FIRST PLACE

Arthur Steinhoff
Burlington, Wisconsin
representing the Bidal Society of Kenosha
"Artamator"
Doppelbock

Ingredients for 6 1/2 gallons

- 13 pounds Belgian two-row malt
- 1 1/2 pounds aromatic Munich malt
- 1 pound 40 °L crystal malt
- 4 pounds Muntona bock malt extract
- 1 ounce Hallertauer hops (60 minutes)
- 1 ounce Hallertauer hops (35 minutes)
- 1/2 ounce Tettnanger hops (five minutes)
- Wyeast Bavarian lager liquid yeast culture
- 3/4 cup dry malt extract (to prime)

- Original specific gravity: 1.076
- Final specific gravity: 1.015
- Boiling time: 90 minutes
- Primary fermentation: seven days at 52 degrees F (11 degrees C) in stainless steel
- Secondary fermentation: 90 days at 36 degrees F (2 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

Mash grains at 156 degrees F (69 degrees C) for 60 minutes.

Judges' comments

"Nice clean flavor, well balanced, with pronounced alcohol notes. Needs a bit more bittering hops in the finish of the flavor. Pleasing beer overall."

"Wow! Wicked good malt and slight hop flavor but the bitterness is appropriate. Slight buttery note in middle of tongue but OK. Warming in alcohol. Just like the Salvator I had last night."

"Beautiful sweetness. Well-mannered and clean. Very nice beer."

STOUT BOUT CLUB-ONLY COMPETITION



FIRST PLACE

Terry Boyles
Riverside, California
representing the Inland Empire Brewers
"Stimperial Stout"
Imperial Stout

Ingredients for 3 gallons

- 8 pounds Klages malt
- 6 ounces black patent malt
- 12 ounces roasted barley
- 8 ounces CaraPils malt
- 3 1/2 pounds Alexander's malt extract
- 2 ounces Kent Goldings hops, 5.7 percent alpha acid (60 minutes)
- 1 ounce Willamette hops, 5 percent alpha acid (five minutes)
- Wyeast London ale liquid yeast culture
- 4 ounces molasses
- 4 ounces lactose

- Original specific gravity: 1.099
- Final specific gravity: 1.030
- Boiling time: 90 minutes
- Primary fermentation: 15 days at 70 degrees F (21 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

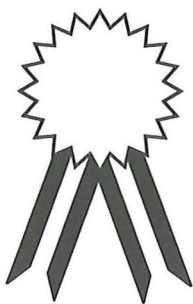
Mash grains at 155 degrees F (68 degrees C) for 90 minutes. Add molasses and lactose at bottling.

Judges' comments

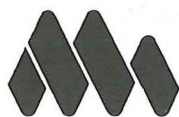
"Now this is an imperial. Volume turned to 11 but still balanced. Very nice!"

"Good malt flavor and hop balance. Aftertaste OK. Good overall flavor with alcohol aftertaste."

"Great beer. If you were to use a lager yeast on the same recipe you would have an outstanding doppelbock."



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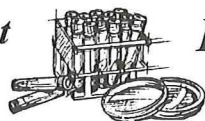
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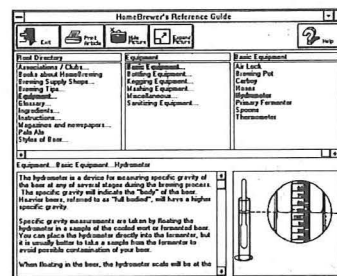
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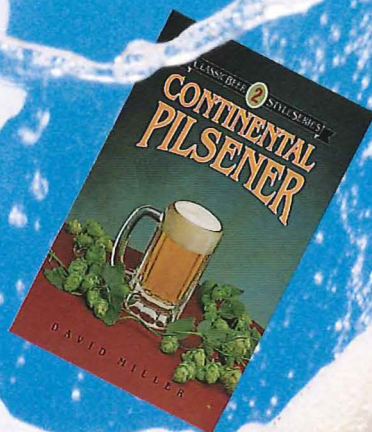
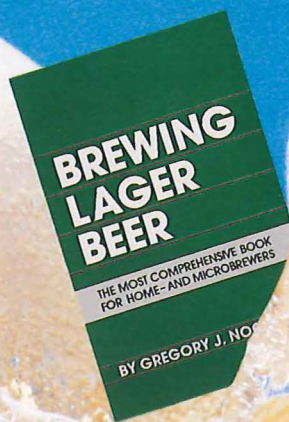
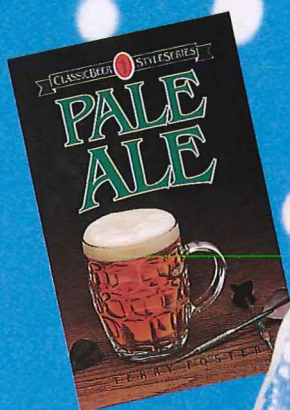
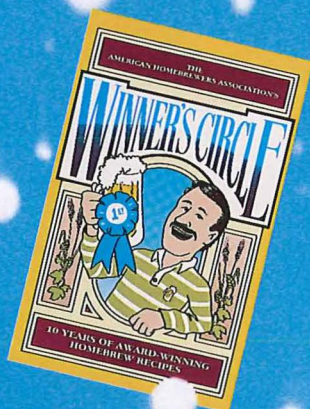
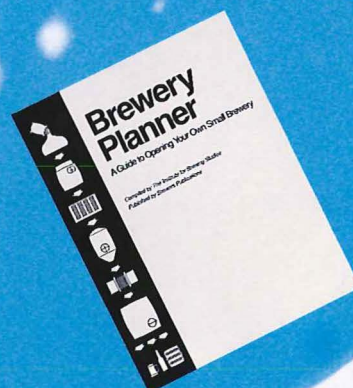
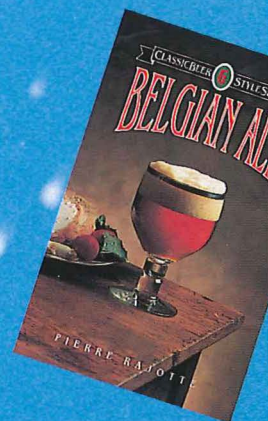
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WORLD OF WORTS

Charlie Papazian

Thistle Do-It Export Pilsener

Welllll, it started out, at least in my mind, as a classic German-style Pils but, like many good recipes, things don't exactly turn out the way you expect them to. I admit I did have the option to add more water and get my gravity back into the range of what I personally consider a German-style Pilsener to be, but after two homebrews consumed during the process I decided to leave well enough alone and let 'er rip. I was shooting for about 1.043 and ended with 1.050. What to do? Easy — relax, have another homebrew and call it Export Pilsener right then and there. Having fermented and cold lagered this Pilsener for a couple of months I have no doubt that Thistle Do-It. A wonderfully hoppy, clean, crisp yet malty extra-strength Pilsener-style lager, enhanced by cool fermentation and slow cold lagering — and noticeably excellent head retention.

This is a mash-extract recipe; however, malt extract brewers can substitute the grain malts with a tad more than three pounds of dried amber malt extract.

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

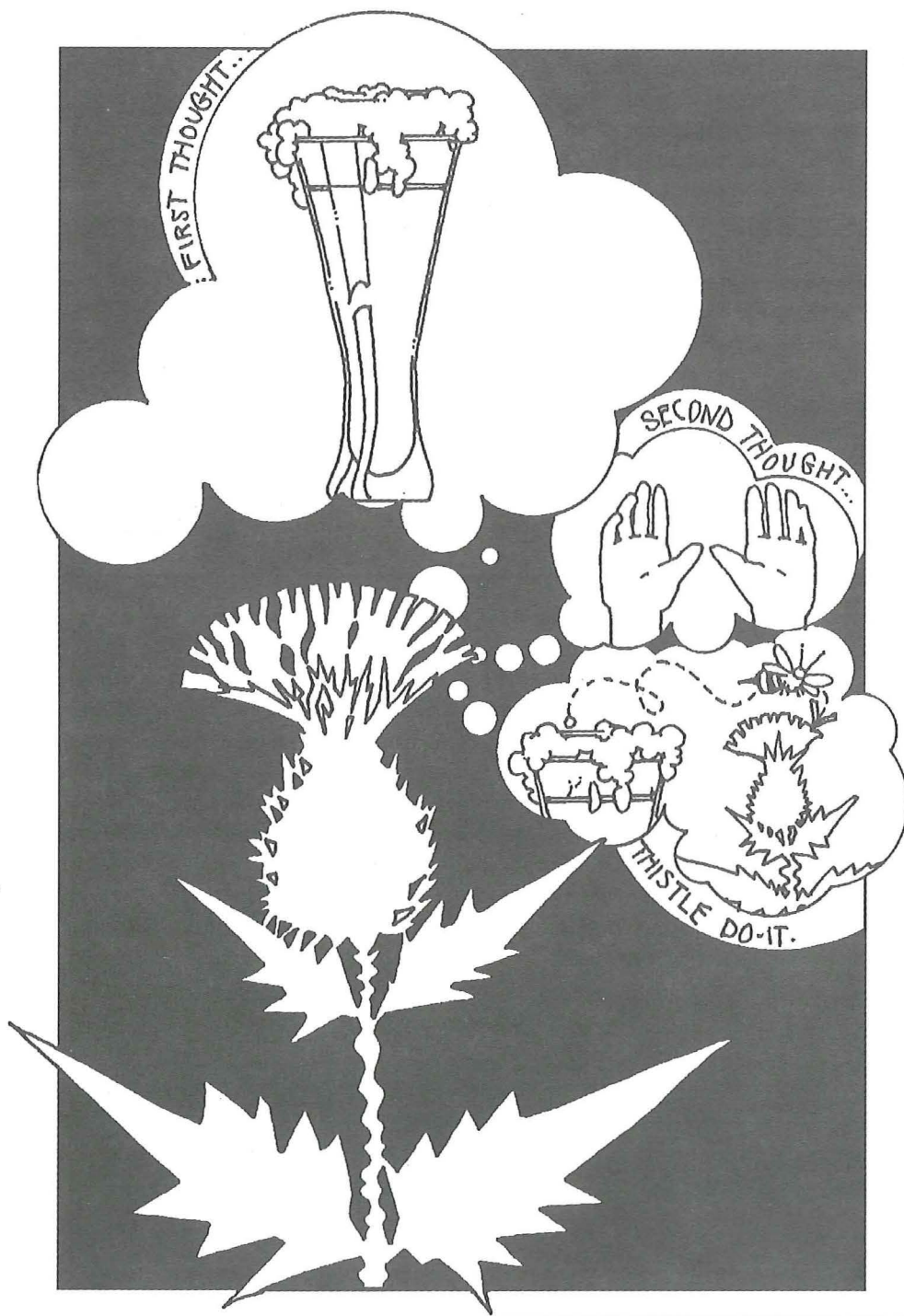


ILLUSTRATION BY STEVE LAWING

ZYMURGY Winter 1994

Mash-extract recipe for 5 gallons (19 liters)

For the mash

- 3 pounds (1.36 kilogram) two-row Pils or pale malt
- 1/2 pound (0.23 kilogram) Munich malt
- 7/10 pound (0.32 kilogram) light German crystal malt or dextrin malt

Add to the mash runoff

- 3 1/2 pounds (1.58 kilograms) light dried malt extract

And boil with hops

- 6 Homebrew Bittering Units. I used 1/4 ounce (7 grams) German Northern Brewers whole hops, 9 percent alpha acid; 1/2 ounce (14 grams) German Hersbrucker whole hops 3 percent alpha acid; and 1/2 ounce (14 grams) Czech Saaz whole hops, 3.7 percent alpha acid.
- 3 Homebrew Bittering Units of flavor hops. I used 3/4 ounce (21 grams) of Czech Saaz whole hops, 3.7 percent alpha acid, for 30 minutes.
- 3 Homebrew Bittering Units of late flavor hops. I used 1 ounce (28 grams) German Hersbrucker whole hops, 3 percent alpha acid, for 15 minutes.
- 1/4 teaspoon Irish moss (15 minutes)
- 1 ounce American Tettnanger hops for aroma
- 1/2 ounce German Hersbrucker hops for aroma
- 1/4 ounce Czech Saaz hops for aroma

Pilsener-style lager yeast is recommended

- 3/4 cup (177.4 milliliters) corn sugar (to prime)

- Original gravity: 1.048 to 1.052 (12 to 13 °B)
- Final gravity: 1.010 to 1.014 (2.5 to 3.5 °B)
- IBUs: about 35

Use a step infusion mash. Add 4 quarts (3.8 liters) of 135-degree-F (57-degree-C) water to the crushed grain, stir, stabilize and hold the temperature at 130 degrees F (54 degrees C) for 30 minutes. Add 2 quarts (1.9 liters) of boiling water and stabilize temperature at about 148 to 152 degrees F (64 to 67 degrees C) and hold for about 45 minutes. Temperature may be allowed to drop from 152 to 148 degrees F (67 to 64 degrees C) with no worrying. Then raise temperature to 160 degrees F (71 degrees C) and hold for five to 10 minutes to complete conversion.

After conversion, raise temperature to 167 degrees F (75 degrees C), laut and sparge with 2 gallons (7.6 liters) of 170-degree-F (77-degree-C) water. Collect about 2 1/2 to 3 gallons (9.5 to 11.4 liters) of runoff and add the malt extract and bittering hops then bring to a full boil.

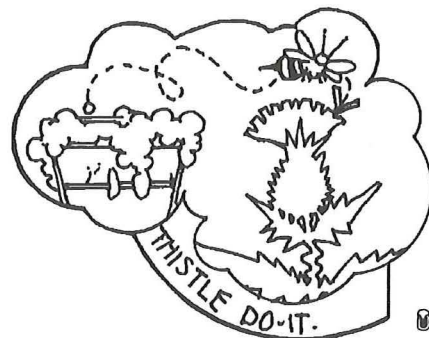
The total boil time will be about 70 minutes. Strain wort into a sanitized fermenter to which you've added 2 gallons of cool water. It helps to prechill the water to 33 degrees F (1 degree C) before adding to the fermenter rather than simply adding warmer tap water.

IBU bitterness of about 35 IBUs were calculated for this recipe by making the following assumptions: (1) Whole hops were used, (2) The wort boil was a concentrated boil with about

2 pounds (0.9 kilograms) of extract per gallon (3.8 liters) of liquid boiled, (3) 26 to 27 percent utilization was assumed for 70 minutes of boiling, 13 to 14 percent utilization was assumed for 30 minutes of boiling and 7 percent utilization was assumed for 15 minutes of boiling. Beginners and intermediate brewers should relax, don't worry and have a homebrew.

Primary ferment at temperatures between 50 and 65 degrees F (10 and 18 degrees C) with lager yeast. Rack your brew after primary fermentation into a secondary fermenter and lager at 38 to 45 degrees F (3 to 7 degrees C) for four to six weeks. Prime with sugar and bottle when fermentation is complete.

Yep, with your first taste of this brew I'm sure you will agree that Thistle Do-It is the beer that arouses your appetite.



Bittering Units

Homebrew Bittering Units 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: $(2 \times 9) + (3 \times 5) = 18 + 15$. 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:

$$\text{IBU} = \frac{1 \times 6 \times 25}{5 \times 1.34} = 22 \text{ IBUs.}$$

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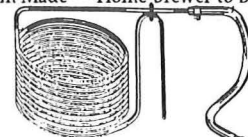
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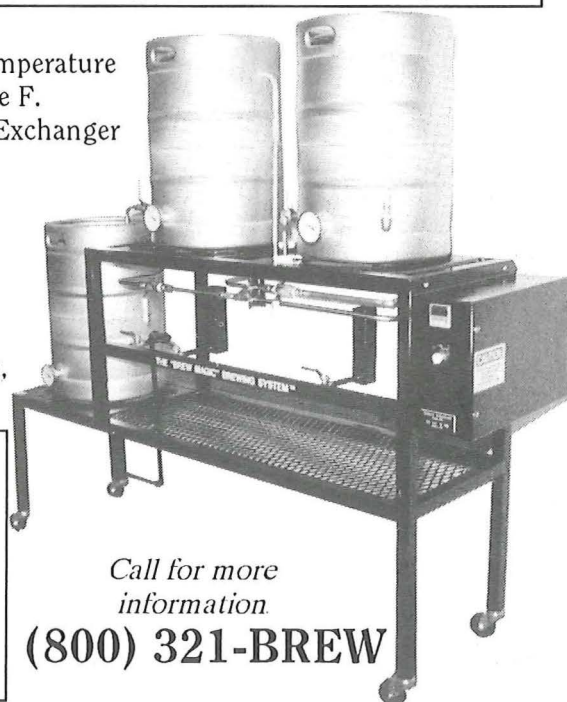
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Professor Surfeit

DEAR

P R O F E S S O R

Thick Wort Inefficiency

Dear Professor Surfeit,

I am going to make an imperial Russian stout and to get an idea for a recipe I looked at Dave Hammaker's winning recipe in "Winners Circle" *zymurgy* 1991 Special Issue (Vol. 14, No. 4). The guideline for style in the same issue shows a specific gravity of 1.075 to 1.090 and a bittering rate of 50 to 80 IBUs. Dave's recipe calculates to a bittering rate of 170+ IBUs according to the formulas in *zymurgy* 1990 Special Issue (Vol. 13, No. 4). The rate is probably higher because I left out the gravity adjustment. Even accounting for the higher specific gravity in Dave's recipe, how can a brew that has twice the maximum bittering rate for the style be as palatable as the judges clearly preferred? I understand how a style has a broad range but this recipe seems to be clearly out of the range. I need some help understanding so I can build my own recipes.

Yours truly,
Rob Brunner
Windsor, Colorado

Dear Rob,

At first glance I can understand why you would be flabbergasted, but on closer examination it is reasonable; on the high end, but reasonable. Let's take a look at Dave's recipe.

He is using about 17 pounds equivalent of malt extract for a five-gallon batch. Assuming he is boiling a total volume of three gallons, this equals a utilization efficiency of no more than 18 percent for the 45-minute boiling of hops, or the equivalent of about 36 Homebrew Bittering Units. The bitter-

ness utilization from the 15-minute boil in this thick wort is no more than 5 percent. So using the formula for five gallons of brew:

*IBU = HBU × % utilization ÷ 6.7 one gets:
96.7 IBU = 36 × 18 ÷ 6.7 plus
7.5 IBU = 10 HBU × 5 ÷ 6.7*

for a grand total of about 104 IBUs. And that is the top end of efficiency for such a gruelingly thick boiled wort. There may have been additional losses caused by blowoff and aging. Getting it down to the range closer to the 80 which you observed as a standard.

Obviously my reasoning is not exact, but given the circumstances I think it is reasonable, especially since he won.

*Numbing numbers,
The Professor, Hb.D.*

Chilling Questions

Dear Professor Surfeit,

Just a couple of questions from a couple of really relaxed homebrewing roadies. First, why do you boil your malt extracts in only 1 1/2 gallons of water and then add three gallons of cold water? Why not boil the extracts in 4 1/2 gallons of water and cool it using a wort chiller, as you would with, say, iced tea or coffee? Second, a chilling question — we are planning to brew a batch on our tour bus with an ambient temperature of about 80 degrees F (20 degrees C). Should we chill the wort to your suggested ideal temperature of 68 to 78 degrees F (20 to

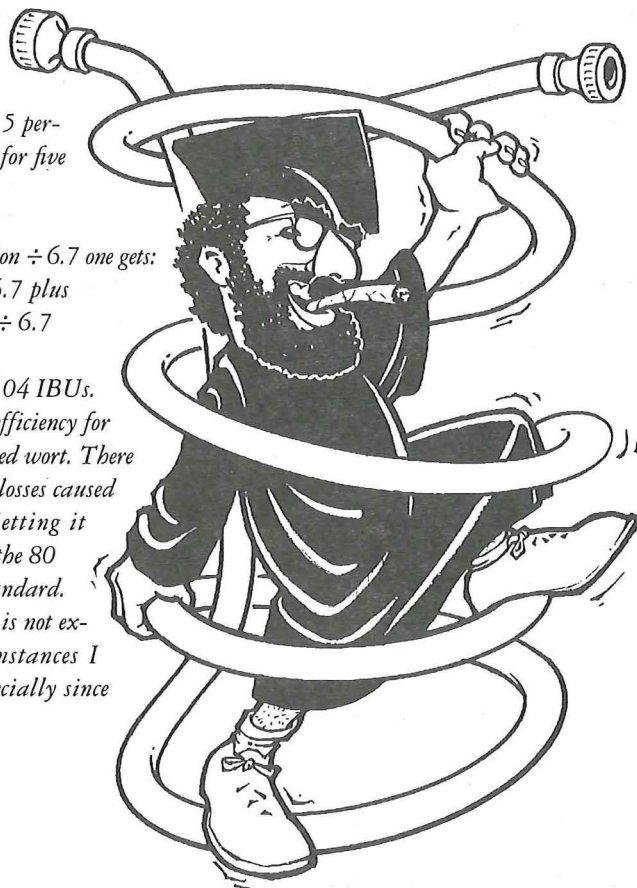
26 degrees C) and allow it to warm to the ambient temperature, or should we just chill the wort to our attainable temperature of 80 degrees F (27 degrees C) to begin with?

Sincerely,
Scott Holthaus and Bill Szolska
San Marcos, California

Dear Scott and Bill,

Why not, you ask? For me it's easier to do partial boils and I don't have to hassle with wort chillers. That's all.

I'd cool your wort to 68 to 78 degrees F (20 to 26 degrees C) in the beginning. A lot



of esters are produced in the beginning of the fermentation process and you might be able to minimize this some by starting off cool, dudes.

Duding off,
The Professor, Hb.D.

How to Lager

Dear Professor Surfeit,

I've been homebrewing now for a little more than a year, and recently had the good fortune to obtain a second refrigerator for homebrewing purposes. I have wanted to try to brew some of the recipes I've seen in *zymurgy* and noticed several call for secondary fermenting at controlled temperatures. I read somewhere that after secondary fermenting one should add yeast to the wort to make sure active yeast is present to ferment out the priming sugar. Is this the proper method or not? Should the primary fermenting be done in plastic and secondary in glass, or vice versa? What are proper fermenting temperatures? It seems the more I learn the more confused I get.

Sincerely,
Paul Tatarka
Twin Bridges, Montana

Dear Paul,

First of all, you forgot, relax.

A one- or two-month secondary should not necessitate adding more yeast at bottling. It won't hurt, but don't worry.

Doing lager beer in the fridge? Use glass or stainless steel all the way is my recommendation. Plastic is pretty dependable if you keep it scrupulously clean, but there is more risk, regardless. For certain use glass for the secondary. If you don't want to read any more about lagering beers and wish to do it anyway, have a homebrew, then primary ferment at about 50 to 55 degrees F (10 to 13 degrees C) after pitching a large starter at about 60 to 65 degrees F (16 to 18 degrees C). After the beer is done with primary fermentation and racked, you could lager at about 45 degrees F (7 degrees C). But if you read more you will find more specific data and ranges for different kinds of lager yeast used.

Can't wait to try your first true lager,
The Professor, Hb.D.

Still Secondary

Dear Professor Surfeit,

I am trying really hard to relax and not worry and I have certainly had many homebrews; however, anxiety has taken hold. I write to you because my various homebrew suppliers just don't have answers for me and I thought you might.

My ales are working fine but my lagers cause much worrying. I brew with liquid yeast and my primary fermentations are in a glass carboy. After very successful primary (much activity and kraeusens) when only two or so blubs per minute go through the airlock, I rack with great care to a secondary fermenter. Then nothing. Specific gravity is still only halfway down after a week. This happened twice now (egads, 10 gallons). Am I leaving all the yeast behind with the sediment? I don't see that mentioned in Charlie Papazian's book, *The New Complete Joy of Home Brewing* (Avon Books, 1991), but is it possible? The first time this happened I had to jump start everything with amylase and nutrients.

As I said, my ales carry on nicely in secondary, this is only a problem with my lagers. (Not really lagers, I am brewing at room temperature to make a steam beer.)

With unfortunate anxiety,
David Savage
East Falmouth, Massachusetts

Dear David,

Don't worry. Your fermentation sounds quite normal. Fermentation frequently will appear to have totally stopped after racking. But don't forget there's a lot of dissolved carbon dioxide in your primary fermentation that agitated out of solution when you siphoned. Then whammo, your secondary is quiet. The beer will not begin to show signs of CO₂ evolution until it resaturates, i.e., the initial CO₂ that is produced by the yeast in the secondary will go into solution to replace the CO₂ that came out during siphoning. Relax. Don't worry. Have a homebrew.

Evolving gas,
The Professor, Hb.D.




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New product descriptions submitted by manufacturers and distributors are printed here for reader information. These claims are made by manufacturers and/or distributors and do not imply testing by *zymurgy*. For listing information call (303) 447-0816 and talk to Linda Starck, Ext. 109, or Bob Stephan, Ext. 108.

"Spritzer" Device

The new Super Spritzer from Cooler Carbonations features a high-density plastic, two-liter carbonation bottle with a wide-mouth lid. The needle valve screw-on carbonation cap holds pressure indefinitely, and can inject 120 pounds of CO₂. Included in the package is a slip-fit air line and a hose barb that connects to your regulator and CO₂ tank.

Brewers can carbonate beer in five minutes, rather than waiting for bottle conditioning.

Manufacturer's suggested retail price is \$29.95 for the Super Spritzer, or \$149.95 for Super Spritzer plus CO₂ and regulator. For information contact Cooler Carbonations, 1005 North St., Santa Rosa, CA 95404; (800) 926-4301.

Multimedia Homebrewing Guide

HomeBrewer's Assistant, from HomeBrewer's Software of Charlotte, N.C., is a multimedia computer program to assist beginning and advanced homebrew enthusiasts. It maintains recipes, brewing logs and calculates such details as estimated alcohol content, gravities, bitterness and color and includes several dozen recipes to which homebrewers can add their own.

HomeBrewer's Assistant uses the multimedia capabilities of Microsoft Windows as part of a reference guide to illustrate the steps, tips, equipment and ingredients. The guide features an information browser that

lets the homebrewer search through hundreds of articles, references and hierarchical information trees. HomeBrewer's Assistant also includes a list of addresses and phone numbers of homebrewer associations, clubs and brewing supply shops to which the user can add. Listings of several supply shops are included in the software.

The package includes a label design feature and is available for \$29.95 plus \$3 for shipping and handling. For information contact HomeBrewer's Software, 6617 Wannamaker Lane, Charlotte, NC 28226, call (800) BRWSOFT or (704) 544-0137, or e-mail brewsoft@cybernetics.net.

Keg-A-Liter System

The new Keg-A-Liter System from Great Lakes Brew Supply gives brewers a new way to bottle beer. The system contains a new product called the Tap-Cap that can turn any two-liter bottle into a beer-tapping system. A Tap-Cap is comprised of a cap that screws onto a two-liter soda bottle, a rubber seal that fits inside the cap and a tube that extends to the bottom of the bottle. Optionally, a check valve can be purchased for the Tap-Cap that enables you to remove the system from the CO₂ tank and still have draft beer.

The standard Keg-A-Liter System comes with four Tap-Caps, six regular caps, 10 feet of tube, two check valves, two faucets and complete instructions. Connect the "out" side of the first Tap-Cap to the "in" side of the sec-

ond Tap-Cap, the second to the third, and so on until you get the configuration you want. The Keg-A-Liter System allows you to continuously tap several gallons of beer, and also allows you to force carbonate your beer for immediate consumption.

Manufacturer's suggested retail price is \$33.56. Individual Tap-Caps are \$4.85. For information, contact Great Lakes Brew Supply, PO Box 8, Endicott, NY 13761-0008, or call (800) 859-4527.

Labeling Software

Practical Products Co. of Mission Viejo, Calif., has introduced Private Label, a bottle labeling software package for homebrewers and microbreweries. Private Label runs on any IBM compatible computer running Microsoft Windows.

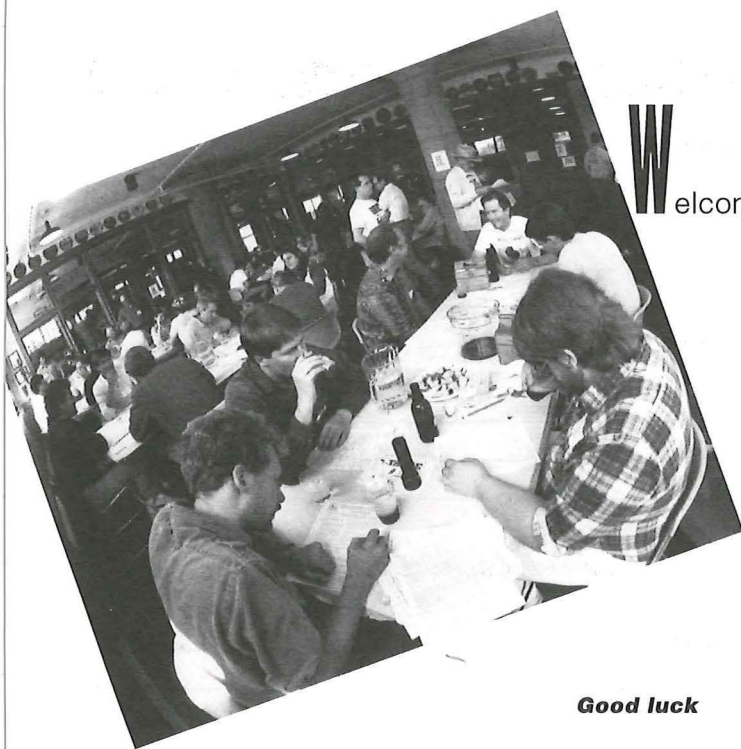
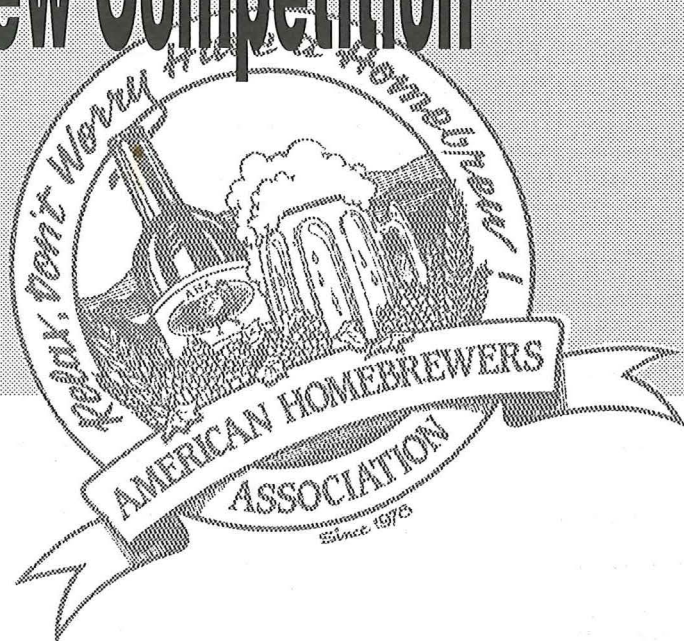
With this software, homebrewers can produce custom finished label art and print to a choice of many printers supported by Microsoft Windows. For professional users, Private Label can export label art in common file formats for printing at high-resolution service bureaus.

The Private Label software package includes the following as an introductory offer: Private Label software, free sample clip art, free sample fonts, free perforated paper stock and "easy off" glue. Manufacturer's suggested retail price is \$49, plus \$4.95 for shipping and handling (California residents add 7.75 percent sales tax). For information, contact Practical Products Co., Fernbrook Business Center, 21595 Fernbrook, Mission Viejo, CA 92692; (714) 768-3398.

Compiled by Bob Stephan, advertising assistant.

American Homebrewers Association

1995 National Homebrew Competition Rules and Regulations



Good luck

in the American Homebrewers

Association 1995 National Home-

brew Competition. Please follow all

the instructions carefully. If you

have any questions, call James at

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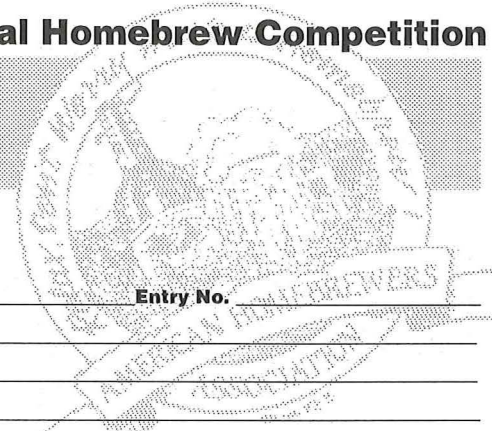
Welcome to the largest homebrew competition in the world!

In 1994, 3,060 homebrewed beverages were evaluated by nearly 300 judges. We expect more than 3,300 entries to compete in the American Homebrewers Association 1995 National Homebrew Competition. The Competition is an enormous undertaking, and we'd like to thank all of the sponsors and volunteers whose determination and enthusiasm for homebrewing has made the Competition a success over the years. A total of 16,758 homebrews have been judged in the 16 years of competition.

If you have entered the Competition before, welcome back! We're glad the experience was worthwhile for you, and we thank you for your continued support. If this is your first time entering, don't panic – this isn't rocket science – just read these rules and regulations carefully, and if you have any questions, give us a call.

We'd like to emphasize that the style guidelines listed in this brochure are just that – guidelines. Judges do not see your recipe form. We have provided the guidelines so you can decide the category in which your brew will perform best because judges will use these guidelines when evaluating your entry. You will not be disqualified if your beer falls somewhat outside of the category guidelines listed.

1995 Beer Score Sheet



DESCRIPTOR DEFINITIONS

✓ **CHECK WHENEVER APPROPRIATE**

- ☐ **Acetaldehyde**—Green applelike aroma; byproduct of fermentation.
- ☐ **Alcoholic**—The general effect of ethanol and higher alcohols. Tastes warming.
- ☐ **Astringent**—Drying, puckering (like chewing on a grape skin) feeling often associated with sourness. Tannin. Most often derived from boiling of grains, long mashes, oversparging or sparging with hard water.
- ☐ **Bitter**—Basic taste associated with hops; braun-hefe or malt husks. Sensation experienced on back of tongue.
- ☐ **Chill haze**—Haze caused by precipitation of protein-tannin compound at cold temperatures. Does not affect flavor. Reduction of proteins or tannins in brewing or fermenting will reduce haze.
- ☐ **Chlorophenolic**—Caused by chemical combination of chlorine and organics. Detectable in parts per billion. Aroma is unique but similar to plasticlike phenolic. Avoid using chlorinated water.
- ☐ **Cooked Vegetable/Cabbagelike**—Aroma and flavor often due to long lag times and wort spoilage bacteria that later are killed by alcohol produced in fermentation.
- ☐ **Diacetyl/Buttery**—Described as buttery, butterscotch. Sometimes caused by abbreviated fermentation or bacteria.
- ☐ **DMS** (dimethyl sulfide)—A sweet, cornlike aroma/flavor. Can be attributed to malt, short or non-vigorous boiling of wort, slow wort chilling or, in extreme cases, bacterial infection.
- ☐ **Fruity/Estery**—Similar to banana, raspberry, pear, apple or strawberry flavor; may include other fruity/estery flavors. Often accentuated with higher temperature fermentations and certain yeast strains.
- ☐ **Grainy**—Raw grain flavor. Cereallike. Some amounts are appropriate in some beer styles.
- ☐ **Hoppy**—Characteristic odor of the essential oil of hops. Does not include hop bitterness.
- ☐ **Husky**—See Astringent.
- ☐ **Light-Struck**—Having the characteristic smell of a skunk, caused by exposure to light. Some hops can have a very similar character.
- ☐ **Metallic**—Caused by exposure to metal. Also described as tinny, coins, bloodlike. Check your brewpot and caps.
- ☐ **Oxidized/Stale**—Develops in the presence of oxygen as beer ages or is exposed to high temperatures; winy, wet cardboard, papery, rotten vegetable/pineapple, sherry, baby diapers. Often coupled with an increase in sour, harsh and bitter. The more aeration in bottling/siphoning or air in headspace, the more quickly a beer will oxidize. Warm temperatures dramatically accelerate oxidation.
- ☐ **Phenolic**—Can be any one or combination of a medicinal, plastic, electrical fire, Listerinlike, Band-Aidlike, smoky, clovelike aroma or flavor. Most often caused by wild strains of yeast or bacteria. Can be extracted from grains (see astringent). Sanitizing residues left in equipment can contribute.
- ☐ **Salty**—Flavor associated with table salt. Sensation experienced on sides of tongue. Can be caused by presence of too much sodium chloride, calcium chloride or magnesium sulfate (Epsom salts); brewing salts.
- ☐ **Solventlike**—Flavor and aromatic character of certain alcohols, often due to high fermentation temperatures. Like acetone, lacquer thinner.
- ☐ **Sour/Acidic**—Pungent aroma, sharpness of taste. Basic taste like vinegar or lemon; tart. Typically associated with lactic or acetic acid. Can be the result of bacterial infection through contamination or the use of citric acid. Sensation experienced on sides of tongue.
- ☐ **Sweet**—Basic taste associated with sugar. Sensation experienced on front tip of tongue.
- ☐ **Sulfurlike(H₂S; hydrogen sulfide)**—Rotten eggs, burning matches. Is a byproduct with certain strains of yeast. Fermentation temperature can be a factor of intensity. Diminishes with age. Most evident with bottle-conditioned beer.
- ☐ **Yeasty**—Yeastlike flavor. Often due to strains of yeast in suspension or beer sitting on sediment too long.

Scoring Guide

Excellent (40-50): Exceptionally exemplifies style, requires little or no attention.

Very Good (30-39): Exemplifies style well, requires some attention.

Good (25-29): Exemplifies style satisfactorily, but requires attention.

Drinkable (20-24): Does not exemplify style, requires attention.

Problem (<20): Problematic, requires much attention.

Please use other side for additional comments.

Round No. _____ Entry No. _____

Category No. _____

Subcategory (spell out) _____

Judged By (please print) _____

Judge Qualifications (check one):

Recognized ☐ Certified ☐ National ☐ Master ☐

Experienced (but not in BJCP) ☐ Apprentice or Novice ☐ Other ☐

Bottle Inspection Comments _____

Maximum Score

Bouquet/Aroma (as appropriate for style) _____ **10**

Malt (3), Hops (3), Other Aromatic Characteristics (4)

Comments _____

Appearance (as appropriate for style) _____ **6**

Color (2), Clarity (2), Head Retention (2)

Comments _____

Flavor (as appropriate for style) _____ **19**

Malt (3), Hops (3), Conditioning (2), Aftertaste (3), Balance (4), Other Flavor

Characteristics (4)

Comments _____

Body (full or thin as appropriate for style) _____ **5**

Comments _____

Drinkability and Overall Impression _____ **10**

Comments _____

TOTAL (50 possible points) _____

1995 Rules and Regulations

PART I

How to Enter this Competition

1. What kind of bottles are required?

Every bottle must be 10 to 14 ounces in volume, brown or green glass, and be free of raised-glass or inked brand-name lettering and paper labels. Raised 'No Deposit' or bottle manufacturing codes, i.e. 'p m 00 H 4328' are acceptable. Obliterate any lettering or graphics on the cap with a permanent black marker. Bottles with Grolsch-type swing tops are not allowed. Corked bottles meeting the above restrictions are acceptable; however, you must crimp a crown cap over the cork. Bottles not meeting these requirements will be disqualified.

2. How many bottles do I need?

Send one (1) bottle for each BEER and MEAD entry competing in the first round. You should reserve a total of four (4) bottles of each of your entries – one (1) for the first round of the Competition, and three (3) for competing in the second round of the Competition should your beer or mead advance. For CIDER and SAKÉ, send three (3) bottles for each entry, all at once, by the first-round deadline.

3. What are the entry fees?

AHA members: \$9 per entry. More than three (3) entries, \$8 per entry. More than ten (10) entries, \$7 per entry. Non-members: \$12 per entry. Make checks payable to American Homebrewers Association include your membership number (if applicable) on the check.

4. When are the entry deadlines?

First-round entries must be **received** at the appropriate site between Monday, April 3 and 5 p.m. Friday, April 14, 1995. Second-round entries must be **received** at the appropriate site between Monday, June 5 and 5 p.m. Friday, June 9, 1995. Notification will be mailed by May 19 with additional instructions if your entry is advancing to the second round.

5. How do I enter?

(a) For each entry, fill out an entry/recipe form (last page of this brochure) in its entirety. For complete instructions on filling out the entry/recipe form, see Part II. Judges do not see your entry form.

(b) Staple your check or money order to one of the entry forms where designated. On your check write the number of entries the check or money order is paying for, and the names of the entrants if they are not all the same.

(c) Fold and rubber band each entry/recipe form to each bottle. Your entry will be disqualified if you use glue or tape to secure the form to the bottle.

(d) Pack your bottles carefully. (See Part III, Section I.)

(e) Ship your box to the appropriate address given on the Site Locator Map on page 11 of this brochure. Sites cannot acknowledge receipt of entries – arrange for a return receipt with your shipping company if you wish to confirm delivery of your package. Packages with postage due or C.O.D. charges will be returned to sender.

6. Which category do I enter?

It's up to you. It is entirely your decision. You should try to enter your brew in the category and subcategory in which you feel it will perform best. Judges do not see your entry form. Your beer will not be classified or reclassified by organizers or judges. Your entry will not be disqualified if it falls outside of a category's parameters – the descriptions are simply guidelines to help you enter your beer. Judges use the guidelines to guide them while judging your beer.

7. Are there entry limitations?

(a) You may not submit more than one entry per subcategory.

(b) Your homebrew must not have been brewed at any place that brews beverages for any commercial purpose, whether for commercial research, production or any other purpose, including brew-on-premises establishments.

(c) You must give the names of all brewers who helped in the brewing.

PART II

Instructions for Completing the Entry/Recipe Form

Entry/Recipe Form Section A: Brewers Information

Please print clearly or type. In Item 1, fill in the name of the brewer who will be responsible for receiving mailings and results. In Item 2, fill in the full names of all other brewers who participated in brewing the entry. In Items 3 through 5, write the address where mailings and results should be sent. Fill in Items 6 through 9 as applicable.

Entry/Recipe Form Section B: Entry Information

In Item 10, fill in the name you have given your beer. In Item 11, write out the full names of the category and subcategory you are entering. In Items 12 and 13, write the category number and subcategory letter you are entering. Your entry will not be classified or reclassified by directors, judges or registrars under any circumstances.

Important Information for Item 14: If you have entered in 3c, 19, 20, 21, 22b, 22c, 26, 27, 28c, 28d, 29 please follow the instructions below very carefully to give information for Item 14. LEAVE ITEM 14 BLANK IF YOU HAVE NOT ENTERED THE ABOVE CATEGORIES. This information is necessary for accurate judging of entries in these categories. In all cases, do not give brand names, geographic names or any other proper names of special ingredients that may indicate the origin or identity of the brewer. For example, if you used Premier Malt Extract, Briess pale malt, Washington apples, or Idaho clover honey you should only enter malt extract, pale malt, apples or clover honey, respectively.

Entries in 3c: Give the type of fruit you used.

Entries in 19: If you are entering 19a, list the fruit(s) you used. If you are entering 19b, list the fruit(s) you used and give the classic style you are emulating. For example: raspberry stout, blueberry Pilsener, plum India pale ale. If you have used any other special ingredient in addition to the fruit, enter your beer in category 21: Specialty Beer.

Entries in 20: If you are entering 20a, list the herb(s) you used. If you are entering 20b, list the herb(s) you used and give the classic style you are emulating. For example: nutmeg stout, chili Pilsener, coriander India pale ale. If you have used any other special ingredients in addition to the herbs, enter your beer in category 21: Specialty Beer.

Entries in 21: If you are entering 21a, write the special technique or ingredients you used. If you have used both fruit and herbs, list them. If you are entering 21b, give the classic style you are emulating. For example: honey Pilsener, cinnamon maple stout or lambic barley wine.

Entries in 22b and 22c: If you are entering 22b, give the classic style you have emulated and the type of smoking wood or liquid smoke used. For example: birch-smoked porter, apple-smoked Scottish ale, etc. If you are entering 22c, give the special ingredients you used and the type of smoking wood or liquid smoke used.

Entries in 26: Give the fruit(s) you used.

Entries in 27: Give the herb(s) or spice(s) you used.

Entries in 28c and 28d: In 28c indicate whether your entry is still or sparkling New England-style cider. In 28d give the special ingredients and/or special yeast you used.

Entries in 29: In all subcategories, give the type of saké or oriental rice beer.

Ingredients and Procedures Entry/Recipe Form Section C:

Be as detailed as possible in this section. If you need more room, write on a separate piece of paper. If you are entering a mead, cider or saké, list fermentable ingredients in the malt section and any other ingredients in the hops section. If your brew wins first, second, or third in the AHA National Homebrew Competition, this information will be used if your recipe is published in **zymurgy**. Judges do not see your recipe information.

1995 Rules and Regulations



PART III

The Fine Print

A. General

This Competition is open to all homebrewers, AHA members and non-members. Contestants will be considered an individual entrant based on the name(s) appearing on the registration form. No employee of the Association of Brewers may enter. Persons under contract and/or persons volunteering their services to the Association of Brewers are eligible. First-round registrars, site directors and judge directors who enter must enter at a site other than the one they are hosting. Judges may not judge a category they have entered. Applicable entry fees and limitations shall apply.

It is the sole responsibility of the entrant to complete all registration and recipe forms, enclose the proper entry fee and designate the category and subcategory in which they wish their entry to be judged. Under no circumstances will registrars, judges or directors categorize entries.

Beer, mead, cider and saké will be judged only in terms of the categories and subcategories listed on pages 5-9. Entries must be referred to by category NUMBER and subcategory LETTER. Dry, medium, sweet or very sweet must be designated for all mead, cider and saké entries.

If a category does not have at least 20 entries in 1995, it will not be included in the Competition in 1995.

B. Awards and Prizes

- (1) Certificates will be awarded to first-round brewers whose achievements are outstanding based on judges' scoring and the following standards: Gold Certificate: scores of 40 to 50, Silver Certificate: scores of 30 to 39, Bronze Certificate: scores of 25 to 29.
- (2) Prizes will be awarded after second-round judging. First-, second- and third-place winners in each category receive a gold, silver or bronze medal.
- (3) First-place winners of each beer category will compete in a best-of-show judging. The winner will be awarded Homebrewer of the Year sponsored by *Munton & Fison of England* and the *Great American Beer Festival*SM.
- (4) First-place winners of each mead category will compete in a best-of-show judging. The winner will be awarded Meadmaker of the Year sponsored by *American Mead Association*, Grand Junction, Colo.
- (5) The first-place winner of the cider category will be awarded Cidermaker of the Year sponsored by *Lyon's Brewery of Dublin*, Dublin, Calif.
- (6) The first-place winner of the saké category will be awarded Sakémaker of the Year sponsored by *Kohnan Inc.*, Napa, Calif.
- (7) The Ninkasi Award will be given to the High-Point Homebrewer(s), the brewer(s) who accumulate(s) the most points in the 24 beer categories in this Competition. Six points are awarded for a first place, three for a second and one for a third place. Individual members of a group of brewers do not earn points on an individual basis, i.e., if Brewer A and Brewer B enter individually, they earn points individually, but if they enter as a team, they earn points as a team. Entry forms must list each member of the team of brewers to count toward the point total. There will be only one Ninkasi winner. In case of a tie, the AHA will use a tie-breaking system. The Ninkasi award is sponsored by *Pete's Brewing Co.*, Palo Alto, Calif.
- (8) The Homebrew Club of the Year award will be awarded to the club that accumulates the most points in all categories of beer, mead, cider and saké. Six points are awarded for a first place, three for a second and one for a third place. The same point scale will be used and points will be awarded for the six annual AHA Club-Only Competitions (Weiss is Nice 1994, Best of Fest 1994, Specialty Quest 1994, Hail to Ale 1995, Bock is Best 1995 and Rauchbier Roundup 1995) and added into the tally. For your club to receive credit you must have the club listed on the entry form AND the club must be registered with the AHA by April 1, 1995. The Homebrew Club of the Year award is sponsored by *Coopers Brewery*, Adelaide, Australia.
- (9) At the discretion of Competition organizers and/or judges, awards may not be given if the quality of an entry is not deemed deserving of an award.

C. Judging

- (1) First-round judging of all beer and mead entries will be done in closed sessions at the AHA National Homebrew Competition sites April 28 through May 7, 1995.
- (2) Second-round judging of qualifying beer and mead entries will be done at the AHA National Homebrewers Conference in Baltimore, Md., June 14 through 17, 1995.

- (3) Best-of-Show judging of qualifying beer and mead entries will be done at the AHA National Homebrewers Conference in Baltimore, Md., June 14 through 17, 1995.
- (4) All rounds of judging for cider and saké entries will be completed at the appropriate National Homebrew Competition site April 28 through May 7, 1995.
- (5) Judges and stewards are needed for first and second rounds. Qualified and interested individuals are encouraged to contact the AHA after April 1, 1995.
- (6) All decisions by Competition organizers are final.

D. AHA Membership

Non-members may receive membership status by enclosing the \$29 annual membership fee with Competition entry fees. If you are becoming a member of the AHA, circle Yes in Item 8 of the entry form and send separate checks for your membership and your entries. All checks should be made payable to the American Homebrewers Association.

E. Recipe Requirement

A recipe must be submitted with each entry. Upon entering this Competition entrants agree to allow (at no cost) publication of their recipe by the Association of Brewers, or any of its divisions in any publication. Entrant will receive all due credit.

F. Information and Fees Requirement

All entry fees, names of competitors, address, phone number, category and subcategory entered and recipes must accompany entries when submitted. No entries will be returned whether received late or otherwise. All entries become property of the AHA.

G. Disqualifications

At the discretion of the AHA, entries will be disqualified for eligibility or entry requirement infractions. These entries may still be judged but will be ineligible for awards or prizes.

H. Results and Qualifying for Second Round

All entrants will receive the score sheets with judges' comments for their entries. Results will be mailed via first-class mail on May 22, 1995. Approximately 12 beers and meads from each category will be chosen to advance to the second round of the Competition. If your beer or mead qualifies for the second-round judging you will be notified by first-class mail between May 22 and May 29, 1995. You will be instructed on how, when and where to send three (3) additional bottles for judging, to be received in the Baltimore area between Monday, June 5, and 5 p.m. Friday, June 9, 1995. Contestants are advised to refrigerate potential second-round entries to minimize changes in character.

I. Packing and Shipping Hints

Carefully pack your entries in a sturdy box. Line the inside of your carton with a plastic trash bag. Partition and pack each bottle with adequate packaging material. Do not overpack! Write clearly: "Fragile, Glass. This Side Up" on the package. Your package should weigh less than 25 pounds.

Every reasonable effort will be made to contact entrants whose bottles have broken to make arrangements for sending replacement bottles. We strongly recommend that you use reusable shipping containers or the kind of shipping containers used by beer-of-the-month clubs. These containers help ensure your beer will arrive safely, and significantly reduce the amount of packaging waste. Sites make efforts to recycle packaging material whenever possible.

Refer to the article on "How to Pack Your Beer," in *zymurgy* Spring 1991 (Vol. 14, No. 1) for excellent advice on how to save time, money and avoid broken bottles. A product review in *zymurgy* Spring 1993 (Vol. 16, No. 1) of reusable containers specially designed for shipping homebrew is also available. Copies of these articles are available free upon request if accompanied with a self-addressed stamped envelope.

It is not against any Bureau of Alcohol, Tobacco and Firearms regulations or federal laws to ship your entries via a privately owned shipping company for analytical purposes. It is illegal, however, to ship alcoholic beverages via the U.S. Postal Service. Private shipping companies may refuse your shipment if they are informed that the package contains alcoholic beverages. Be aware that entries mailed from foreign countries are often required by Customs to have proper documentation. These entries might be opened and/or returned to the shipper by Customs officials at their discretion. It is solely the entrant's responsibility to follow all applicable laws and regulations.

1995 Category Descriptions

PART IV

Category Descriptions

There are 24 categories of lager, ale or mixed-style beers, three categories of mead, one category of cider and one category of saké to be judged. All have subcategories using small-letter designations. If a beer is entered, for example, as "9b Brown Porter" it will be judged as a Brown Porter against the others in the Porter category. Judges do not see your recipe information, but they do use these guidelines when evaluating your entry.

The following section gives more detailed information about each category and subcategory. Please note that when a style characteristic is designated "OK" this means it does not have to be apparent but it is permissible in amounts indicated. When the term "noble-type" hops is used it refers to European continental-type hops such as Saaz, Hallertauer, Tettnanger and Spalt, to name a few.

Categories are designated by numbers. Subcategories are designated by letters. Please note the Style Guidelines Chart on page 10.

ALE

Ales are distinguished by the use of top-fermenting *Saccharomyces cerevisiae* yeast strains. These strains perform at warmer temperatures, the ferments are faster and fermentation byproducts are generally more evident. Ales tend to have a very pronounced palate where esters and fruity qualities are part of the character.

1. Barley Wine

Category award sponsored by Edme Ltd., Mistley, Manningtree, England.

- (a) Barley Wine — Copper to medium brown. Malty sweetness. Fruity/estery. Low to high bitterness. Medium to full body. Low to high hop aroma and flavor. Alcoholic taste. Low to medium diacetyl OK.

2. Belgian and French Ale

Category award sponsored by Manneken-Brussel Imports Inc., Austin, Texas.

- (a) Flanders Brown — Slight vinegarlike or lactic sourness and spiciness. Light to medium bodied. Deep copper to brown. Fruity/estery. No hop flavor or aroma. Low to medium bitterness. No diacetyl. Low roasted malt character OK.
- (b) Dubbel — Dark amber to brown. Sweet, malty, nutty, chocolate, roast malt aroma OK. Medium to full body. Low bitterness, very low diacetyl OK. Low levels of fruity-esters (especially banana) OK.
- (c) Tripel — Light/pale color. Light malty and hoppy aroma. Neutral hop/malt balance. Finish may be sweet. Medium to full body. Alcoholic, but best examples do not taste strongly of alcohol. Spicy, phenolic-clove, banana flavors, esters OK.
- (d) Belgian Ale — Golden to deep amber. A Belgian "pale ale." Hop character subdued. Light to medium body. Low malt aroma. Slight acidity OK. No diacetyl. Low fruity esters in aroma and flavors. Low caramel or toasted malt flavor OK.
- (e) Belgian Strong Ale — Pale to dark brown. Alcoholic. Can be vinous. Darker beers are colored with candi sugar and not so much dark malt. Medium body. Low to high bitterness. Low hop flavor and aroma.
- (f) White — Unmalted wheat and malted barley. Oats OK. Often spiced with coriander seed and dried bitter orange peel. Hop flavor and aroma "noble-type" desired. Low to medium bitterness. Low to medium body. Dry. Low diacetyl OK. Low to medium fruity esters.
- (g) Bière de Garde — Deep golden to deep copper/light brown. Medium to high malt flavor. Light to medium body. Medium hop bitterness. Light to medium hop flavor and aroma. May have light to medium fruitiness, esteriness. Lager yeast may be used. Earthy, cellarlike, musty aromas OK. Traditionally, a French-style beer that improves with some aging.

3. Belgian-style Lambic

Category award sponsored by L.D. Carlson Co., Kent, Ohio.

- Intensely and cleanly sour. No hop bitterness, flavor or aroma. Effervescent. Fruity/estery and uniquely aromatic. Malted barley and unmalted wheat. Stale, old hops used. Cloudiness OK
- (a) Faro — Lambic with sugar and sometimes caramel added. Pale to light amber.
- (b) Gueuze — Unflavored blend of old and young lambics, secondarily fermented. Very dry or mildly sweet. Intensely sour and acidic flavor. Fruity-estery. Pale. Light body. Use unmalted wheat, malted barley and stale aged hops. Very low hop bitterness.
- (c) Fruit (Framboise, Kriek, Pêche) — Lambic fermented with fruits such as raspberry, cherry, peach, etc. Fruit flavor, aroma and color are intense. Sourness predominates. Often very dry.

4. Brown Ale

Category award sponsored by Premier Malt Products, Grosse Pointe, Mich.

- (a) English Brown — Deep copper to brown. Sweet and malty. Low bitterness. Hop flavor and aroma low. Some fruitiness and esters. Medium body. Low diacetyl OK.
- (b) English Mild — Low alcohol. Light amber to very dark brown. Low hop bitterness, flavor and aroma. Mild maltiness. Light body. Low esters.
- (c) American Brown — Medium to dark brown. High hop bitterness, flavor and aroma. Medium maltiness and body. Low diacetyl OK.

5. English-style Pale Ale

Category award sponsored by Wynkoop Brewing Co., Denver, Colo.

- (a) Classic English Pale Ale — Golden to deep amber/copper. Low to medium maltiness. High hop bitterness, flavor and aroma. Use of English hops such as Goldings, Fuggles, etc. Fruity/estery. Low diacetyl OK. Medium body. Low caramel character OK.
- (b) India Pale Ale — Golden to deep amber/copper. Medium body. Medium maltiness. High hop bitterness. Hop flavor and aroma medium to high. Fruity/estery. Alcoholic strength evident. Low diacetyl OK.

6. American-style Ale

Category award sponsored by Northwestern Extract Co., Brookfield, Wis.

- (a) American Pale Ale — Pale to deep amber/red/copper. Low to medium maltiness. High hop bitterness. Medium hop flavor and aroma. Use of American hops such as Cascade, Willamette, Centennial (CFJ-90), etc. Fruity/estery. Low diacetyl OK. Medium body. Low caramel character OK.
- (b) American Wheat — Golden to light amber. Light to medium body. Low to medium bitterness. Malt and hop flavor and aroma OK. Low to medium fruitiness and esters. Low diacetyl OK. Lager or ale yeast used. No phenolic character.

7. English Bitter

Category award sponsored by Alternative Beverage, Charlotte, N.C.

- Gold to copper. Low carbonation. Medium to high bitterness. May or may not have hop flavor or aroma. Low to medium maltiness. Light to medium body. Low diacetyl OK. Fruitiness/esters OK.
- (a) English Ordinary — Mildest form of bitter. Low diacetyl and fruity-esters.
- (b) English Special — Moderate strength. Maltiness more evident along with increased hop character.
- (c) English Extra Special — Strong bitter. Maltiness evident. Hop bitterness flavor and aroma medium to high. Full body.

8. Scottish Ale

Category award sponsored by Something's Brewing, Burlington, Vt.

- (a) Scottish Light — Gold to amber. Low carbonation. Very low bitterness. No hop flavor and aroma. Medium maltiness. Light body. Low to medium diacetyl OK. Fruitiness/esters OK. Faint smoky character OK.

1995 Category Descriptions



- (b) Scottish Heavy — Gold to amber to dark brown. Low carbonation. Low bitterness. May or may not have hop flavor and aroma. Medium to high maltiness. Medium body. Low to medium diacetyl OK. Low fruitiness/esters OK. Faint smoky character OK.
- (c) Scottish Export — Gold to amber to dark brown. Low carbonation. Low to medium bitterness. May or may not have hop flavor and aroma. High maltiness. Medium body. Low to medium diacetyl OK. Fruitiness/esters OK. Faint smoky character OK.

9. Porter

Category award sponsored by The Cellar, Seattle, Wash.

- (a) Robust Porter — Black. No roast barley character. Sharp bitterness of black malt, without high burnt/charcoal-like flavor. Medium to full bodied. Maltly sweet. Hop bitterness medium to high. Hop flavor and aroma: none to medium. Fruitiness/esters OK. Low diacetyl OK.
- (b) Brown Porter — Medium to dark brown. No roast barley or strong burnt malt character. Light to medium body. Low to medium malt sweetness. Medium hop bitterness. Hop flavor and aroma: none to medium. Fruitiness/esters OK. Low diacetyl OK.

10. English and Scottish Strong Ale

Category award sponsored by Wine & Hop Shop, Denver, Colo.

- (a) English Old Ale/Strong Ale — Light amber to deep amber/copper. Medium to full body. Maltly. Hop bitterness apparent but not aggressive, flavor and aroma can be assertive. Fruitiness/esters high. Alcoholic strength recognizable. Low diacetyl OK.
- (b) Strong "Scotch" Ale — Similar to English Old/Strong Ale. Overwhelmingly maltly. Deep copper to very black. Hop bitterness low. Diacetyl medium to high. Hop flavor and aroma very low or absent. Full bodied. Faint smoky character OK. Malt character balanced by clean alcohol flavors.

11. Stout

Category award sponsored by Alternative Garden Supply, Streamwood, Ill.

- (a) Classic Dry Stout — Black opaque. Medium body. Medium to high hop bitterness. Roasted barley character is required, but can be at low levels. Slight malt sweetness or caramel malt character OK. No hop flavor or aroma. Slight acidity/sourness OK. Very low diacetyl OK.
- (b) Foreign Style — Black/opaque. Medium to full body. No hop aroma and flavor. Slight acidity/sourness OK. Slight malt sweetness or caramel malt character OK. Very low diacetyl OK. Low fruitiness/esters OK.
- (c) Sweet Stout/Cream Stout — Overall character sweet. Black opaque. Medium to full body. Hop bitterness low. Roasted barley (coffee-like) character mild. No hop flavor or aroma. Sweet maltiness and caramel flavors evident. Low diacetyl OK.
- (d) Imperial Stout — Dark copper to very black. Hop bitterness, flavor and aroma medium to high. Alcohol strength evident. Rich maltiness. High fruitiness/esters. Full-bodied. Very low diacetyl OK.

LAGER

Lagers are produced with bottom-fermenting *Saccharomyces uvarum* (a.k.a. *carlsbergensis*) strains of yeast at colder fermentation temperatures than ales. This cooler environment inhibits the natural production of esters and other fermentation byproducts, creating a cleaner-tasting product.

12. Bock

Category award sponsored by Washington Hop Commission, Yakima, Wash.

- (a) Traditional German Bock — Deep copper to dark brown. Medium to full body. Maltly sweet character predominates in aroma and flavor with some toasted chocolate malt character. Low bitterness. Low hop flavor, "noble-type" OK. No hop aroma. No fruitiness or esters. Low diacetyl OK.

- (b) Helles (light) Bock — Pale to amber. Medium body. Maltly sweet character predominates in aroma and flavor. No toasted chocolate malt character. Low bitterness. Low hop flavor, "noble-type" OK. No hop aroma. No fruitiness or esters. Low diacetyl OK.
- (c) Doppelbock — Light to very dark; amber to dark brown. Very full body. Maltly sweetness evident in aroma and flavor can be intense. High alcoholic flavor. Slight fruitiness and esters OK, but not very desirable. Low bitterness. Low hop flavor, "noble-type" OK. No hop aroma. Low diacetyl OK.
- (d) Eisbock — A stronger version of Doppelbock. Deep copper to black. Very alcoholic. Typically brewed by freezing a doppelbock and removing resulting ice to increase alcohol content.

13. Bavarian Dark

Category award sponsored by Crosby & Baker, Westport, Mass.

- (a) Munich Dunkel — Copper to dark brown. Medium body. Nutty, toasted, chocolatelike maltly sweetness in aroma and flavor. Medium bitterness. Low "noble-type" hop flavor and aroma. No fruitiness or esters. Low diacetyl OK.
- (b) Schwarzbier — Dark brown to black. Medium body. Roasted malt evident. Low sweetness in aroma and flavor. Low to medium bitterness. Low bitterness from roast malt. Hop flavor and aroma, "noble-type" OK. No fruitiness, esters. Low diacetyl OK.

14. German Light Lager

Category award sponsored by Briess Malting Co., Chilton, Wis.

- (a) Dortmund/Export — Pale to golden. Medium body. Medium maltly sweetness. Medium bitterness. Very low "noble-type" hop flavor and aroma. No fruitiness, esters or diacetyl. Alcoholic warmth evident.
- (b) Munich Helles — Pale to golden. Medium body. Medium maltly sweetness. Low bitterness. "Noble-type" hop flavor and aroma OK. No fruitiness, esters. No diacetyl.

15. Classic Pilsener

Category award sponsored by California Concentrates, Acampo, Calif.

- (a) German — Pale to golden. Light to medium body. High hop bitterness. Medium hop "noble-type" flavor and aroma. Low maltiness in aroma and flavor. No fruitiness, esters. Very low diacetyl OK.
- (b) Bohemian — Pale to golden. Light to medium body. Medium to high bitterness. Low to medium hop "noble-type" flavor and aroma. Low to medium maltiness in aroma and flavor. No fruitiness, esters. Low diacetyl OK.

16. American Lager

Category award sponsored by Pabst Brewing Co., Milwaukee, Wis.

- (a) Diet/Lite — Very pale. Light body. Very low bitterness. No malt aroma or flavor. No hop aroma or flavor. Effervescent. No fruitiness, esters or diacetyl.
- (b) American Standard — Very pale. Light body. Very low bitterness. Low malt aroma and flavor. Low hop aroma and flavor OK. Effervescent. No fruitiness, esters or diacetyl.
- (c) American Premium — Very pale to golden. Light body. Low to medium bitterness. Low malt aroma and flavor OK. Low hop flavor or aroma OK. Effervescent. No fruitiness, esters or diacetyl.
- (d) Dry — Pale to golden. Light body. Low to medium bitterness. Low malt aroma or flavor. Low hop aroma and flavor. Effervescent. No fruitiness, esters or diacetyl. No lingering aftertaste or bitterness.
- (e) Cream Ale/Lager — Very pale. Effervescent. Light body. Low to medium bitterness. Low hop flavor or aroma OK. Low fruitiness/ester OK. Can use ale or lager yeasts or combination.
- (f) American Dark — Deep copper to dark brown. Light to medium body. Low bitterness. Low malt aroma or flavor OK. Low hop flavor or aroma OK. Effervescent. No fruitiness, esters. Very low diacetyl OK.

1995 Category Descriptions

17. Vienna/Oktobfest/Märzen

Category award sponsored by F.H. Steinbart, Portland, Ore.

- (a) Vienna — Amber to deep copper/light brown. Toasted malt aroma and flavor. Low malt sweetness. Light to medium body. Hop bitterness "noble-type" low to medium. Low hop flavor and aroma, "noble-type" OK. No fruitiness, esters. Low diacetyl OK.
- (b) Oktoberfest/Märzen — Amber to deep copper/orange. Malty sweetness, toasted malt aroma and flavor dominant. Medium body. Low to medium bitterness. Low hop flavor and aroma, "noble-type" OK. No fruitiness, esters or diacetyl.

MIXED STYLE (LAGER-ALE)

The following beers are fermented or aged with mixed traditions, and could be brewed as an ale or lager.

18. German-Style Ale

Category award sponsored by BRISTOL BREWHOUSE, Milwaukee, Wis.

- (a) Dusseldorf-style Altbier — Copper to dark brown. Medium to high maltiness. Medium to high bitterness. Very low hop flavor. No hop aroma. Light to medium body. Low fruitiness and esters. Traditionally fermented warm but aged at cold temperatures. No diacetyl.
- (b) Kölsch — Pale gold. Low hop flavor and aroma. Medium bitterness. Light to medium body. Slightly dry, winy palate. Malted wheat OK. Lager or ale yeast or combination of yeasts OK. No fruitiness, esters or diacetyl.

19. Fruit Beer

Category award sponsored by The Purple Foot, Milwaukee, Wis.

- (a) Fruit Beer — Any ale or lager made with fruit. Character of fruit should be evident in color, aroma and flavor. Body, color, hop character and strength can vary greatly.
- (b) Classic-style Fruit Beer — Any classic style of ale or lager to which fruit has been added. Brewer to specify style.

20. Herb Beer

Category award sponsored by Marin Brewing Co., Larkspur, Calif.

- (a) Herb Beer — Any ale or lager with herbs. Character of herb or spice should be evident in aroma and flavor. Body, color, hop character and strength can vary greatly.
- (b) Classic-style Herb Beer — Any classic style of ale or lager to which herbs have been added. Brewer to specify style.

21. Specialty Beer

Category award sponsored by Homebrew Headquarters, Dallas, Texas.

Any ale or lager brewed using unusual techniques and/or ingredients other than (or in addition to) malted barley as a unique contribution to the overall character of the beer. Examples of specialty beers include (but are not limited to) beers brewed with honey, maple sap or syrup; worts heated with white-hot stones (Steinbier); and low or non-alcoholic beers. Examples do not include the use of fruit or herbs, although they can be used to add to the character of other ingredients.

- (a) Specialty Beer — Any non-classic style fitting the above description.
- (b) Classic-style Specialty Beer — Any classic ale or lager to which special ingredients have been added or a special process has been used, e.g., honey Pilsener, maple porter, sorghum stout, pumpkin pale ale. Brewer to specify style.

22. Smoked Beer

Category award sponsored by Jim's Homebrew Supply, Spokane, Wash.

- (a) Bamberg-style Rauchbier — Oktoberfest style (see Oktoberfest) with a sweet smoky aroma and flavor. Dark amber to dark brown. Intensity of smoke medium to high. Low diacetyl OK.
- (b) Classic-style Smoked Beer — Any beer that is based on a classic-style beer to which smoked characteristics have been added. Brewer to specify style.
- (c) Other (brewer to specify style) — All other beers with smoked characteristics.

23. California Common Beer

Category award sponsored by Anchor Brewing Co., San Francisco, Calif.

- (a) California Common Beer — Light amber to copper. Medium body. Toasted or caramellike maltiness in aroma and flavor. Medium to high hop bitterness. Hop flavor medium to high. Aroma medium. Fruitiness and esters low. Low diacetyl OK. Lager yeast, fermented warm but aged cold.

24. Wheat Beer

Category award sponsored by the Tabernash Brewing Co., Denver, Colo.

- (a) Berliner Weisse — Pale. Light body. Dry. Sharp lactic sourness. Fruity/estery. Between 60 and 70 percent malted wheat. Very low bitterness. No hop flavor or aroma. Effervescent. No diacetyl.
- (b) German-style Weizen/Weissbier — Pale to golden. Light to medium body. About 50 percent wheat malt. Clove and slight banana character. Fruity/estery. Clove, vanilla, nutmeg, smoke and cinnamonlike phenolics permissible. Mild sourness OK. Highly effervescent. Cloudiness OK. Low bitterness. Low hop flavor and aroma OK. No diacetyl.
- (c) German-style Dunkelweizen — Deep copper to brown. Dark version of Weizen. Roasted malt and chocolatelike flavors evident. Banana and cloves and other phenolics may still be evident, but to a lesser degree. Stronger than Weizen. Medium body. No diacetyl. Low hop flavor and aroma OK.
- (d) German-style Weizenbock — Usually deep copper to dark brown, but light versions can be amber to copper. Medium to full body. Alcoholic strength evident. Maltiness high. Low bitterness. Hop flavor and aroma absent. Banana and clove character apparent. No diacetyl. Dark versions have a mild roast malt flavor and aroma.

MEAD

Meads are produced by the fermentation of honey, water, yeast and optional ingredients such as fruit, herbs and/or spices. Their final gravity roughly determines whether they are: Dry — 0.996 to 1.009; Medium — 1.010 to 1.019; Sweet — 1.020 to 1.029; or Very Sweet — 1.030 and higher. Wine, Champagne, sherry, mead, ale or lager yeasts may be used.

25. Traditional Mead and Braggot

Category award sponsored by BEERCRAFTERS INC., Turnersville, N.J.

- (a) Sparkling Traditional Mead — Effervescent. Dry, medium or sweet (designate on entry form). Light to medium body. No flavors other than honey. Honey character in aroma and flavor. Low to medium fruity acidity. Color depends on honey type. Absence of harsh and/or stale character.
- (b) Still Traditional Mead — Not effervescent. Dry, medium sweet or very sweet (designate on entry form). Light to full body. Honey character in aroma and flavor. Low to medium fruity acidity. Color depends on honey type. Absence of harsh and/or stale character.
- (c) Sparkling Braggot — Effervescent. Made with malt. Dry, medium or sweet (designate on entry form). Light to medium body. Honey flavors predominate.
- (d) Still Braggot — Not effervescent. Made with malt. Dry, medium or sweet (designate on entry form). Light to medium body. Honey flavors predominate.

26. Fruit Mead

Category award sponsored by The National Honey Board, Longmont, Colo.

Melomel is made with any fruit. Cyser is made with apples and/or apple juice; Pyment is made with grapes. Ingredients should be expressed in aroma and flavor. Color should represent ingredients. Honey character apparent in aroma and flavor. Absence of harsh and/or stale character.

- (a) Sparkling Melomel — Effervescent. Light to medium body. Dry, medium or sweet (designate on entry form).

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- (b) Still Melomel — Not effervescent. Light to full body. Dry, medium, sweet or very sweet (designate on entry form).
- (c) Sparkling Cyser — Effervescent. Light to medium body. Dry, medium or sweet (designate on entry form).
- (d) Still Cyser — Not effervescent. Light to full body. Dry, medium, sweet or very sweet (designate on entry form).
- (e) Sparkling Pymment — Effervescent. Light to medium body. Dry, medium or sweet (designate on entry form).
- (f) Still Pymment — Not effervescent. Light to full body. Dry, medium, sweet or very sweet (designate on entry form).

27. Herb Mead

Category award sponsored by Madhava's Mountain Gold Honey, Lyons, Colo.

Metheglin is made with any herbs or spices. Hippocras is made with spices and grapes (spiced Pymment). Ingredients should be expressed in aroma and flavor. Color should represent ingredients. Honey character must be apparent in aroma and flavor. Absence of harsh and/or stale character.

- (a) Sparkling Metheglin — Effervescent. Light to medium body. Dry, medium or sweet (designate on entry form).
- (b) Still Metheglin — Not effervescent. Light to full body. Dry, medium, sweet or very sweet (designate on entry form).
- (c) Sparkling Hippocras — Effervescent. Light to medium body. Dry, medium or sweet (designate on entry form).
- (d) Still Hippocras — Not effervescent. Light to full body. Dry, medium, sweet or very sweet (designate on entry form).

CIDER

Ciders are produced by the fermentation of apple juices and optional ingredients such as fruits and spices. Wine, Champagne, ale, lager or wild yeasts may be used.

28. Cider

Category award sponsored by Lyon's Brewery of Dublin, Dublin, Calif.

NOTE: Cider made with honey as an adjunct (Cyser) should be entered into category 26 for Melomel, Cyser and Pymment.

- (a) Still — Not effervescent. Less than 5.5 percent alcohol by weight (7 percent by volume). Can be dry or sweet. Pale yellow color, must be clear or brilliant. Apple aroma. Light-bodied and crisp apple flavor. Sugar adjuncts may be used.
- (b) Sparkling — Effervescent but not foamy. May be force-carbonated. No head. Less than 6.3 percent alcohol by weight (8 percent by volume). Dry or sweet. Pale yellow color, must be clear and brilliant. Light to medium body, crisp apple taste. Sugar adjuncts may be used.
- (c) New England-style — Still or sparkling dry cider. Carbonation must be natural. Between 6.3 and 11 percent alcohol by weight (8 and 14 percent by volume). Pale to medium yellow color. Pronounced apple aroma. Medium to full body. Balanced by drying tannins, but never hot due to excess alcohol. Adjuncts include white and brown sugars, molasses or raisins. Wild or wine yeasts only.
- (d) Specialty Cider — Any and all adjuncts and yeasts may be used. Alcohol content must be below 11 percent alcohol by weight (14 percent by volume). At least 75 percent apple juice must be used in the must.

SAKÉ

Saké is a traditional Asian fermented drink made from rice. The rice is washed, steamed and fermented with a yeastlike fungus (*Aspergillus oryzae*) which acts both as a saccharifier and fermenter.

29. Saké

Category award sponsored by Kohnan Inc., Napa, Calif.

- (a) Saké (Japanese rice beer) — 9.4 to 15.7 percent alcohol by weight (Twelve to 20 percent by volume). Can be semidry to dry to very dry. No carbonation. Pale yellow color to almost water clarity. Must be

made with rice koji, rice and yeast only. Designate type of saké on entry form.

Genshu saké — full strength 14.1 to 15.7 percent alcohol by weight (18 to 20 percent by volume).

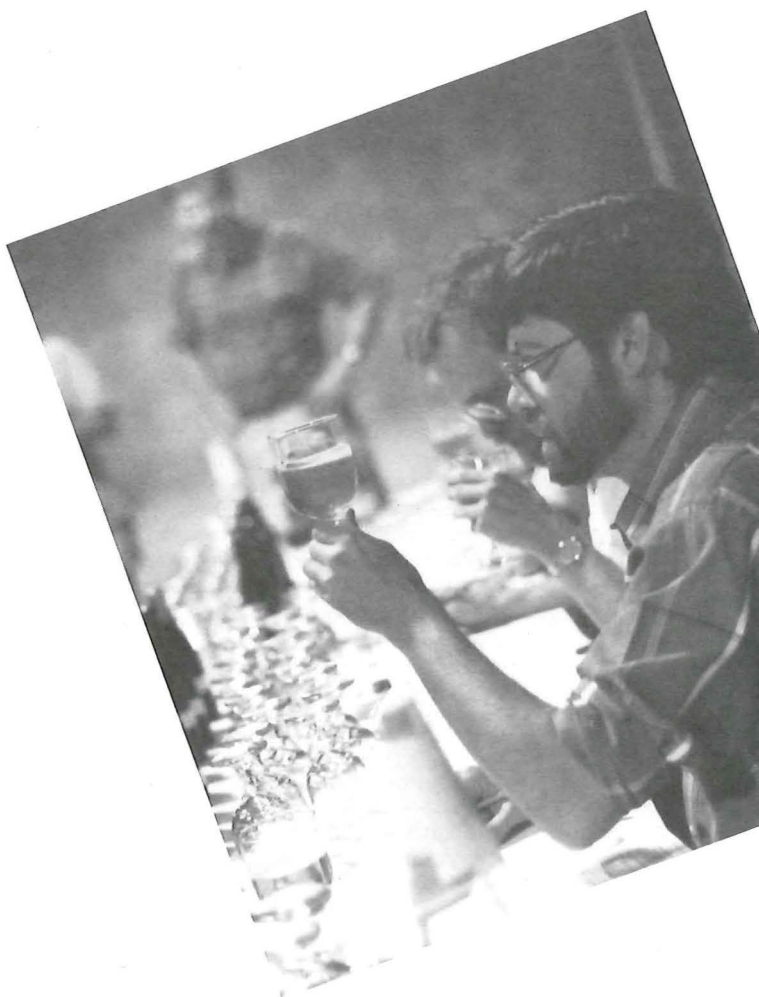
Ordinary saké — 12.6 to 13.3 percent alcohol by weight (16 to 17 percent by volume).

Nigori saké (unfiltered/unpasteurized) saké — will often be cloudy and have sediment in suspension.

Ginjo saké — made from highly polished rice, crystal clear and almost colorless.

Brown rice (Genmai) saké — ginjo saké made from unpolished rice and rice koji.

- (b) Sparkling Saké — this is regular saké refermented in the bottle (like Champagne) to produce carbonation. It is about 9.8 percent alcohol by weight (12.5 percent by volume), and the bottle priming is rice syrup and yeast. Can be made from fruit or herb saké.
- (c) Other Oriental Rice Beers (jius) — any indigenous brews and Asian homebrew, such as Chinese amber rice beer (Chiu); Korean saké types (Takjoo and other Jus); Japanese (Doburoku); saké variations from other grains (corn, barley, millet, etc.); Mirin (cooking) saké; and rice wine, fruit or herb saké. Designate type of rice beer on entry form.



1995 Style Guidelines Chart

	Original Gravity (Balling/Plato)	Final Gravity (Balling/Plato)	Percent alc./wt. (alc./vol.)	Int'l Bittering Units	Color SRM (EBC)
ALE					
1. Barley Wine					
a) Barley Wine	1.090-120 (22.5-30)	1.024-32 (6-8)	6.6-9.4 (8.4-12)	50-100	14-22 (35-90)
2. Belgian and French Ale					
a) Flanders Brown	1.044-56 (11-14)	1.008-16 (2-4)	3.8-4.1 (4.8-5.2)	15-25	12-18 (40-90)
b) Dubbel	1.050-70 (12.5-17.5)	1.012-16 (3-4)	4.7-5.9 (6.7-5)	18-25	10-14 (25-40)
c) Tripel	1.060-96 (17.5-24)	1.016-24 (4-6)	5.5-7.9 (7-10)	20-25	3.5-5.5 (7-11)
d) Belgian Ale	1.044-54 (11-13.5)	1.008-14 (2-3.5)	3.2-4.9 (4.6-2)	20-30	3.5-12 (8-30)
e) Belgian Strong Ale	1.064-96 (16-24)	1.012-24 (3-6)	5.5-8.6 (7-11)	20-50	3.5-20 (8-80)
f) White (Wit)	1.044-50 (11-12.5)	1.006-10 (1.5-2.5)	3.8-4.1 (4.8-5.2)	15-25	2-4 (5-10)
g) Bière de Garde	1.060-80 (15-20)		3.5-6.3 (4.5-8)	25-30	8-12 (16-30)
3. Belgian-style Lambic					
a) Faro	1.044-56 (11-14)	1.000-10 (0-2.5)	3.9-4.7 (5-6)	11-23	6-13 (15-33)
b) Gueuze	1.044-56 (11-14)	1.000-10 (0-2.5)	4.0-5.0 (5-6)	11-23	6-13 (15-33)
c) Fruit (Framboise, Kriek, Etc.)	1.040-72 (10-17.5)	1.000-20 (0-5)	4.0-5.5 (5-7)	15-21	n/a
4. Brown Ale					
a) English Brown	1.040-50 (10-12.5)	1.008-14 (2-3.5)	3.3-4.7 (4.5-5)	15-25	15-22 (35-90)
b) English Mild	1.030-38 (7.5-9.5)	1.004-08 (1-2)	2.7-3.2 (3.2-4.0)	10-24	8-34 (16-135)
c) American Brown	1.040-55 (10-14)	1.010-18 (2.5-4.5)	3.3-4.7 (4.5-9)	25-60	15-22 (35-90)
5. English-style Pale Ale					
a) Classic English Pale Ale	1.044-56 (11-14)	1.008-16 (2-4)	3.5-4.2 (4.5-5.5)	20-40	4-11 (10-25)
b) India Pale Ale	1.050-70 (12.5-17.5)	1.012-18 (3-4.5)	4.0-6.0 (5-7.5)	40-60	8-14 (16-35)
6. American-style Ale					
a) American Pale Ale	1.044-56 (11-14)	1.008-16 (3-4.5)	3.5-4.3 (4.5-5.5)	20-40	4-11 (10-25)
b) American Wheat	1.030-50 (7.5-12.5)	1.004-18 (1-4.5)	2.8-3.6 (3.5-4.5)	5-17	2-8 (4-16)
7. English Bitter					
a) English Ordinary	1.033-38 (8-9.5)	1.006-12 (1.5-3)	2.4-3.0 (3-3.7)	20-35	8-12 (16-20)
b) English Special	1.038-45 (9.5-11.5)	1.006-12 (1.5-3)	3.3-3.8 (4.1-4.8)	28-46	12-14 (30-35)
c) English Extra Special	1.046-60 (11.5-15)	1.010-15 (2-4)	3.8-4.6 (4.8-5.8)	30-55	12-14 (30-35)
8. Scottish Ale					
a) Scottish Light	1.030-35 (7.5-9)	1.006-12 (1.5-3)	2.2-2.8 (2.8-3.5)	9-20	8-17 (16-40)
b) Scottish Heavy	1.035-40 (9-10)	1.010-14 (2.5-3.5)	2.7-3.1 (3.5-4)	12-20	10-19 (20-75)
c) Scottish Export	1.040-50 (10-12.5)	1.010-18 (2.5-4.5)	3.1-3.5 (4-4.5)	15-25	10-19 (20-75)
9. Porter					
a) Robust Porter	1.044-60 (11-15)	1.008-16 (2-4)	3.9-5.1 (5-6.5)	25-40	30+ (120+)
b) Brown Porter	1.040-50 (10-12.5)	1.006-10 (1.5-2.5)	3.5-4.7 (4.5-6)	20-30	20-35 (80-135)
10. English and Scottish Strong Ale					
a) English Old Ale/Strong Ale	1.055-75 (14-19)	1.008-20 (2-5)	4.7-6.3 (6-8)	30-40	10-16 (20-35)
b) Strong "Scotch" Ale	1.072-85 (18-21)	1.016-28 (4-7)	4.9-6.3 (6.2-8)	25-35	10-47 (20-100)
11. Stout					
a) Classic Dry Stout	1.038-48 (9.5-12)	1.008-14 (2-3.5)	3-3.9 (3.8-5)	30-40	40+ (150+)
b) Foreign-style	1.052-72 (13-18)	1.008-20 (2-5)	4.7-5.9 (6.7-5)	30-60	40+ (150+)
c) Sweet Stout	1.045-56 (11-14)	1.012-20 (3-5)	2.4-4.7 (3-6)	15-25	40+ (150+)
d) Imperial Stout	1.075-95 (19-23.5)	1.020-30 (4-7.5)	5.5-7.1 (7-9)	50-80	20+ (80+)
LAGER					
12. Bock					
a) Traditional German Bock	1.066-74 (16.5-18.5)	1.018-24 (4.5-6)	4.7-5.9 (6.7-5)	20-30	20-30 (70-120)
b) Helles (light) Bock	1.066-68 (16.5-17)	1.012-20 (3-5)	4.7-5.9 (6.7-5)	20-35	4-10 (10-20)
c) Doppelbock	1.074-80 (18.5-20)	1.020-28 (5-7)	5.1-6.3 (6.5-8)	17-27	12-30 (30-120)
d) Eisbock	1.092-116 (23-29)	n/a	6.8-11.3 (8.6-14.4)	26-33	18-50 (42-200)
13. Bavarian Dark					
a) Munich Dunkel	1.052-56 (13-14)	1.014-18 (3.5-4.5)	3.5-3.9 (4.5-5)	16-25	17-20 (40-80)
b) Schwarzbier	1.044-52 (11-13)	1.012-16 (3-4)	3-3.9 (3.8-5)	22-30	25-30 (100-200)
14. German Light Lager					
a) Dortmund/Export	1.048-56 (12-14)	1.010-14 (2.5-3.5)	3.8-4.7 (4.8-6)	23-29	4-6 (8-13)
b) Munich Helles	1.044-52 (11-13)	1.008-12 (2-3)	3.5-4.3 (4.5-5.5)	18-25	3-5 (7-12)
15. Classic Pilsner					
a) German	1.044-50 (11-12.5)	1.006-12 (1.5-3)	3.1-3.9 (4-5)	30-40	2.5-4 (6-10)
b) Bohemian	1.044-56 (11-14)	1.014-20 (3.5-5)	3.1-3.9 (4-5)	35-45	3-5 (7-14)
16. American Lager					
a) Diet/Lite	1.024-40 (6-10)	1.002-08 (0.5-2)	2.3-3.3 (2.9-4.2)	8-15	2-4 (4-7)
b) American Standard	1.040-46 (10-11.5)	1.006-10 (1.5-2.5)	3-3.5 (3.8-4.5)	5-17	2-4 (4-7)
c) American Premium	1.046-50 (11.5-12.5)	1.010-10.14 (2.5-3.5)	3.4-3.9 (4.3-5)	13-23	2-8 (4-16)
d) Dry	1.040-50 (10-12.5)	1.004-08 (1-2)	3.5-4.4 (4.5-5.6)	15-23	2-4 (4-7)
e) Cream Ale/Lager	1.044-55 (11-14)	1.004-10 (1-2.5)	3.5-5.5 (4.5-7)	10-22	2-4 (4-10)
f) American Dark	1.040-50 (10-12.5)	1.008-12 (2-3)	3.5-4.3 (4.5-5)	14-20	10-20 (25-80)
17. Vienna/Okttoberfest/Märzen					
a) Vienna	1.048-55 (12-13.5)	1.012-18 (3-4.5)	3.5-4.7 (4-6)	22-28	8-12 (16-30)
b) Märzen/Okttoberfest	1.052-64 (13-16)	1.012-20 (3-5)	3.8-5.1 (4.8-6.5)	22-28	4-15 (10-35)



	Original Gravity (Balling/Plato)	Final Gravity (Balling/Plato)	Percent alc./wt. (alc./vol.)	Int'l Bittering Units	Color SRM (EBC)
MIXED STYLE (LAGER-ALE)					
18. German Style Ale					
a) Dusseldorf-style Altbier	1.044-48 (11-12)	1.008-14 (2-3.5)	3.4-3.9 (4.3-5)	25-48	11-19 (30-45)
b) Kölsch	1.042-46 (10.5-11.5)	1.006-10 (1.5-2.5)	3.5-3.9 (4.4-5)	20-30	3.5-5 (8-14)
19. Fruit Beer					
a) Fruit Beer	1.030-110 (7.5-27.5)	1.006-30 (1.5-7.5)	2-9.4 (2.5-12)	5-70	5-50 (10-200)
b) Classic-style Fruit Beer	(refer to individual styles)				
20. Herb Beer					
a) Herb Beer	1.030-110 (7.5-27.5)	1.006-30 (1.5-7.5)	2-9.4 (2.5-12)	5-70	5-50 (10-200)
b) Classic-style Herb Beer	(refer to individual styles)				
21. Specialty Beer					
a) Specialty Beer	1.030-110 (7.5-27.5)	1.006-30 (1.5-7.5)	2-9.4 (2.5-12)	0-100	1-100 (3-400)
b) Classic-style Specialty Beer	(refer to individual styles)				
22. Smoked Beer					
a) Bamberg-style Rauchbier	1.048-52 (12-13)	1.012-16 (3-4)	3.4-3.8 (4.3-4.8)	20-30	10-20 (20-80)
b) Classic-style Smoked Beer	(refer to individual styles)				
c) Other	(varies widely)				
23. California Common Beer					
a) California Common Beer	1.040-55 (10-14)	1.012-18 (3-4.5)	2.8-3.9 (3.6-5)	35-45	8-17 (16-40)
24. German-style Wheat Beer					
a) Berliner Weisse	1.028-32 (7-8)	1.004-06 (1-1.5)	2.2-2.7 (2.8-3.4)	3-6	2-4 (5-10)
b) Weizen/Weissbier	1.048-56 (12-14)	1.008-16 (2-4)	3.8-4.2 (4.8-5.4)	10-15	3-9 (8-16)
c) Dunkelweizen	1.048-56 (12-14)	1.008-16 (2-4)	3.8-4.2 (4.8-5.4)	10-15	16-23 (35-95)
d) Weizenbock	1.066-80 (16.5-20)	1.016-28 (4-7)	5.1-5.9 (6.5-7.5)	10-20	7-30 (14-120)
25. Traditional Mead and Braggot					
a) Sparkling Traditional Mead	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0	0-4
b) Still Traditional Mead	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0	0-5
c) Sparkling Braggot	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0	0-4
d) Still Braggot	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0	0-5
26. Fruit Mead					
a) Sparkling Melomel	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0-15	—
b) Still Melomel	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0-20	—
c) Sparkling Cyser	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0-15	—
d) Still Cyser	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0-20	—
e) Sparkling Pymment	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0-15	—
f) Still Pymment	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0-20	—
27. Herb Mead					
a) Sparkling Methaglin	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0-15	—
b) Still Methaglin	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0-20	—
c) Sparkling Hippocras	1.050-90 (12.5-22.5)		3.9-8.6 (5-11)	0-15	—
d) Still Hippocras	1.090-140 (22.5-35)		8.6-11.8 (11-15)	0-20	—
28. Cider					
a) Still	1.045-53 (11.3-13.3)		5.5 (7)	—	—
b) Sparkling	1.045-61 (11.3-15.3)		6.3 (8)	—	—
c) New England-style	1.061-105 (15.3-26.3)		6.3-11 (8-14)	—	—
d) Specialty Cider	1.045-105 (11.3-26.3)		4.6-11 (5.8-14)	—	—
29. Saké					
a) Saké (Japanese rice beer)	—		9.4-15.7 (12-20)	—	—
b) Sparkling Saké	—		9.8 (12.5)	—	—
c) Other Oriental Rice Beers	—		(varies w/style)	—	—

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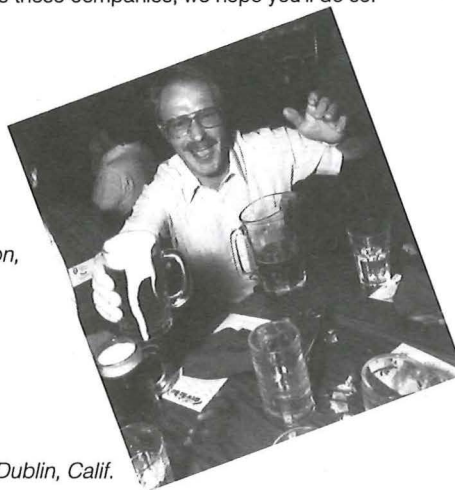
Broadway Brewing Co., Denver, Colo.

F.H. Steinbart Co., Portland, Ore.

Millrose Country Store, South Barrington, Ill.

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American Homebrewers Association 1995 National Homebrew Competition

1995 Site Locator Map

FIRST-ROUND ENTRIES MUST BE RECEIVED BETWEEN MONDAY, APRIL 3, AND 5 P.M. FRIDAY, APRIL 14, 1995.

Send your entries to the National Homebrew Competition site in the same shaded region as the state or province in which you live.

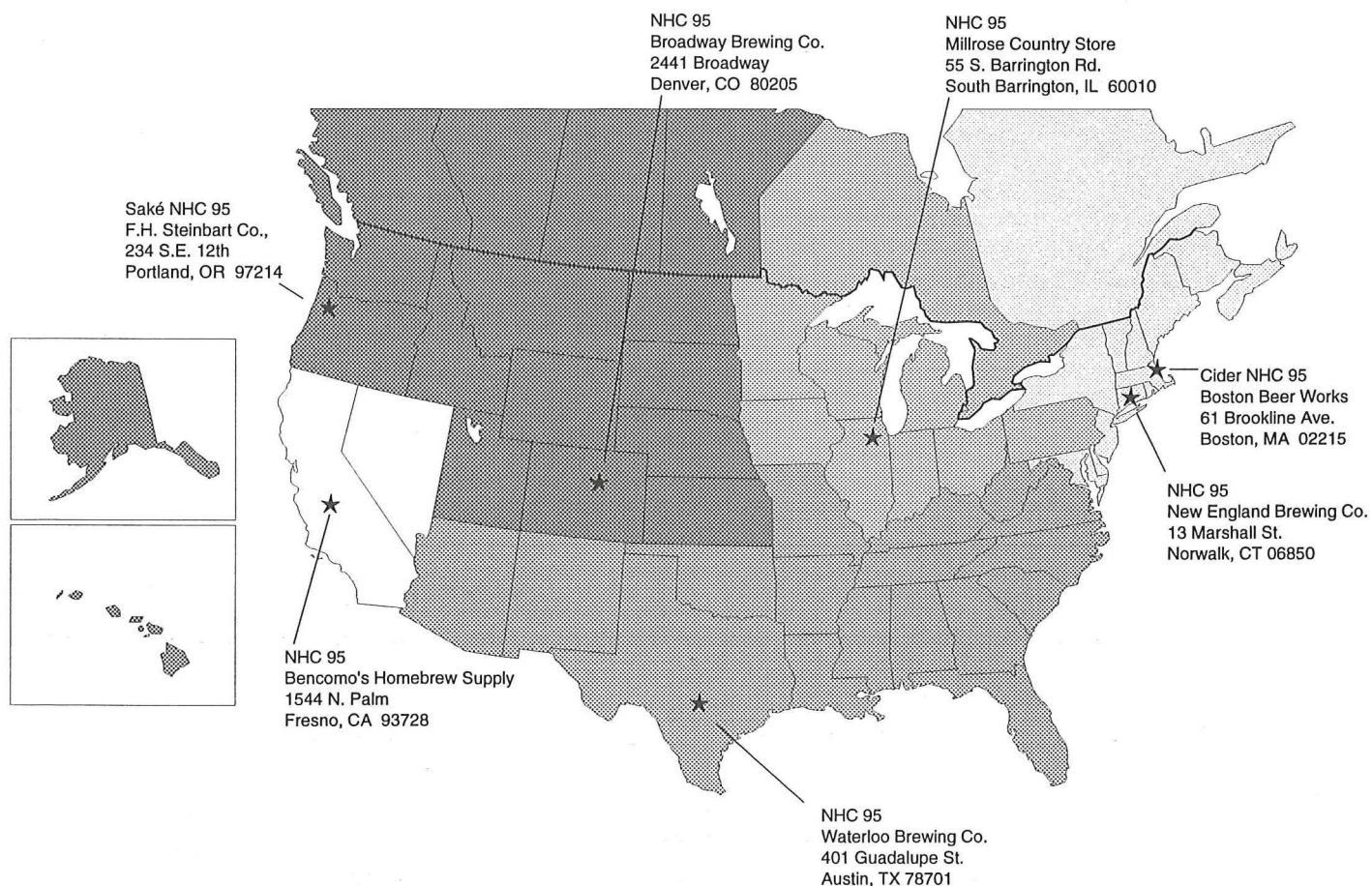
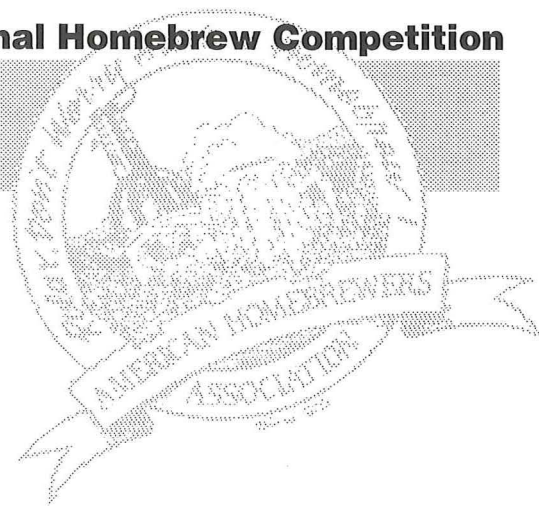
All saké entries should be sent to Portland regardless of where you live.

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Do not send beer or mead entries to Portland or Boston.

If you live outside of the United States or Canada, send your entries to Denver.

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PLEASE READ THE INSTRUCTIONS ON PAGE 3 OF THE RULES AND REGULATIONS BROCHURE.

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Section B: Entry Information

- ## Section C: Ingredients and Procedures

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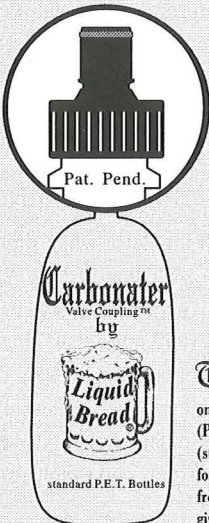
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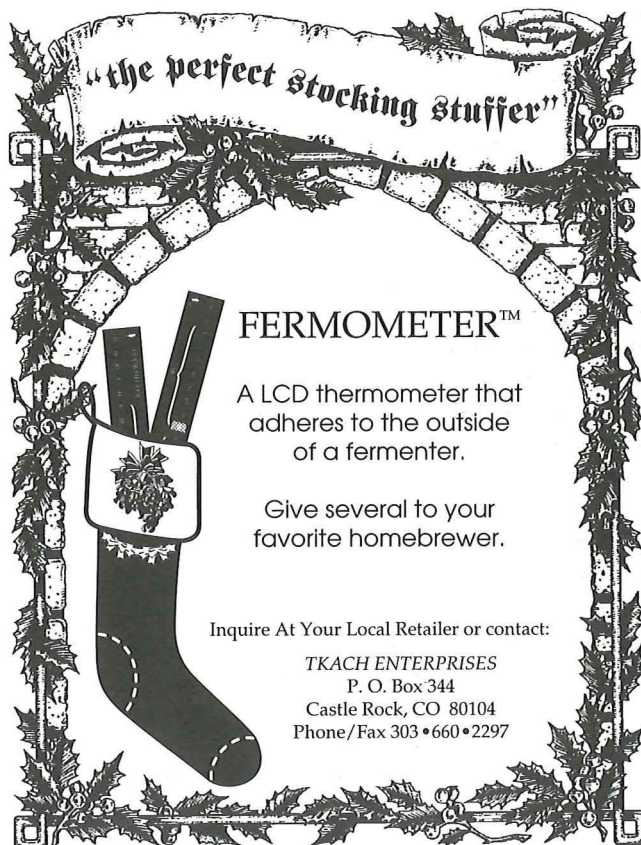


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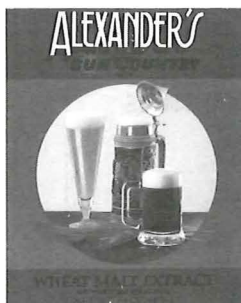
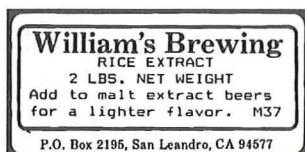
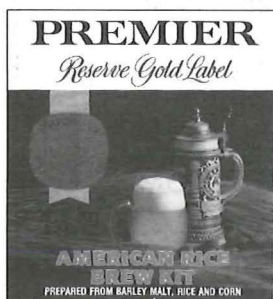
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T H E B E S T F R O M KITS

Steve Daniel

American Light from Extracts



I guess growing up in the Corn Belt and the scalding south Texas climate are the culprits, but I enjoy drinking my version of American light as much as any of the other styles I brew. It goes well with everything from yardwork to lying around the house when it's too hot to do anything outside (in Houston this generally is recognized as the months with vowels in them). Many all-extract brewers have asked me how to make good American light, but because I use an all-grain recipe, it is difficult to give them a good answer. Don't get me wrong, I know extract makes absolutely wonderful beer. The biggest drawback I have encountered in using extract to make American light is that most brands are simply too dark, usually because of caramelization of malt sugars during processing.

To make malt extract, water is evaporated from fresh wort using elevated temperatures and a partial vacuum, similar to the way condensed milk is made. Unless special care is taken, the high temperature in the evaporation kettle will turn even the palest wort into a dark, overcaramelized malt extract in a hurry. Because extract also darkens with age, the problem can be worsened by a long stint in a warehouse or on a retailer's shelf.

Therefore, most of the extract-based American lights I have sampled looked and tasted like a watered-down amber ale. Furthermore, they tended to lack the grainy freshness of those produced with a full mash. Common sense tells me that much of the fresh grain character probably is removed during the evaporation process, though I have no scientific data at my fingertips to support this belief. Darker styles can overcome this deficiency by adding specialty grains at some point in the brewing process, but this is not a viable option when our American light wort can't stand to be any darker or dextrinous than it already is. So up to now the question remained for me: can this style be done right with extract? When I got the opportunity to review American light kits, I was excited that I finally had a good reason to find the answer.

I have been an all-grain brewer for 10 years, so I knew it would be important to keep an open mind. After all, homebrewing has come a long way in the past few years and the quality of extracts has gotten much better, right? Well, yes and no. I learned it is possible to make an American light lager that looks and tastes like an all-grain beer but is made with 100 percent extract. Conversely, it is still all too easy to create something that would pass as a amber ale using a kit labeled as American light.

Premier Reserve Gold Label American Rice Brew Kit

A book of beer recipes included with the Premier Reserve Gold Label American Rice brew kit was in keeping with other writings of the Prohibition genre — it came jam-packed with questionable recipes and bad advice. What was described as "one of our most popular recipes" called for four pounds of corn sugar and a kilogram (2.2 pounds) of extract in five gallons! This would undoubtedly result in beer that tasted just like the stuff grandpa used to make: cidery and undrinkable. The list of ingredients included Brewer's Gold hops, which I haven't seen in years.

The Premier American Rice Brew Kit comes in a 3.3-pound can and, according to the manufacturer, is made with 30 percent rice and 10 percent high maltose corn syrup. Though it may sound quite high, this amount of adjunct is not uncommon in American-style beer.

Unfortunately, when I opened the cans I was disappointed to see the extract was nearly the color of chocolate syrup, which isn't what I look for when the desired result is a lager the color of straw. With the help of my local retailer, I was able to determine that the cans were more than nine months old at the time of brewing. In all fairness, this is plenty of time for even the best malt syrup to darken considerably. I decided to forego the recipes in the book and simply used the following:

Ingredients for 5 gallons

- 2 cans (6.6 pounds total) Premier American Rice brew kit
- 2 pints (1 liter) actively fermenting lager yeast (Wyeast No. 2206)

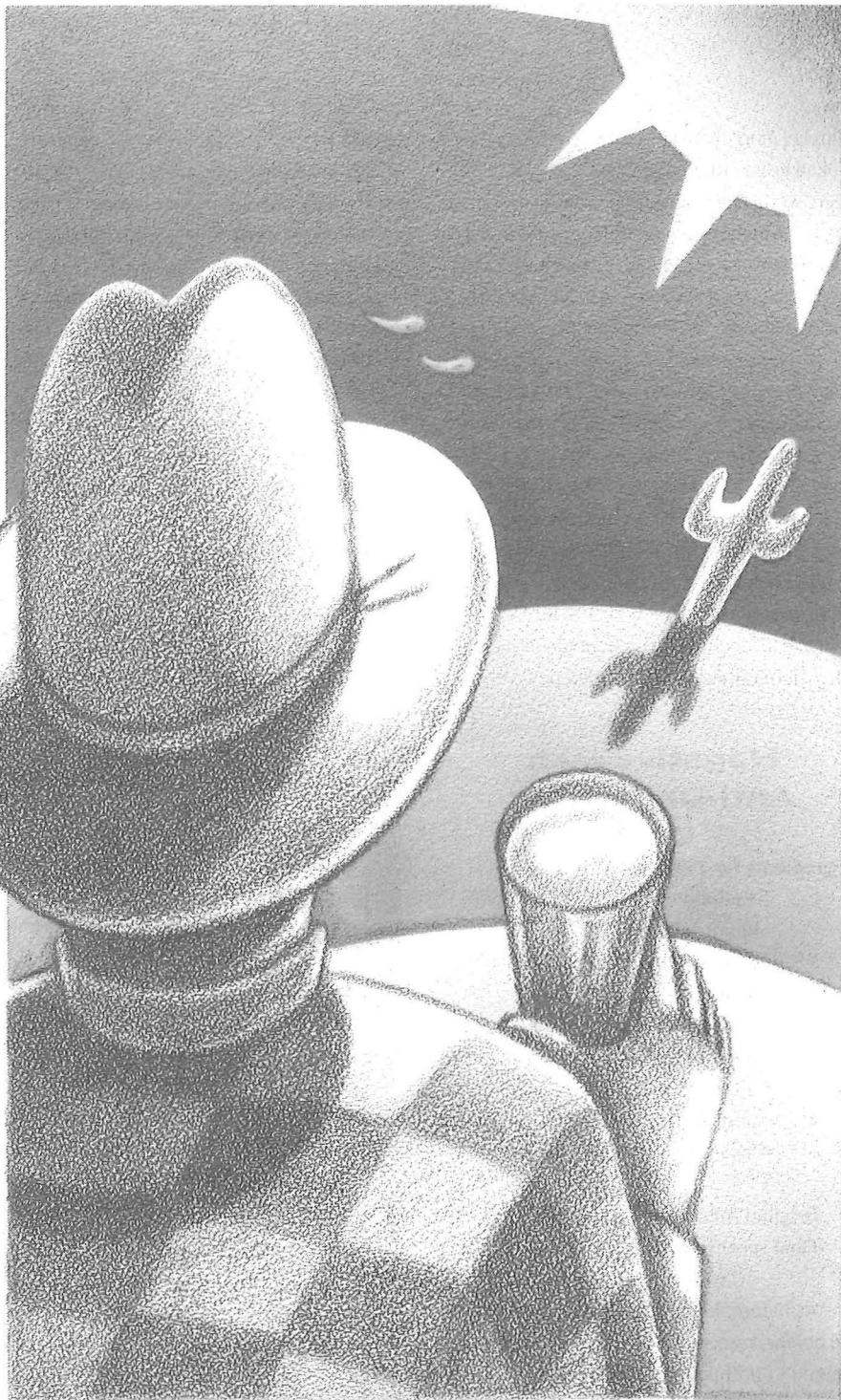
- **Original specific gravity: 1.045**
- **Final specific gravity: 1.015**

To prevent scorching, I heated 4 1/2 gallons of water to boiling, turned off the heat and thoroughly mixed in the hopped extract. I was concerned about the dark color of the resulting wort, so I decided to boil only 15 minutes to avoid further caramelization. I also made a second batch identical to the first except for the addition of 1/4 ounce of Mount Hood hops for the last five minutes of the boil. Both batches were force cooled, pitched and fermented at 48 degrees F (9 degrees C) for 14 days in glass carboys. The green beer was racked and lagered for 14 days at 32 degrees F (0 degrees C) in soda canisters. It was then filtered and force carbonated in soda canisters. Most brewers do not have the equipment to cold ferment, filter and carbonate their beers in this manner, but don't worry. You should be able to get acceptable results using a clean-fermenting warm-temperature yeast, such as Wyeast American ale No. 1056, and traditional priming and settling methods.

The first batch was predictably dark, being the color of a typical full-bodied pale ale. It had a clean and fairly neutral aroma, which is desirable for American light. The flavor was very full-bodied with a pronounced hop bitterness and a lingering caramel character. This was followed by a stale grain aftertaste unmistakably due to the poor condition of the base extract. Actually, with a little hop flavor and aroma this would have made a very tasty pale ale. This proved to be the case with the next batch in which finishing hops were used. The beers were quite similar, but the second batch was much more interesting and complex. It had a subtle but pleasing hop aroma and flavor that blended well with the beer's full malt character. Overall, I liked the beer produced by this kit. Unfortunately, it would not fit the targeted style, even using the most liberal judging criteria.

William's Rice Extract and Alexander's Sun Country Extract

I know nothing can beat a little American (light) ingenuity, so I selected Alexander's Sun Country Extract to use in conjunction with



William's Rice Extract for my next attempt.

Alexander's Sun Country Extract is made with 100 percent domestic two-row barley. It is gently processed, which means it is noticeably lighter and about 10 percent thinner than most other brands. Consequently, the fresh grain characteristics that seem to be absent in most other extracts are largely retained. Alexander's Sun Country Extract is available at homebrew shops in unhopped four-pound cans.

According to the vendor, William's Rice Extract is naturally mashed with malt enzymes,

unlike some others made by a chemical extraction process. It is a light golden syrup that doesn't seem to taste as starchy as some others I've tried. In fact, it was so tasty I thought for sure I would polish off the entire pouch before I could get it into the brew kettle. Talk about a sugar rush! William's Rice Extract is available in two-pound pouches from William's Brewing in San Leandro, Calif.

I knew the combination of these two exceptionally light extracts would be a success from the standpoint of color, but I have

sampled more than a few American lights that looked great and tasted awful. Most of these beers were made using large amounts of corn sugar, which imparts objectionable off-flavors. Because rice extract contains both simple and complex sugars, it is much more forgiving than corn sugar and can be used in relatively large amounts without tainting the beer. Homebrewers also tend to be a little overenthusiastic with their hopping rates when brewing American light. While this may be great for some beers, judicious use of hops is essential in this style. For this batch I decided to use enough to give a little more bitterness than the average megabrew, but not much. I also elected to use enough of the William's Rice Extract to make up about 40 percent of the fermentables. Here is the recipe I decided on:

Negative Man Anti-Dark Lager

Ingredients for 5 gallons

- 1 4-pound can of Alexander's Sun Country Extract
- 3 pounds (1 1/2 pouches) William's Rice Extract
- 1/2 ounce Mount Hood bittering hops, 6.3 percent alpha acid (60 minutes)
- 2 pints (1 liter) actively fermenting lager yeast (Wyeast No. 2206)

- Original specific gravity: 1.044
- Final specific gravity: 1.009


As before, I heated 4 1/2 gallons of water to boiling, turned off the heat and thoroughly mixed in both extracts. After returning the wort to a boil I added the hops and water as necessary to keep the wort volume at five gallons. The methods used to ferment, lager and carbonate the Premier kits were also used for this batch.

The resulting beer was a beautiful medium-gold color. It was not quite as pale as some of my all-grain efforts, but was well within even the most stringent guidelines. It had a very clean and neutral aroma and the flavor was uncomplicated and refreshing, as an American light should be. I was quite pleased to detect absolutely no caramel or stale malt flavors. The generous use of rice

extract did not result in any cidery off-flavors, but it did impart a pleasantly dry finish. My only criticism is that it did not quite have the fresh grain flavor and aroma I am accustomed to, but that's some serious nit-picking on my part. This probably could be remedied by substituting a pound of Alexander's extract for a pound of the William's Rice Extract in the next batch.

Do I finally have a good answer for my extract-only friends who ask me how to make a quality American light? You bet!

Steve Daniel, alias Negative Man, is a National BJCP judge and has been making his own beer for more than 15 years. He currently resides in League City, Texas, with his wife and brewing partner, Tina. Together they have garnered numerous awards including first-place honors for American Light, Cream Ale, Munich Helles, German Pilsener and Alt beer at AHA National Homebrew Competitions over the years.

This article is available on Library 13-AHA/zymurgy/Clubs on CompuServe's Beer and Wine Forum as BSTKIT.W94. 

CLASSIC BEER STYLE SERIES

This classic library of books on traditional beer styles continues to set the standard. Each book is researched by experts and details the history, flavor profiles, methods, recipes and ingredients of a specific style of beer. For homebrewers, professional brewers and beer enthusiasts, these books are a great way to expand your knowledge of beer styles and brewing techniques.

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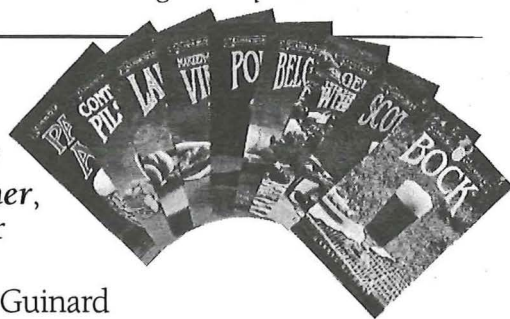
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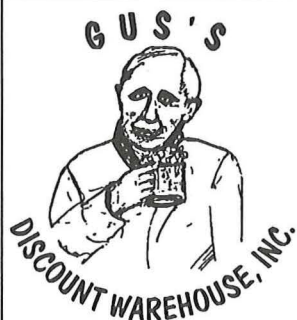


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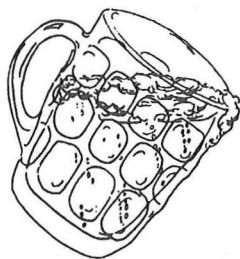
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REVIEWS

The opinions of individual reviewers do not necessarily represent the opinions of the American Homebrewers Association or *zymurgy*.

Correction

The review of The Sucking Thing from Lowenbitter in *zymurgy* Fall 1994 (Vol. 17, No. 3) listed an incorrect phone number. The correct number is (800) 474-7737. The new price is \$11.95.

Bottle Washers

The plentiful pile of bottles in my brewing sink was calling out "clean me! clean me!" when I received carboy and bottle washers from Chateau Distributors, JET Carboy and Bottle Washer Co. and Fermenthaus for this review.

The first thing I noticed was the similarity in design of the slightly smaller Chateau product and the JET product. These two are V-shaped brass and function by inverting the bottle over one end and applying pressure to the valve release arm. The flow sprays a powerful stream into the bottle, blasting out the yeast sludge in seconds.

Do not make the mistake of turning on the water before either holding up the release arm or putting a bottle over the outlet. The result

will be a quick shot of hot water in the face. Both the Chateau and JET washers are subject to jarring pipe hammer. This experience is noisy and probably unhealthy for the plumbing.

The Fermenthaus washer is clearly a better design. The washer is J-shaped to provide better bottle or carboy access and has a valve design that controls the flow before entering (and thus pressurizing) the tube, preventing pipe hammer and the nasty shot of water to the face. The question for the brewer is whether this improvement is worth the additional cost.

The results of the bottle and carboy washing test were identical for the three washers. They work within seconds to clean a recently emptied bottle. All three get off most of the hardened crud in crustier bottles and carboys, which can be finished with a swish of

a bottle or carboy brush. Using a washer will save a great deal of cleanup time and is worth the small investment. I brewed for three years before purchasing a washer and it has made rinsing and cleanup far easier.

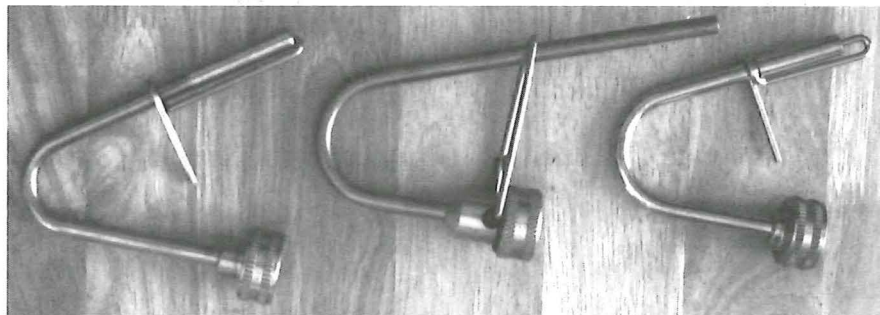
Each of these washers will need a garden-hose-style adapter unless you have a sink with a male fitting of this type. An adapter should be available at your homebrew supply shop or hardware store for \$3 to \$5. The Chateau and JET washers are fully guaranteed, so if your washer breaks just return it to the point of purchase for a refund.

Retail prices for the Chateau range from \$8.95 to \$10.50. Manufacturers' suggested retail price for the JET is \$11.95 and Fermenthaus is \$20. These products should be available in your homebrew supply shop or contact Chateau at PO Box 2683, Sumas, WA 98295; (604) 882-9692; JET at 3301 Veterans Dr. Suite 201, Traverse City, MI 49684; (616) 935-4555 and Fermenthaus at Box 4220, Victoria, BC V8X 3X8; (604) 386-1023 for the closest distributor.

Reviewed by Paul Gatza, homebrewer and employee of What's Brewin', a Boulder, Colo., homebrew supply shop.

The Brewer's Companion

Many homebrewers enjoy their hobby with companions: friends, neighbors, club members, spouses, kids, cats, dogs. Now we can also brew with knowledge as our companion, using the new book by Randy Mosher, *The Brewer's Companion* (Alephenalia Publications, 1994). The cover of this 8 1/2 by 11-inch paperback accurately proclaims the *Companion* "a complete compendium of



Left to right: JET, Fermenthaus and Chateau bottle washers

brewing knowledge thoughtfully arranged for the amateur brewer containing numerous and diverse charts, tables, graphs, etc., as an aid in the successful brewing of quality beer." Interspersed in the text is a plethora of facts, data, forms and calculations presented with innovative graphics covering just about every topic of interest to homebrewers.

I think this book targets beginning to intermediate grain brewers, who stand to gain the most with this *Companion* next to their mash tuns. Extract brewers will find much applicable information as well, but the emphasis is clearly on the grain-brewing process. Advanced homebrewers already will be familiar with most of the concepts and data, and have seen some of Randy's work published in *zymurgy*. The creative presentation of graphics inspired me to think differently about the brewing parameters. Such food for thought leads to even more creativity for the advanced brewer.

The tables, charts, graphs and forms are really the heart of the *Companion*. The informative and sometimes humorous text leads the reader to more and more graphics. Also included are numerous black-and-white reproductions of interesting beer bottle labels, tossed in randomly for our amusement.

So what are these graphics about? Randy has tables for beer style characteristics, flavor origins, mash enzymes, mash extract, hop bitterness, malt characteristics, carbohydrate characteristics, chemical additives, fruit adjuncts, hop characteristics, water treatment, yeast and bacteria data, cleaning agents, parti-gyle brewing and trouble-shooting. There are plots for beer color, gravity, bitterness, attenuation, grain roasting, hop utilization, mash schemes and beer maturation. Finally, blank forms are included for recipes, mash data, fermentation data, beer evaluation, water treatment and everything else you should be recording as a conscientious homebrewer.

How do all these data fit in with the computer age? For those who are electronically challenged the *Companion's* tables will let you do myriad estimates and calculations for your batch with only a pencil and a blank form. Add a pocket calculator and you can figure

anything. For those using their own computerized batch calculation spread sheets, either homemade or prefab, the forms in the *Companion* will give you more ideas to refine and customize those spread sheets, as well as providing a large data base on which to draw.

The *Companion* does not list recipes, but goes beyond by presenting the information you need to

formulate your own and adapt the recipes of others to your brewing methods and preferences. The plots on traditional mashing schemes were very interesting, as were the estimates for temperature equilibration for infusion mashes. I also liked the simplified presentation on water treatment.

The 285 pages include an index and glossary, as well as about 90 pages of duplicate blank forms meant for direct data entry into the book. I think just a single form of each type would be sufficient. There are numerous editorial errors that can be irritating at times, but most are easily deciphered. The author strongly advocates a protein rest for most mashes, although many homebrewers report successful mashes with domestic malts that skip that step. Also curious is Randy's favoring the use of black patent malt instead of chocolate malt for color and flavor in many beer types.

In many places, the usual conventional advice is doled out without much technical support, even though alternate — and sometimes

opposite — techniques work fine for me and others. Missing from the table on sanitizers is the very popular iodophor. One advanced topic not covered is homebrew filtering.

Homebrewers have so much to be excited about in *The Brewer's Companion* that its flaws are easily overshadowed. This is a significant collection of homebrewing knowledge, and one I'll keep close to my brewery for quick reference or creative insight.

The Brewer's Companion by Randy Mosher, Alephenalia Publications, 1994, 285 pages, publishers suggested retail price: \$19.95.

Reviewed by Tom Altenbach, a longtime homebrewer, Certified BJCP judge and competitor with more than 50 homebrewing awards garnered in California, AHA Nationals and club-only events. His Bavarian dark beer won second place in the AHA 1994 National Homebrew Competition.

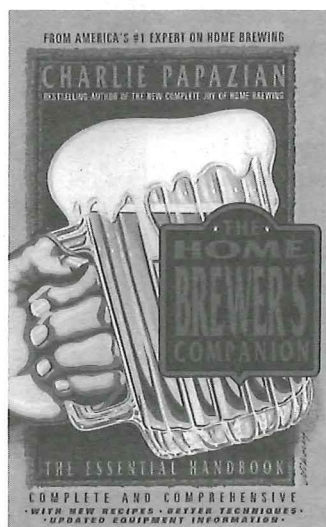
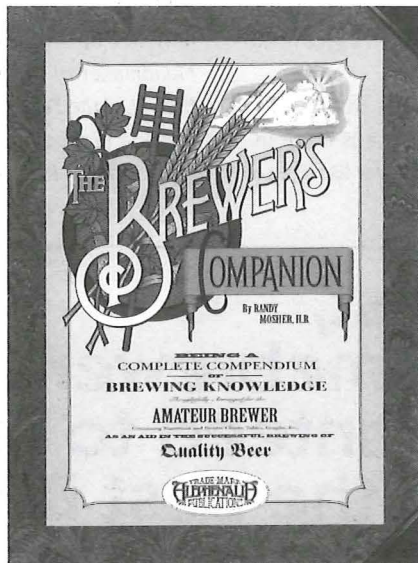
The Home Brewer's Companion

Back in 1993, Charlie Papazian told me a new book was in the works, an advanced book covering all sorts of things he'd learned in the past several years. I was given to expect much new material, and when *The Home Brewer's Companion* arrived, my expectations were definitely met.

This is a rather encyclopedic work, and most of the information has been collected with intermediate and advanced brewers in mind.

It contains information on almost everything having anything to do with homebrewing, including some new ideas entering the homebrewing literature for the first time. These are adroitly blended with many highly personal observations in Charlie's inimitable style, and some material previously published by the AHA.

You'd expect discussions of malt, hops, yeast and water, and they're here, along with other aspects of the brewing process from boiling to kegging. Recipes abound,



covering everything from American light lager to ancient Sumerian beer.

Finally, there is a section on beer evaluation and some welcome observations on the currently hot topic of beer and food.

All in all, there's enough good new stuff to assure this book a place in the libraries of most serious (or even adventurous) homebrewers. For example, from this book you learn that some hop bitterness can be lost during filtration, that plastic PET bottles can be useful in certain homebrewing situations and much more!

Given the amount of useful information this book contains, it seems a shame that some potential difficulties tend to reduce its helpfulness.

First, there's a marketing problem. It's not clear how either Charlie or Avon Books expect this effort to interface with his previous book from the same publisher. At various points general observations are made on a topic and the reader is referred to *The New Complete Joy of Home Brewing* (Avon Books, 1991) to find out exactly what to do. This isn't a problem if the new book is marketed as the second volume of a set.

There's further potential for confusion of a different sort in the book's recipe section. Just before the recipes begin we read, "Bitterness units will always refer to International Bitter Units and not Homebrew Bittering Units unless explicitly mentioned" (page 280). However, recipes in the ale and lager sections (pages 282-319, 325-352) list HBU with each hop variety and then switch to "BU" (which appears to be the same as IBU) in the summaries at the end.

There are a few factual problems. I'm not overly concerned with quibbles about whether Munich brewers really use traditional acid rests rather than lime for their pH adjustments, or whether such rests would really reduce brewing water carbonates in any case, or whether flaming container lips with a butane lighter is worth the trouble. It may not even be important to debate the assertion that worrying is really "the single and most dramatically significant thing that can spoil the taste of your beer," though I'd personally bet on wild yeast and bacteria.

But I get much more upset when I see something certain to create real problems

for lots of people. In this book the statement with the most disastrous potential has to be the one on page 23: "For brewing purposes, hot tap water is essentially sanitized water." Echoes of this stunningly unfortunate idea show up in other places as well. Homebrewers such as Dave Miller, George Fix and Greg Noonan suggest the opposite is true.

Even with such caveats, this book is quite an achievement. There is more interesting stuff than I could ever list in a re-

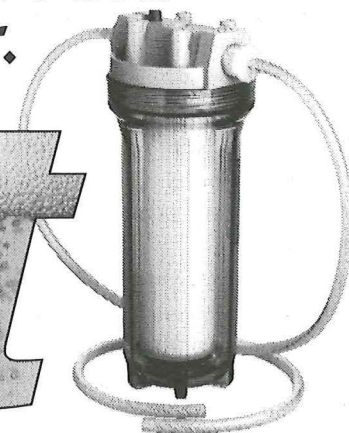
view, so relax, grab yourself a homebrew or two and enjoy! Just don't think one sitting (or homebrew) will be enough. You're going to be at it awhile!

The Home Brewer's Companion by Charlie Papazian, Avon Books, 1994, 431 pages, publisher's suggested retail price: \$11.

Reviewed by Byron Burch, AHA 1992 and 1994 Meadmaker of the Year, AHA 1986 Homebrewer of the Year, longtime beer and winemaker and proprietor of The Beverage People™ in Santa Rosa, Calif.

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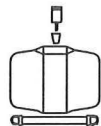
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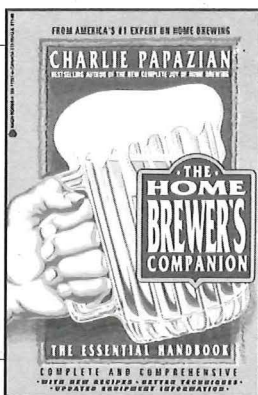
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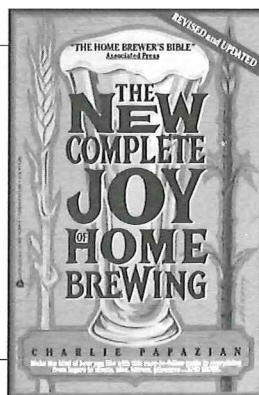
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- Information on beer evaluation, handling and storage

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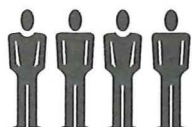


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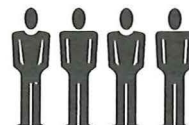
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HOMEBREW CLUBS



James Spence

Club Rendezvous News



Sonoma Beerocrats present at BrewStorm accept their ninth consecutive Homebrew Club of the Year trophy. From left to right: Kim Weerts, Betty Ann Sather, Juliet Byers, Byron Burch, Dave Lewis, Martin Stokes, AHA Administrator James Spence, AHA President Karen Barela. In the front row from left: Charlie Milan, Michael Byers and Keith Weerts.

Homebrew clubs play a big role in making the AHA National Homebrewers Conference fun and interesting. Almost 40 percent of the 1994 attendees were affiliated with a homebrew club. The enthusiasm and fellowship homebrew clubs bring to, and gain from, the Conferences is one of the biggest rewards for homebrewers who attend.

New for the 1994 Conference was the Mile High Homebrew Club Rendezvous — a chance

for club members to pick the brains of a panel of homebrew club experts. Seven expert club members gave people a chance to ask questions and swap ideas about starting and running a homebrew club, covering everything from where to meet to liability and insurance concerns. Participants were Hal Buttermore (Ann Arbor Brewers), Steve Stroud (Boston Wort Processors), Byron Burch (Sonoma Beerocrats), Randy Mosher (Chicago Beer Society), John Naegele (New York City Homebrewers Guild), Keith Symonds

(Underground Brewers of Connecticut) and Ed Busch (MASH, now defunct).

An overwhelming issue for many Rendezvous attendees was liability. The hypothetical example of a club member making an error in judgment, causing an accident and the homebrew club being held responsible by lawyers looking for the "deep pockets" in the case was the oft-cited example. Clubs and club members wanted to know what their responsibilities would be in such an unfortunate case,

and how the club can protect itself. The panel agreed that clubs should try to legally incorporate, as this step limits the personal liabilities of members and officers. Many of the club members attending had taken this step and mentioned how easy and inexpensive the process can be.



Participants of the Mile High Homebrew Club Rendezvous were Hal Buttermore (Ann Arbor Brewers), Steve Stroud (Boston Wort Processors), Byron Burch (Sonoma Beero-crats), Randy Mosher (Chicago Beer Society), John Naegele (New York City Homebrewers Guild), Keith Symonds (Underground Brewers of Connecticut) and Ed Busch (MASH, now defunct).

Keeping a club alive and kicking was thoroughly discussed. Some people were surprised and reassured by the fact that 25 to 30 percent meeting attendance was considered "normal and healthy" by the panel. Several suggestions for activities and effective club policies were given. Among them:



AHA SANCTIONED COMPETITION

Kudos

March 11, 1994
MARCH MASHFEST
Fort Collins, Colo., 133 entries.
Dan Rabin of Boulder, Colo.,
won best of show.

March 25, 1994
MARCH IN MONTREAL
Montreal, Quebec, 51 entries.
Brecht Foat of Tottenham, Ont.,
won best of show.

March 26, 1994
**HUDSON VALLEY
HOMEBREWERS FOURTH
ANNUAL HOMEBREW
COMPETITION**
Poughkeepsie, N.Y., 155 entries.
Jim Taylor of New Paltz, N.Y.,
won best of show.

April 3, 1994
**FOURTH ANNUAL "FIGHTIN'
FOURTH BEER AND CHILI
BREW OFF"**
Tacoma, Wash., 50 entries.
John Bonn of Redmond, Wash.,
won best of show.

April 6, 1994
**UPSTATE NEW YORK HOME-
BREWERS ASSOCIATION 16TH
ANNUAL COMPETITION/FIFTH
ANNUAL EMPIRE STATE OPEN**
Rochester, N.Y., 161 entries.
Wendy and Chuck Bryant of
Scottsville, N.Y., won best of show.

April 9, 1994
**GREEN MOUNTAIN HOMEBREW
COMPETITION**
Burlington, Vt., 286 entries.
Scott Keohane of Carlisle, Mass.,
won best of show.

April 9, 1994
**TRI-STATE REGIONAL
HOMEBREW COMPETITION**
Huntington, N.Y., 161 entries.
Rich Kowalski and Geoff Cintron of
Hicksville, N.Y., won best of show.

April 15, 1994
**BLUFF CITY BREWERS
SIXTH ANNUAL HOMEBREW
EXTRAVAGANZA**
Memphis, Tenn., 55 entries.
Barry Davis of Olive Branch, Miss.,
won best of show.

April 16, 1994
**QUEEN OF BEER WOMEN ONLY
HOMEBREW COMPETITION**
Placerville, Calif., 82 entries.
Anne Trowbridge of Denver, Colo.,
won best of show.

April 17, 1994
**FOURTH ANNUAL DOCK
STREET HOMEBREWING
COMPETITION**
Philadelphia, Pa., 116 entries.
Dean McNulty of Philadelphia,
Pa., won best of show.

April 23, 1994
**BIDAL SOCIETY OF KENOSHA —
EIGHTH REGIONAL**
Kenosha, Wis., 193 entries.
Steve Dempsey of Fort Collins,
Colo., won best of show.

April 23, 1994
CRESCENT CITY COMPETITION
New Orleans, La., 242 entries.
David Pappas of Orlando, Fla.,
won best of show.

April 23, 1994
DUKES OF ALE'S SPRING THING
Albuquerque, N.M., 135 entries.
George Fix of Arlington, Texas,
won best of show.

April 24, 1994
**EIGHTH ANNUAL GEM STATE
HOMEBREWERS' COMPETITION**
Boise, Idaho, 81 entries.
Lee Otterness of Boise, Idaho,
won best of show.

April 24, 1994
**EVANSTON FIRST
HOMEBREW CHALLENGE**
Evanston, Ill., 94 entries.
Dan Kasen of Chicago, Ill.,
won best of show.

April 30, 1994
**NATION'S CAPITAL "SPIRIT
OF FREE BEER" HOMEBREW
COMPETITION**
Washington, D.C., 243 entries.
Fred Hardy of Fairfax, Va.,
won best of show.

April 30, 1994
U.S. OPEN
Charlotte, N.C., 107 entries.
Mark Bailey of Charlotte, N.C.,
won best of show.

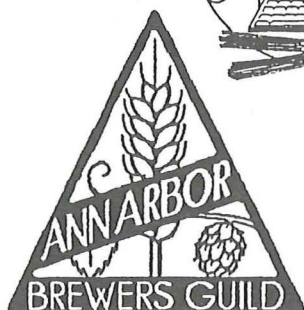
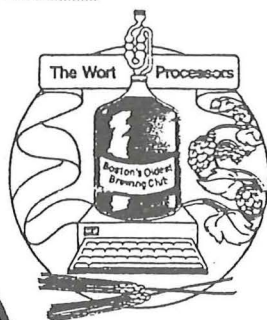
May 7, 1994
MALTOSE FALCON'S MAYFAIR
Woodland Hills, Calif.,
172 entries.
Markus Bruetsch of Thousand
Oaks, Calif., won best of show.

May 14, 1994
**MADISON HOMEBREWERS'
EIGHTH ANNUAL BIG AND
HUGE '94**
Madison, Wis., 45 entries.
Hugh Miller of Oshkosh, Wis.,
won best of show.

May 14, 1994
**"TRASH IV" FOURTH
HOMEBREW COMPETITION**
Pittsburgh, Pa., 175 entries.
Larry and Jan Steinmetz of
Pittsburgh, Pa., won best of show.

May 21, 1994
**JAMES PAGE OPEN
INVITATIONAL**
Minneapolis, Minn., 188 entries.
Jim Ellingson of St. Paul, Minn.,
won best of show.

May 21, 1994
**PRAIRIE HOMEBREWING
COMPETITION MEMBER-STYLE
CHALLENGE**
Fargo, N.D., 35 entries.
Jim Gebhardt of Fargo, N.D.,
won best of show.



MASH

- Make your club family oriented and design meetings with families in mind. Organize community and family oriented events.
- Organize and participate in homebrew competitions.
- Work with, not against, your local homebrew shop owner and have respect for his or her business interests.
- Work with local breweries for meeting places and beer donations.
- Reward volunteers. For obtaining that hard-to-get volunteer spirit, the Chicago Beer Society offers "three-dollar bills" to their hard-working members that can be used to "purchase" club products.

The bottom line: Have fun with your homebrew club and make it fun for others in whatever way you can.

AHA CLUB-ONLY COMPETITION 1995 SCHEDULE

- Beer styles for these competitions correspond to the categories listed in the AHA 1995 National Homebrew Competition Rules and Regulations, available in this issue.
- Dates given are the entry deadlines. Judging by the indicated homebrew club occurs within two weeks of these dates.
- Information, including entry forms and shipping addresses for each competition, is sent to every AHA Registered Homebrew Club after the completion of the previous competition. Please check with your club liaison for this information.
- Only one entry per homebrew club is allowed.
- If you have any questions, contact James Spence at (303) 447-0816, Ext. 121, or CompuServe 70740,1140.

HAIL TO ALE

*English Pale Ale and
American-style Ale*
Central Florida Homebrewers, Florida
Jan. 23, 1995

WEISS IS NICE

German Wheat Beer
American Homebrewers Association,
Colorado
Aug. 14, 1995

BOCK IS BEST

Bock
Brew Free or Die, New Hampshire
March 20, 1995

BEST OF FEST

Vienna/Oktobertfest/Märzen
Club Wort, Illinois
Oct. 23, 1995

RAUCHBIER ROUNDUP

Smoked Beer
Ithaca Brewers Union, New York
May 22, 1995

RENOWNED BROWN

Brown Ale
Prairie Homebrewing Companions,
North Dakota
Dec. 4, 1995

STOUT BOUT CLUB-ONLY COMPETITION WINNERS

★ *First Place*
Terry Boyles,
Riverside, Calif.,
of the Inland Empire Brewers

★ *Third Place*
Jeff Michalski,
St. Louis, Mo., of the St. Louis Brews

★ *Second Place*
David York,
Billings, Mont., of the MT Bocks Society

*The 69-entry competition
was organized by the Gold
Country Brewers Association
of California.*

The Conference Jambeery is popular for club members because they can showcase some of their finest club-brewed beers, and demonstrate the cooperation and high caliber of their club's membership. The Chicago Beer Society (CBS) offered attendees English-style ales from a traditional beer engine. CBS members arrived in Denver on the second annual "Crazy Train," an Amtrak car they obtained for the trip from Chicago. Accompanying them were more than 30 Cornelius kegs of beer and mead! The Ann Arbor Brewers Guild's Dan McConnell and Ken Schramm became instantly popular by offering samples of their extraordinary meads. Afterwards, hospitality suites sponsored by local Denver-area clubs were available for additional brews and relaxation.

The ultimate in club prowess? The Sonoma Beerocrats, for the ninth consecutive year, won the Homebrew Club of the Year trophy. For years the Beerocrats have run what could almost be described as a homebrewing school — educating their members in all aspects of making excellent beer. The diligence and membership support of the club has paid off in a record number of National Homebrew Competition awards. In fact, three Beerocrats, Michael Byers, Byron Burch and Martin Stokes, won the Ninkasi Award, Meadmaker of the Year and Cidermaker of the Year, respectively, this year — three of the top five awards in the Competition. Several Beerocrat brewers have moved to professional brewing careers.

The ultimate in longevity? The Maltose Falcons celebrated 20 years of great homebrewing in 1994.

Above all, the Conference demonstrated the importance homebrew clubs can

have in the brewing life of a homebrewer and offered clubs an opportunity to network with other clubs and learn what goes on outside of what, for some clubs, is a small circle of homebrewers. The available learning experiences, the camaraderie, the good beer and the sheer comfort of knowing you can talk, in detail, to your fellow members about beer without being chided or laughed at, is what makes homebrew clubs fun and worthwhile to join.

The American Homebrewers Association counts homebrew clubs among its most valu-

able information source and believes that AHA Registered Homebrew Clubs offer the most complete and valuable homebrew network around. With more than 450 homebrew clubs registered worldwide, the possibilities for international correspondence and intercultural exchange are almost limitless. Should you have any suggestions for what the AHA can do for your club, or if you would like a complimentary list of clubs worldwide, please don't hesitate to contact us. We'll do our best to make your homebrew dreams come true.



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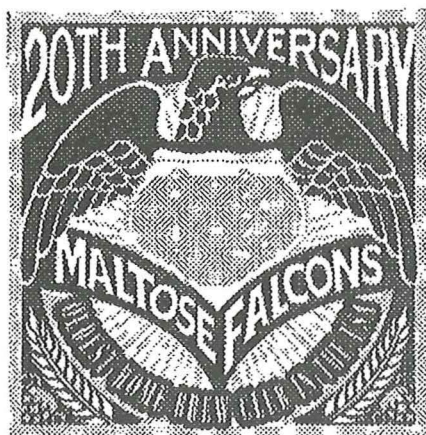
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The Fermenters, *c/o O'Shea Brewing Co.*, 27324 Camino Capistrano Unit 114, Laguna Niguel, CA 92677; (714) 582-BREW.

Marin Home Brewers Club, *c/o Scott McMartin*, 1809 Larkspur Landing Circle, Larkspur, CA 94939; (415) 332-8804.

Santa Barbara County Home Brewers Association, *c/o Kyle Carrell*, PO Box 597, Los Olivos, CA 93441-0597; (805) 686-0730, CIS 73160,1441.

Society of Barley Engineers, *c/o Andy Game-line*, 1218 Melrose Way, Vista, CA 92083.

HAWAII

Hawaiian Homebrewers Association, PO Box 852, Hauula, HI 96717, (808) 293-2229.

ILLINOIS

Urban Knaves of Grain (UKG), *c/o Mike Montgomery*, 13446 Golden Meadow Dr., Plainfield, IL 60544; (815) 439-2149, m1m01@intgpl.ih.att.com.

INDIANA

Wabash Valley Vintners' & Homebrewers' Club, *c/o Neil Flatter*, 913 7th Ave., Terre Haute, IN 47807-1109; (812) 235-2682, Neil.Flatter-@Rose-Hulman.Edu.

KANSAS

Little Apple Brew Crew, *c/o Brent L. Benkelman*, 3202 Willowpond Lane, Manhattan, KS 66502; (913) 539-4762.

Krausen Boys, *c/o Patrick Lehnher*, 6915 Millridge Rd., Shawnee, KS 66218; (913) 441-0353.

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South Shore Brew Club, *c/o Randy Reed*, 32 Copperwood Dr., Stoughton, MA 02072; (617) 341-8170.

NEBRASKA

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WASHINGTON

The Northern Brewers BEEWBC, *c/o Bob Maphet*, PO Box 3707, Seattle, WA mail stop OF-KA 98124; (206) 266-9681.

WISCONSIN

Milwaukee Beer Society, *c/o Michael D. Ratkowski*, 14835 W. Lisbon Rd., Brookfield, WI 53005-1510; (414) 783-5233.

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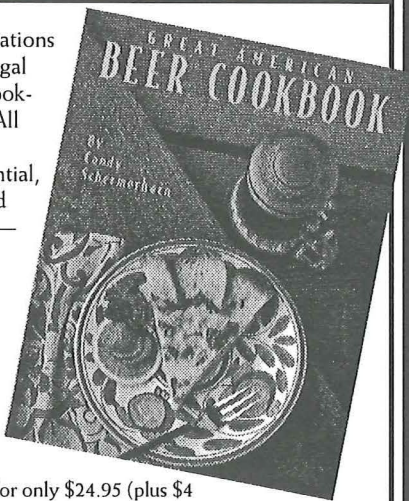
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CLUB-ONLY COMPETITION

1995 Club-Only Competition Schedule

sponsored by the American Homebrewers Association

Hail to Ale

Entry Deadline Jan. 23, 1995
Organized by the *Central Florida Homebrewers*

Bock is Best

Entry Deadline March 20, 1995
Organized by *Brew Free or Die*

Rauchbier Roundup

Entry Deadline May 22, 1995
Organized by the *Ithaca Brewers Union*

Weiss is Nice

Entry Deadline Aug. 14, 1995
Organized by the *American Homebrewers Association*

Best of Fest

Entry Deadline Oct. 23, 1995
Organized by *Club Wort*

Renowned Brown

Entry Deadline Dec. 4, 1995
Organized by the *Prairie Homebrewing Companions*

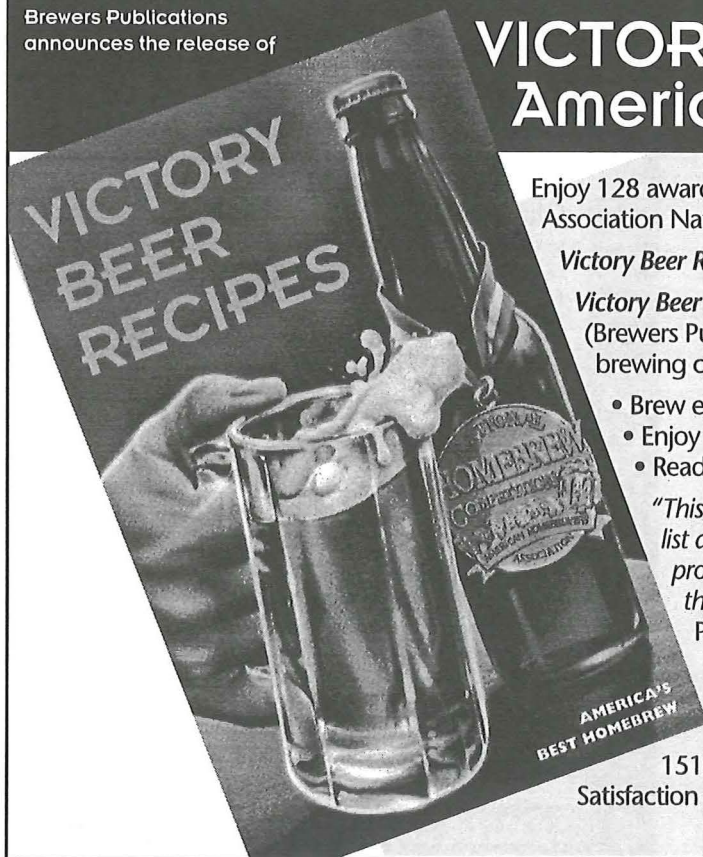
Watch for Club-Only Competition ads in upcoming issues of *zymurgy*. For more details contact the AHA at PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816, FAX (303) 447-2825.



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CLUB-ONLY COMPETITION

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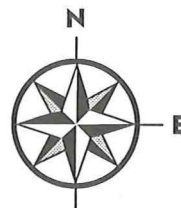
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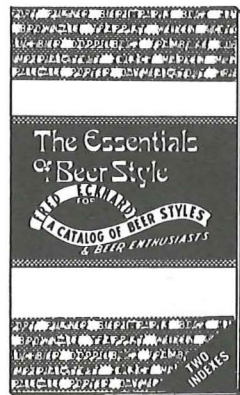
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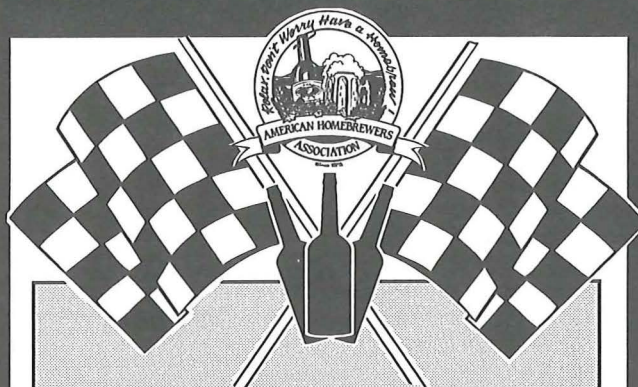
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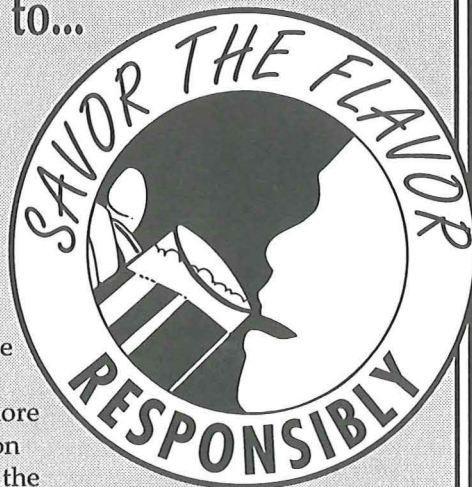


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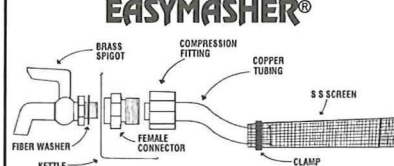
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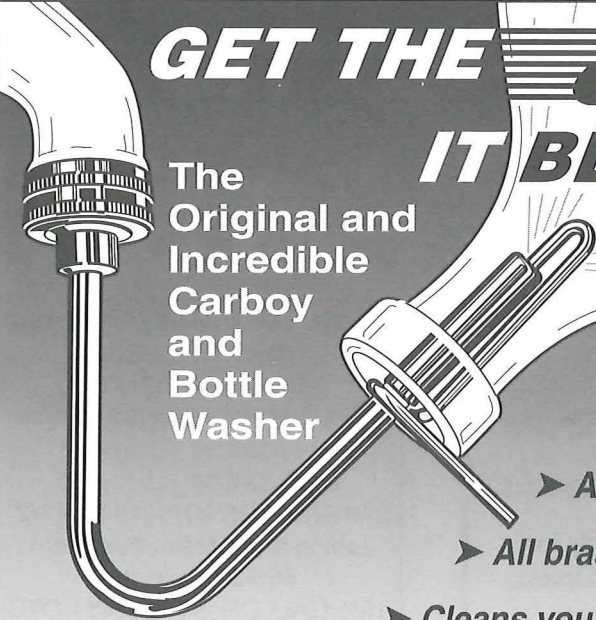
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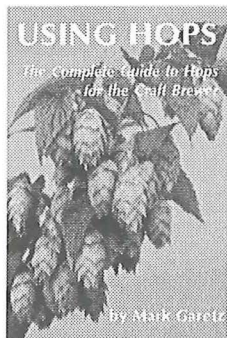
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LAST DROP

Nerds for the '90s

By Gerry Studzinski

I am a nerd. If you're reading this, it's a safe bet you are too. Don't be offended; I mean it in a good way. Getting in touch with your inner nerdiness is healthy, and the sooner you do so, the sooner you'll become a complete brewer. My wife helped me realize my nerdiness through a chance conversation about a homebrewer of some repute. "He really is kind of nerdy, though," I mentioned.

"Well ..." Kim said gently, as if getting ready to break some bad news.

"You mean," I gasped, "you think homebrewing is a nerdy hobby?"

"Well, yeah, I mean, come on," said Kim, getting straight to the point as usual. The implication became obvious, even to me.

"Does that make me a nerd?"

Kim hesitated for a full 10th of a second. "Sure."

For some reason, I wasn't stunned. Deep down I knew she was right. The more I thought about it, the clearer it became: to be a homebrewer is to be a nerd. Now, when I say nerd, I don't necessarily mean the classic pocket-protector-wearing dweeb with his pants cinched tight in the middle of his rib cage, although I wouldn't exclude him, either. No, we homebrewers are nerds for the '90s. Regular people can't tell just by looking at us. It's only when we start talking about our favorite subject that our "differentness" becomes apparent. But nerds we are. Consider the following.

(1) Homebrewers are tinkerers. Homebrewers are that special breed of (usually) male who can't leave well enough alone. We have that obnoxious "do-it-yourself" attitude, the desire to take things apart to see how they work, and see if we can put them back together and make them work better, when we really know we can't. If I had a nickel for every batch of beer I screwed up with some stupid inspiration, I'd own a microbrewery. And we never run out of ideas. For proof, just look at *zymurgy* 1992 Special Issue "Gadgets and Equipment" (Vol. 15, No. 4). Or any issue of *zymurgy* for that matter. Enough said.

(2) Homebrewers like computers. OK, OK, I know all you computer nerds out there are thinking, "Hey, you can't avoid using them, they're a part of life today, blah blah blah." And you're right. I don't even own a home computer (yet), and even I know that homebrewers have heated debates on CompuServe and other forums about life or death brewing issues. And I'm always seeing articles about keeping computerized brewing records, or automated mash sequences and so forth, as if the key to getting that traditional, old-time flavor is to have the latest state-of-the-art brewing program.

(3) Homebrewers are bores. At least when we start talking about beer. Be honest, when people learn you are a homebrewer and ask

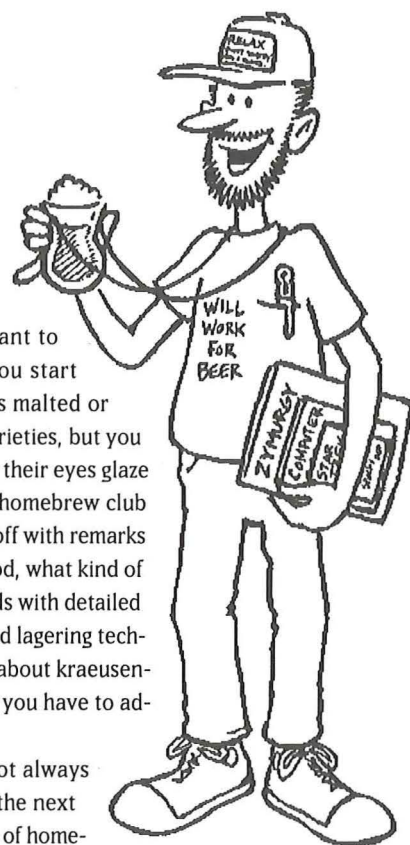
you how beer is made, you tell them, don't you? They don't really want to know, especially when you start telling them how barley is malted or about the different hop varieties, but you just keep going even when their eyes glaze over. Listen to the talk at homebrew club meetings. It usually starts off with remarks like, "Hey, that's pretty good, what kind of hops did you use?" and ends with detailed descriptions of mashing and lagering techniques and people talking about kraeusening. Looked at objectively, you have to admit this is weird behavior.

(4) Homebrewers do not always dress well. Take a gander the next time you're around a group of homebrewers. Based on scientific observation, I can confidently state that the height of fashion at our club is a T-shirt — preferably clean — with the name of some beer or brewery on it and a pair of blue jeans. Look out Paris and Milan!

(5) Homebrewers like "Star Trek." Which is better, the old "Star Trek" or "Star Trek: The Next Generation"? If you've spent any amount of time considering this question, you are most definitely nerdy. I'm the first to admit I watch them both, plus "Deep Space Nine" (and "Dr. Who" when it was on). I've even got a batch of Romulan Ale cooking, and I'll bet a photon torpedo I'm not the only one.

I could go on and mention that the beer newspaper *Barleycorn* has a column called "Ask the Beer Geek" and point out the goofy names homebrewers give their beers in attempts at humor, but I think I've made my point. We are all a bunch of nerds, and it's *all right*. We have something to show for our affliction, while everyone else is gulping down whatever new joke Bud C. Miller is playing on the American public. Good! More for us.

Gerry Studzinski is a staff attorney for Central Pennsylvania Legal Services in York, Pa. His first foray into brewing, in 1983, a horrible table sugar and dried yeast abomination, was so bad he didn't brew again until 1987. Gerry is a founding member of the soon-to-be-feared South-Central PA Zymurgists Association. "Despite the nerd thing, it goes without saying I am the epitome of cool," Gerry says.





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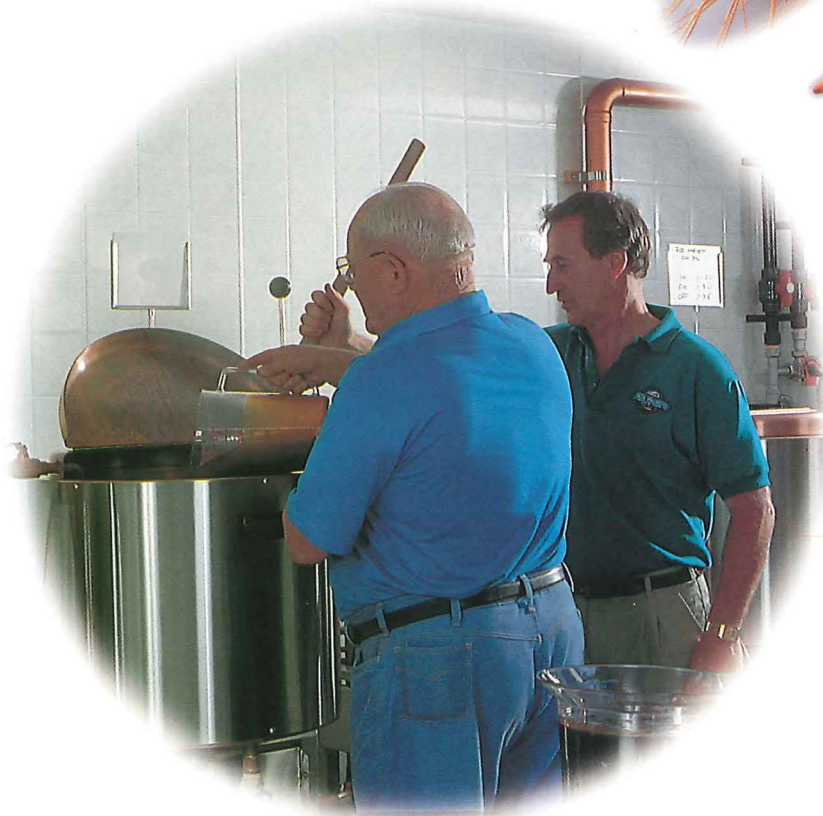
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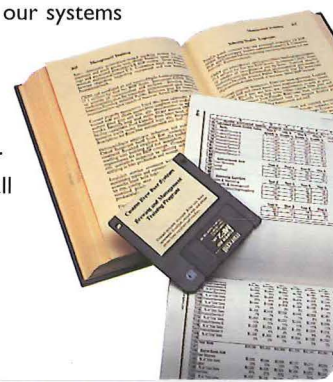
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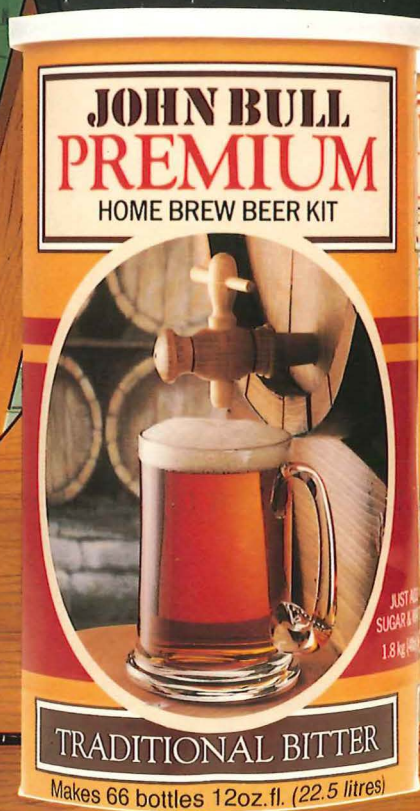
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