

Vol. 23 No. 6 November/December 2000 Published by the American Homebrewers Association

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

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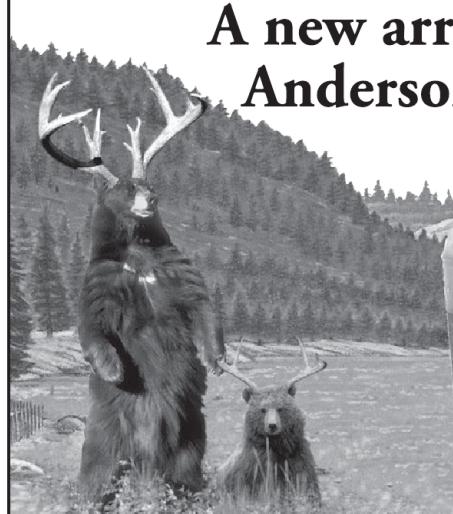
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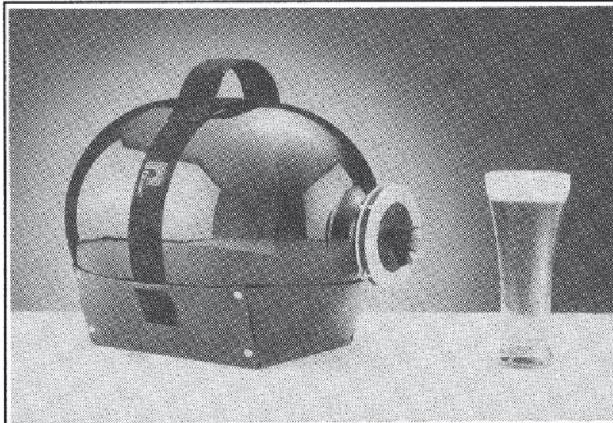
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BY PAUL GATZA

# Teach a Friend to Homebrew Day

**I**t is time again for Teach a Friend to Homebrew Day. This is our second year in promoting the hobby with this project in association with the Home Wine and Beer Trade Association (HWBTA), which represents the business side of the hobby. The American Homebrewers Association continues to develop our relationship with HWBTA on this project because bringing in new brewers benefits all homebrewers and all who are in the supporting businesses of homebrewing. On November 4th, I urge all members of the American Homebrewers Association to help turn potential homebrewers into homebrewers. When new brewers come into the hobby, they bring with them the wide eyes of discovery. New brewers provide a passion for the hobby that spreads throughout the community, help homebrew supply shops maintain fresh supplies, and keep manufacturing and wholesaling companies in our industry vibrant.

New brewers are also vital to the health of many clubs. As long-term brewers sometimes drift out of the hobby for a year or two or occasionally forever, we need new brewers to reinvigorate the beer community. We also need current brewers to provide the invitation to the new brewers to come along on our cultural beer journey.

I recently met Dan and Anne Hakes of the Strand Brewers Club (SBC). Dan fears for his club's long-term survival because the shop that had made a primary association with the club did not make it and SBC has lost its major funnel of potential new members. The other shops in the area already have a club they regularly affiliate with, and an affiliation with SBC is secondary. I have seen similar events in other parts of the country. It may lead to some tough times for SBC, and the current members will have to create homebrewers and find new members whenever and wherever they can.

PHOTO BY BOB GOLDMAN



I learned about homebrewing through word of mouth and relied on the expertise of George and Nancy at Home Sweet Homebrew to answer questions and steer me to sources for more information. I recall my first batch of homebrew made with a John Bull English Ale hopped malt extract kit. At each step of the process I read every word of the instructions carefully, but was still a bit unsure on a couple of items. I would have felt more confident had I had a friend with experience to show me the ropes. It definitely would have sped up the process. Fortunately batch No. 1 of Red Bag Ale was successful. Although I have not seen the English Ale kit available for some years, I believe the recipe was something like:

## Red Bag Ale

- 5 gal. Malvern Tap Water
- 3.3 lb John Bull English Ale Hopped Malt Extract
- 2 lb Northwest Light Dried Malt Extract
- 1 oz U.K. East Kent Goldings Hop Pellets
- 11.5 grams Edme Dried Yeast

I remember thinking after the brewing, "hey, this is easy!" I started batch number

2 before I had a chance to sample Red Bag Ale. The passion was there. My brother Ward started brewing about the same time. On our first batch together I learned from him and he learned from me, and we had a whole lot more fun brewing together than brewing alone and could discuss our techniques. Brewing with Ward set me on the path to making award-winning beers. I think about what could have happened. I imagine that I may have dropped the hobby had the first batches turned out bad. Had an experienced homebrewer been there I would have made fewer mistakes and been more likely to look for an explanation as to what went wrong, and I would have given homebrewing another chance.

## How Teach a Friend to Homebrew Day Works

The idea behind Teach a Friend to Homebrew Day is simple. I ask each AHA member to invite one or more potential homebrewers and AHA members to accompany you to your local shop, introduce the new brewer to the shop and shopkeeper, select a beginner's batch of ingredients, and brew on November 4th. Please keep the recipe and process as simple as possible, which will allow the new brewer to focus on the ease of brewing and the fun social aspects. A sample of a previous batch of yours may help in that process.

## Registration and Membership

I also ask that each brewer discuss the importance of the new brewer becoming an AHA member. As we increase membership in the American Homebrewers Association, we are able to do more coordination with member volunteers to promote the hobby of homebrewing to the non-brewing public and run programs for homebrewers. New brewers can sign up as AHA members

(and get a free vial of yeast) through the [www.beertown.org](http://www.beertown.org) website and you can register your participation in this event to allow us to make as big a media splash as possible. Teach a Friend to Homebrew Day is sponsored by White Labs.

### New Looks in Zymurgy

The American Homebrewers Association represents all levels of homebrewers—from those who have never brewed to those interested in the most technical scientific nuances in search of the perfect beer. *Zymurgy* editor Ray Daniels has simplified our approach by creating a new section, titled *For Geeks*.

 Only, toward the end of the magazine so those interested in the most technical aspects of the hobby have an area dedicated to their needs, without making the hobby seem too technical and inaccessible for the potential or beginning brewer.

We also have the return of several malt extract advertisers to the pages of *Zymurgy*. In a project spearheaded by Association of

### New brewers can sign up as AHA members through the [www.beertown.org](http://www.beertown.org) website.

Brewers advertising manager Julia Herz and Fred Czuba of Steinbart Wholesale, Cascadia, Brewferm, John Bull, Morgan's and Munton's have all returned as advertisers and AHA has reaffirmed its commitment to the needs of all brewers. Even experienced brewers should consider the time savings, ease of use and high quality of malt extract kits throughout their brewing year and not just on Teach a Friend to Homebrew Day. I have personally tried products from each of these companies and my friends have smiled at the results. My average yearly brewing cycle the last few years has included about 5 meads, 6 all-grain batches, a couple intermediate beers and 6 malt extract kit batches. I vary my brewing based on time available for brewing, who I am brewing with and quantities needed to satisfy guests.

I sat down for a beer with Mark Henry of Cascadia Imports, the agent for Cooper's malt extracts in the United States. Mark

pointed out that we had slipped away from naming the brands of malt extracts in our recipes. We almost always name the yeast source, so why not the brand of malt? I agreed with Mark that we should do more specific brand-naming in the recipes we print in *Zymurgy*. Back in my supply shop days, I recall many times when someone would ask for a specific brand of extract because a recipe stated a brand that resulted in a great beer. Since most of our recipes come from our members and competition winners, I ask that each of you be as specific as possible for water, malt, hop, yeast and other ingredient sources when filling out entry/recipe forms for competitions such as the club-only competitions and the AHA National Homebrew Competition.

### 2001 Homebrew Conference

The Conference Committee of the American Homebrewers Association Board of Advisors is pleased to announce that the 2001 AHA National Homebrewers Conference will be held in Los Angeles, California from June 21 to 23, 2001. The conference will be led by members of the many homebrew clubs in the Southern California area, including the 300-member Maltose Falcons and the Quality Ale and Fermentation Fraternity (QUAFF). The clubs in Southern California are already networked through past work on the Southern California Homebrewers Festival, which draws over 1000 SoCal homebrewers to a campout on National Homebrew Day weekend. The host hotel will be the Four Points Sheraton at LAX. The hotel has free shuttle service from the airport, a car rental office, a general manager who is a beer enthusiast and homebrewer and a hotel bar with Chimay artwork and an excellent selection of flavorful beers. The setting should be perfect for our beer odyssey.

That's it for now. Next issue will have information on the 2001 AHA National Homebrew Competition, Big Brew 2001/National Homebrew Day and more on the conference. Happy brewing all.

Homebrewer and former homebrew shop owner Paul Gatzka is the director of the AHA. 

Our e-tail site is now online!

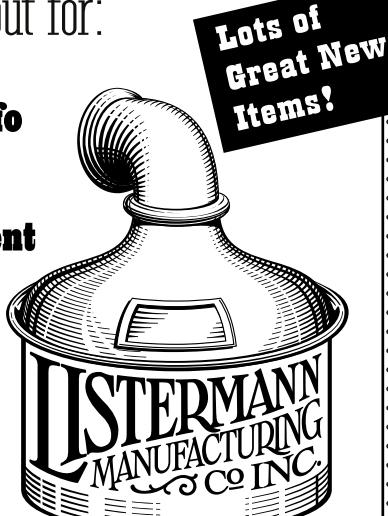
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### A Beer Called "You Wouldn't Print It Anyway"

Dear *Zymurgy*,

After receiving the *Zymurgy* Special Issue last year, I penned a letter to the AHA inquiring why [my silver medal-winning] stout had not been printed (mentioned). Since my correspondence was ignored, I assumed it was due to the name of the beer, "Sofa King Stout." After reading the profanity in the last issue, I felt that was not the case. This year I figured, 'what's the point in naming my beer when it doesn't get mentioned anyway.' I put, "You Wouldn't Print It Anyway" for the name of the beer on all my entries. Ironically the name, not style, was printed on 40 odd certificates I received. Four placements last year. Six issues later and not one mention. As a fellow brewer pointed out, no, I don't brew to see my name in print, but it would have been nice. What membership support?

Curt Hausam  
Salem, OR

Dear Curt,

*Not all bronze and silver medal recipes are printed. It is simply a matter of space, though we wish we could. Half of these recipes are selected at random for printing—our only criterion is that there is generally an even mix of bronze and silver winners. So if you are a bronze or silver medalist and your recipe doesn't find its way into the magazine, it isn't because the name of the beer was too racy or you failed to specify the Lovibond rating on your crystal malt. It was just the luck of the draw.*

Editor

### Cool Ideas

Dear *Zymurgy*,

I too live in the hot climate and was glad



to see Dean Fikar's article about tricks to beat the heat. During at least eight months of the year here in central Florida the tap water is too warm to chill the wort sufficiently. This is true even though I use the Hearts counter current chiller that was rated the best chiller by *Zymurgy*. (Spring 1996)

I agree with Dean that an additional chiller is needed. However, I have had better luck with a post-chill instead of a pre-chiller. Specifically, after the Hearts chiller, my wort goes through about 20 feet of 3/8" copper coil that has been immersed in a salted ice bath. Adding simple table salt to the solution lowers the ice bath enough to get the wort down to even lager pitching temperatures with no problem.

As for fermenting, I do this on my back porch, which is not air-conditioned. I beat the sometimes 100+ heat by utilizing a 52-quart cooler that can fit two carboys. I fashioned a top out of insulation board and duct tape. Then I fill the space around the carboy(s) with water. An aquarium pump is used to circulate the water through 20 feet of copper tubing that is located in a dorm size refrigerator and back into the cooler. A temperature controller is used to turn on the pump when the water temp exceeds the set point.

With this arrangement I can keep ale in the 60s (15-20° C) even though the temperature on my back porch may exceed 100° F (37.8° C). In addition, the temperature fluctuation is usually less than plus or minus one degree from the set point.

Drink Better Beer,  
Ed Measom  
Orlando, FL

Dear Ed:

*Cool idea! No really, we appreciate your thoughts on beatin' the heat. The history of brewing has certainly demonstrated that there are very many different ways to approach each aspect of the brewing process. I'm sure that many of our readers will find your comments to be a valuable addition to Dean Fikar's fine work in the July/August 2000 issue.*

Editor

### Escaping Gravity

There once was a fellow named Brix.  
A puzzling problem he'd fix,  
He found how to measure  
The possible pleasure,  
From sugar in worts that he'd mix.

Cheers,  
Jim Capecchi  
Big Horn Brewing

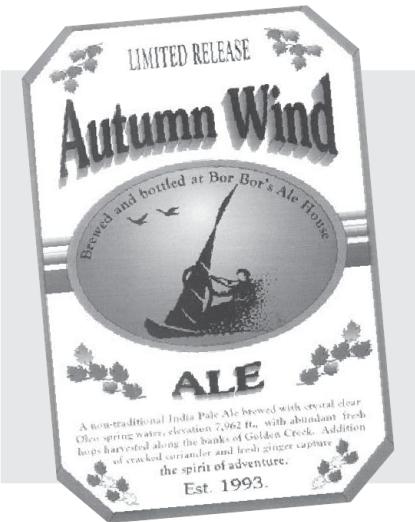
*The above arrived via e-mail — no question, just a bit of sharing among wordsmiths. We thought a few of you out there might appreciate it as well.*

Editor

### Rogin Beer

Dear Editor:

I am inquiring about your knowledge of Rogin beer? I was guessing smoke, but don't



really have a clue. Any thing you know about this would be news to me.

Best regards,  
Dave from Oregon

Dear Dave:

*Robin Beer is a German specialty product that is basically a weizen where rye malt is used instead of wheat malt. This means that the grist*

*is one-third pilsener malt and two-thirds rye malt. Pretty interesting and a big challenge to make due to stickiness of rye. We understand that the German brewer uses a CO<sub>2</sub> pressurized lauter tun to help push the wort out of the grain bed, but homebrewers would be better advised to throw in a large handful of rinsed rice hulls. Standard Weizen yeast would be recommended on the fermentation side.*

Editor

Dear Editor:

Greetings and salutations from Nova Scotia. I belong to a brew club here in Halifax, Nova Scotia—and yes that's in Canada—by the name of Brewnosers so named after our famous sailing schooner the Bluenose [it's also on our dime]. Anyways we are hosting this September the 2000 All About Ales Homebrew Competition, and it turns out that I must search outside my normal realms for brewing and brew competition information. I have to query out of my local sphere only, and I say only, so that I don't tip my hand as to my intended beer

style entry or effect any impartiality either unintended or implied as we have some national judges and both some recognized and apprenticed and we are all good friends.

I brewed a GREAT Rye Beer from a recipe found in [a magazine] with the only change being the use of the Wyeast American Wheat yeast strain. I wish to enter this beer in our competition in September but seem to be somewhat stonewalled or call it confounded in where or under what style category to enter it in. Can you help me correctly find the style that fits?

A Hearty Thank You In Advance  
Greig M. McKellar  
Brewnosers  
Halifax Nova Scotia

Dear Greig:

*In our experience, rye beers often go into the "specialty/experimental" category unless there is another category specifically designated for rye beers.*

Editor



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BY RAY DANIELS

# Bringing Zymurgy Up to Scratch

I made a batch of chocolate chip cookies with my kids the other day. Or at least I think I did. Some folks wouldn't agree.

First I turned on the oven and pulled out the non-stick cookie sheet. Then I opened the refrigerator and took out the package of dough—the kind that is already formed into a thick slab and pre-cut into one inch squares. I broke off a strip of four squares and handed it to my son, then grabbed another strip for my daughter and a third for myself. We each broke the four squares apart and placed them on the cookie sheet in that sort of haphazard pattern that can only be achieved through the efforts of an aging beer geek, a rabid Brittany Spears fan and a six-year old who wants to emulate Tiger Woods.

When the oven was hot, I put the cookie sheet in and set a timer for the minimum cook time. The kids fidgeted in anticipation, and as the timer counted down we began to inspect the nearly-done cookies and debate whether they needed a few more minutes to achieve the desired balance between crispy and soft.

When I finally agreed to release the cookies from the oven, we descended on them with glee. As we ate them, there could be little doubt: compared to any bag or box of cookies that we might have brought home from the store, those fresh-baked morsels were delightful and rewarding.

Now purists would argue that we didn't make cookies. To *really* make cookies you have to sift flour, measure sugar, sprinkle chocolate chips into the recently assembled dough and then spoon it out onto the cookie tray in sticky little globs. If you don't do these things, they would say, you can't control the character of the finished product, the cookies won't be nearly as good and the making won't be as rewarding. I can hear them now, clucking their tongues and lamenting, "No one who makes cookies that way is really a cookie maker!"



Kind of sounds like some all-grain brewers you know, doesn't it? They'll tsk-tsk at extract brewing the way that bakers shake their heads at my kind of cookies. They'll preach long about the benefits of all-grain brewing and profess a perception of impurity in any extract-inclusive brew. Many will dismiss any extract-containing beer as a damnable bastard regardless of its character. Indeed, they sniff at any beer-child not born in stainless steel and not bred of home-crushed grains.

But in the cookie world, I'm an extract brewer. I do it the no-muss, no-fuss way. And I'll tell you, the cookies that I make taste really good—better than any I could buy at the grocery store. And best of all, making them takes no time at all. When I'm done, it takes about 30 seconds to clean up. On the average evening when I'm done making cookies, I still have time to catch a movie on cable or peruse an old brewing book from the 19<sup>th</sup> century. In short, I find the process and the products of "not making cookies" to be very rewarding just as most extract brewers find the process and products of their beer making to be wonderful recompense for the work involved.

And you know what? My method of not making cookies shares a lot in common with

those who do it the old fashioned way. My kids and I love watching the transformation that takes place during cooking—the slow melting of the initial blobs into flat round puddles of molten dough. Over the years, we've developed a certain expertise in determining the final consistency of the finished cookies based on what they look like the minute the timer goes off. And of course, like "real" cookie makers, we burn a batch every now and then.

Obviously, the same can be said of beer makers. Extract brewers still fret over fermentations, still hanker for hoppiness, still dread the drinking of the last bottle of a special batch. And like all-grainers, they dump a batch down the drain from time to time.

Yet despite this common ground, many all-grainers still dismiss and even denigrate the use of extract in homebrewing. And that's pretty stupid.

Extract brewing—and extract beers—hold a critical place in homebrewing. They are the entry point for virtually everyone. And frankly, for most folks extract is the only brewing method they will ever practice. It is easy. It is quick. And when evaluated by even the most discriminating palates, the simplest extract kits can make good beer. (If you doubt this, see my article in this issue on extract beer evaluations.)

Now I'm not trying to take anything away from the all-grainers either. I love all-grain brewing. Like most adherents, I revel in the technical details. I tinker with equipment. I fuss over grain specifications. And because of the time it takes, I don't get to brew but about three or four times a year lately. (Blame it on the job!)

So what's my point here? Simply this: homebrewing is a hobby and there has to be room in it for people at both ends of this extract-grain spectrum as well as all points in between. One thing that we all have to

realize is that the sustenance and survival of our hobby—and yes, this magazine—depend upon this sort of inclusiveness.

Until about 18 months ago, there was a great magazine called *Brewing Techniques* (*BT*). It was dedicated to serious all-grain brewing and it ran lots of good stuff on the science of making good beer as well as informative articles on the history and culture of beer. Serious brewers hailed *BT* for the quality of its content but in the end, there simply weren't enough readers to draw the ad dollars required to keep the venture afloat financially.

Now mind you I read *BT*; I wrote for *BT*; I even advertised in *BT*. But it died for a reason. It died because it didn't cast a broad enough net into the world of homebrewing.

Personally, I wouldn't mind seeing *Zymurgy* look like *BT*, because when it comes right down to it, I'm a pretty geeky kind of homebrewer myself. But that isn't going to happen. I want *Zymurgy* to survive and, yes, even thrive well into the future. In order to do that, we have to cover interests common to a broad range of homebrewers.

So here's my plan for *Zymurgy*. To keep my fellow geeks happy, we're instituting a new section in this issue called "For Geeks Only." It will cover technical topics on brewing, homebrewing science and experimental data. In short, good old geeky stuff. This new section will be about the length of a good feature—four to six pages each issue. If you are not a geek, you can safely ignore it and make wonderful beer.

In the rest of the magazine, we'll continue doing what we have done during the last several issues, which is to cover topics which we deem to be of interest to the broad homebrewing population. This will include the topics of beer styles, history and culture that should appeal to brewers of all levels. And it will also include extract brewing, tips for beginners, how to build equipment, the fundamentals of fermentation, and other basics of brewing. Through this overall mix of content, we hope to serve all homebrewers in a way that will keep our hobby alive and healthy.

Now, one final word of advice for those who are deeply obsessed with brewing. I'm talking about the guys who have already read their copies of Noonan, Miller, Fix and maybe even Daniels (!) into dog-eared piles of pulp. We are going to try to keep things interesting for you on these pages—not, perhaps with every story, but with enough to keep your fire lit. In the meantime, if you find yourself bored, it is time to up the ante. It is time to realize that the vitality of what we are doing here depends on more than just reading, brewing and drinking. It is time to find new ways to get involved with the hobby. I urge you to study for the BJCP exam. I urge you to organize an event for your homebrew club. I urge you to write an article for your club newsletter. I urge you to teach a homebrew class. I urge you to contribute to the world of homebrewing in some new way.

OK. That takes care of the homebrewing world for this issue. Now I just wish that I could find a magazine that would teach me more about the history and culture of cookies without making me feel like an idiot because I don't bake from scratch. Anybody got any suggestions?

**Ray Daniels makes cookies the easy way and beer the hard way from his home in Chicago.**

## Go To THE TOP



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BY AMAHL TURCZYN

# Celebrator Doppelbock

**S**alvator, brewed by the Paulaner Brewery, was the original Bavarian version of this strong lager. It was first produced to nourish fasting monks during the forty days of Lent and the four weeks of Advent, but

## Celebrator Doppelbock Clone

### Recipe for 5 gallons (19 L)

#### Mini-mash method

2	lb German Pils malt (0.9 kg)
2	lb 20°L Munich malt (0.9 kg)
0.5	lb Cara-Munich malt (225 g)
5	oz chocolate malt (142 g)
6.6	lb amber malt extract (3 kg)
1	oz Perle pellet hops, 7% alpha acid (28 g) (90 min)
1	oz Hallertau pellet hops, 4% alpha acid (28 g) (45 min)
0.5	oz Hallertau pellet hops, 4% alpha acid (14 g) (30 min)
1	tsp Irish moss (4.9 mL)
	Bavarian lager yeast
0.75	cup cane sugar (180 mL), for priming

#### Brewer's specifics

Mash grains in 6 qt (5.7 L) 150° F (65° C) for 60 minutes. Strain out grains, rinse with 4 qt (3.8 L) 165° F (74° C) water, then top up wort with enough water to make 6.5 gallons (24.6 L). Add extract, and proceed with boil. After a two hour boil, whirlpool and rack off of break material, then chill to 41-50° F (5-10° C), and pitch.

- Boiling time: 120 minutes
- Original gravity: 1.080
- Finishing gravity: 1.020

**All-grain method:** Add 11 lb (5 kg) more Munich malt and omit the extract. Reduce Perle hops to .75 oz. Employ a step-infusion with rests at 150° F (65.5° C) for 1 hour, 156° F (69° C) for 20 minutes, and 167° F (75° C) for 10 minutes.

eventually came to be available publicly in the late 1700s. The Ayinger brewery produces their own version of doppelbock, called Celebrator. Merchant Du Vin, the beer's distributor, describes it as a "profoundly dark, rich elixir with a complex fruitiness of roasted malt and whole hop flowers." Celebrator has a rich, sweet malt intensity, which is more in keeping with the older styles of the beer. Originally, the finishing gravity of these beers was probably higher than it is today, as it was intended to provide nourishment, not alcohol. To keep the beer from being cloying, Ayinger uses a good dose of roasted malts in their doppelbock, resulting in a rich and distinctively malty, but still balanced, beer. Extended lagering also helps Celebrator develop its silky smoothness. It also displays a somewhat smoky note to the finish, again probably a result of the dark malts.

Melanoidins are the heart of bock beer. These compounds, formed from the combination of amino acids and simple sugars in malt, contribute color as well as a range of malt-related flavors and aromas in beer. Usually, such compounds would be formed by lengthy heating of the malts, either in the malting process itself, or in decoction mashing, or by conducting a lengthy boil (or any combination thereof). To develop these compounds in an authentic doppelbock, the usual German school of thought would rely on Munich malt mashed with a traditional double- or triple-decoction mash. Still, nice results can be



achieved by step-infusion of a Munich-malt based recipe. Furthermore, because of the way darker extracts are processed, brewers can avoid huge mashes and save a lot of time by using darker malt extracts as shown below.



Any good Bavarian or Munich lager yeast strain should be sufficient for this style. The standard reminders: After a long boil to ensure a good break, chill the clear wort to 41-50° F (5-10° C). Aerate well and pitch 1.5 to 2 times more yeast than normal (Those of you who count yeast cells should shoot for about 15-18 million cells/mL in the fermenter.) The extra amount of slurry is necessary for the higher-gravity wort if you want to get healthy fermentation and proper attenuation. Maintain a consistent lager temperature throughout fermentation. If you have never brewed a lager before, I would suggest doing some reading to fill in the many details I've recklessly glossed over before tackling a doppelbock. Recommended reading: The aforementioned *Bock* by Darryl Richman, and *Brewing Lager Beer* by Greg Noonan.

**Amahl Turczyn is the associate editor of Zymurgy magazine.**

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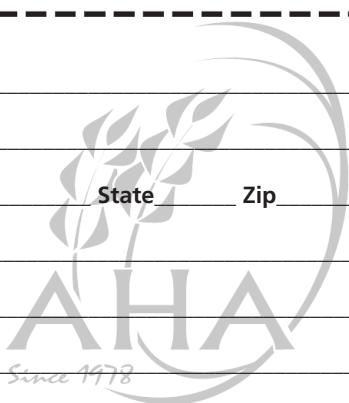
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BY AMAHL TURCZYN

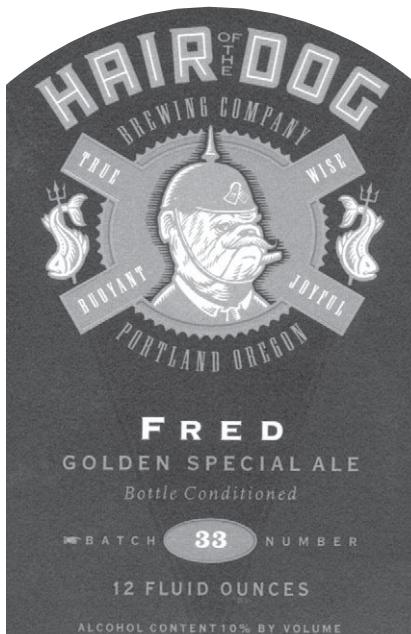
# How the Dutch say “Fred”

**A**lan Sprints, now sole brewer/owner of Hair of the Dog Brewing Company in Portland, OR spoke of a beer from Amsterdam as his favorite. From the brouwerij 'T Ij, (pronounced TUH-I), their strong ale Columbus (which some designate as being in the trippel style) is deceptively pale blonde in color, slightly tart, with a whopping 9% alcohol by volume. Sprints visited the Amsterdam brewery, which is located beneath a huge windmill. The windmill is equipped to mill grain, but apparently is seldom used.

Sprints was already making his own strong pale ale at Hair of the Dog when he visited, but found that the two beers definitely had some similarities. His own version he named “Fred” as it was inspired by the celebrated brewing icon Fred Eckhardt. Fred—the beer—is hoppier and even stronger than Columbus, Sprints admits, and definitely appeals to a select market. To date, it is only available in Portland, and runs over \$60.00 a case. It weighs in at 11.5% abv, and is produced in very limited quantities: 500 barrels (about 15,000 gallons) a year. Because of its strength, however, Fred—here again, the beer—can be kept in a closet for several years, and it will only get better. Fred’s creator was kind enough to share this amazing recipe, but you may have to partake in a brewery expansion to pull it off. While no specific alpha acids were given for the recipe, Sprints

**“With this many hops,  
alpha acid kinda goes out  
the window.”**

—Alan Sprints



did say that, “with this many hops, alpha acid kinda goes out the window.” Sounds like my kind of beer.

One final word of caution for bottle-conditioners—you aren’t going to have much luck without adding fresh yeast along with your priming sugar. Sprints himself uses fermenting beer to prime Fred, but this particular part of the process is a trade secret. So forced carbonation is probably the best way to go, if you have the means. If not, you might also try priming with sugar, then sprinkling a few grains of dry brewers yeast in each bottle before capping; though I’ve never tried this technique personally, many brewers who have, claim it works.

Amahl Turczyn is the associate editor of *Zymurgy* magazine.



## Fred

### Recipe for 5 US gallons (19 L)

25	lb Gambrinus 2-row malt (11.4 kg)	0.75	oz Styrian Golding hops, (4.5-6%) alpha acid (28 g) (10 min)
2.5	lb aromatic malt (1.1 kg)	0.75	oz Chinook hops, (11-14% alpha acid) (28 g) (10 min)
2	lb flaked rye (.9 kg)		Wyeast 1728 Scottish ale yeast
1.5	lb dark Belgian candi sugar (.7 kg)		Forced CO <sub>2</sub> to condition
0.75	oz Progress hops (5-7.5% alpha acid) (28 g) (FWH*)		
0.75	oz First Gold hops (6.5-8.5% alpha acid) (28 g) (FWH)		
0.75	oz Brewer's Gold hops (5.5-8% alpha acid) (28 g) (FWH)		
0.75	oz Liberty hops (3.5-5.5% alpha acid) (28 g) (FWH)		
0.75	oz Fuggles hops (3.5-5.5% alpha acid) (28 g) (30 min)		
0.75	oz Amarillo hops (28 g) (30 min)		
0.75	oz Northern Brewer hops (7.5-8.5% alpha acid) (28 g) (30 min)		
0.75	oz Crystal hops (3-3.5% alpha acid) (28 g) (10 min)		
0.75	oz Saaz hops, (3.5-5% alpha acid) (28 g) (10 min)		

\*FWH = First Wort Hopping—the hops are to be added to the wort as soon as it goes into the kettle and before it comes to a boil.

- Original gravity: 1.104
- Final gravity: 1.024
- Boiling time: 120 minutes
- Primary fermentation: 68° F (20° C) for ten days.
- Secondary fermentation: 45° F (7.2° C) for 2 weeks.

Mash grains at 154 to 156° F (68-69° C) for one hour; minimize sparge to maximize wort gravity. Boil one hour, add sugar and boil one additional hour.

# CALENDAR

AMERICAN HOMEBREWERS ASSOCIATION

## NOVEMBER

- 4** Best of Fest AHA Club-Only Competition, **AHA SCP**, Rochester, MN. Club entries due 10/16/00–10/31/00 with \$5 check made out to the AHA. Contact Leo Vitt at 507-253-6903, email: leojvitt@hotmail.com, www.beertown.org/AHA/clubcomp.htm.
- 4** Teach A Friend To Homebrew Day. For info, contact AHA Director Paul Gatz at 303-447-0816 x 121, paulg@aob.org.
- 4** 22nd Annual California State Homebrew Competition, San Francisco, CA. Entries due by 10/21/00. Contact Jack Dawson at 415-841-1433, jsdawson@pacbell.net, www.river.org/~mumbly/malts/.
- 4-5** Brews Brothers NOVEMBEER-FEST 2000, **AHA SCP**, Kent, WA. Entries due 9/18/00-10/27/00 with \$5 fee. Contact Rick Star at 425-821-9388 or 206-655-8485, we\_stars@msn.com, www.brewsbrothers.org/nbf\_top.htm.
- 4-18** The Derby Brew Club 7th Annual Homebrew Competition, **AHA SCP**, Derby, KS. Entries due 10/23/00-11/1/00 with \$6 for the first 6 entries, \$5 for each additional entry. Contact Kip Innes at 316-788-4787, kbinnies@aol.com, http://home.ks cable.com/derbyjones/dbc.
- 18-19** 5th Annual Homebrew Competition, **AHA SCP**, Lake Harmony, PA. Entries due 9/1/00-11/16/00 with \$5 entry fee. Contact Shelly Kalins at 570-722-9111 x 815, spevents@ptd.net, http://theresortatsplitrock.com.

## DECEMBER

- 2** Historical Beers AHA Club-Only Competition, **AHA SCP**, Oklahoma City, OK. Club entries due by 11/25/00 with \$5 check made out to the AHA. Contact Bob Rescinito at 405-720-9168, BobR5@prodigy.net, www.beertown.org/AHA/clubcomp.htm.

- 2** New England Fall Regional, **AHA SCP**, Deerfield, MA. Entries due by 11/24/00. Contact Jim Wallace at 413-625-2494, jwallace@crocker.com.

## JANUARY 2001

- 13-14** Spirit of Belgium 2001, A two-day educational event promoting brewing and enjoyment of Belgian and Belgian style beers. Includes Homebrew Contest (for info contact andy@burp.org) Featuring Michael Jackson, "The Beer Hunter" and Belgian Dinner Pairing Belgian-style Food and Beers. For more information please visit burp.org, or send email to sobinfo@burp.org
- 20** Big Bend Brew-Off 2001, **AHA SCP**, Tallahassee, FL. Entries due 1/2/01-1/12/01 with \$6 entry fee. Contact John Larsen at 850-422-3625 or 850-219-1310, jlarsen@nxus.com, www.nfbl.org.

- 28** Meadllennium 2001, **AHA SCP**, Orlando, FL. Entries due 1/9/01-1/23/01 with \$6 entry fee. Contact Ron Bach at 407-696-2738 or 407-897-288 x 104, mead@cfhb.org, www.cfhb.org/.

## FEBRUARY

- 15-16** Florida State Fair Homebrew Competition, **AHA SCP**, Tampa, FL. Entries due 1/1/01-2/5/01 with \$6 entry fee. Contact Ken Koenig at 813-961-1775 or 800-226-5627, ken.koenig@baycare.org, www.tampabaybeers.org.

- 16-17** 8th Annual Peach State Brewoff, **AHA SCP**, Atlanta, GA. Entries due 2/2/01-2/11/01 with \$7 each for 1-2 entries, \$5 each for 3 or more. Contact Marlon Hurst at 770-761-9448, mghurst@hotmail.com, www.coverthops.com/.

## AMERICAN HOMEBREWERS ASSOCIATION

### • KUDOS • SANCTIONED COMPETITION PROGRAM

#### • APRIL 2000 •

**Palm Beach Draughtsmen Hurricane Blowoff**  
West Palm Beach, FL, 191 entries—Wes and Nancy Sampson of Ocoee, FL won best of show.

#### • JUNE 2000 •

**Mill Creek Classic**  
Salem, OR, 172 entries—Tom Bentzien of Salem, OR won best of show.

**E'velle Tripple Threat**  
Ellicottville, NY, 75 entries—Gordon Diffenderfer won best of show.

#### • JULY 2000 •

**Ohio State Fair Homebrew Competition**  
Columbus, OH, 133 entries—Brian St. Clair of Cincinnati, OH won best of show.

**E.T. Barnette Homebrew Competition**  
Fox, AK, 58 entries—Bill Brooks and Jud Robinson of Kailua, HI won best of show.

**Yamhill County Fair**  
McMinnville, OR, 68 entries—Marc Hayden of Sherwood, OR won best of show.

#### • AUGUST 2000 •

**2000 Iowa State Fair**  
Des Moines, IA, 197 entries—Larry Sibernagel of Sioux City, IA won best of show.

**5th Annual Montgomery County Ag Fair Homebrew Competition**  
Gaithersburg, MD, 71 entries—George Humbert and Bill Lawrence won best of show.

**Kentucky State Fair**  
Louisville, KY, 95 entries—Conrad Selle of Louisville, KY won best of show.

**Wild Brew Two**  
Tulsa, OK, 172 entries—Tim Hamilton of Kansas City, KS won best of show.

**Benton Franklin County Fair**  
Kennewick, WA, 24 entries—John Rhodes of Kennewick, WA won best of show.

## AHA SCP = American Homebrewers Association Sanctioned Competition Program

The Calendar of Events is updated weekly and is available from the Association of Brewers: info@aob.org or www.beertown.org on the web.

To list events, send information to **Zymurgy** Calendar of Events. To be listed in the January/February Issue (Vol. 24, No. 1), information must be received by November 13, 2000. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months prior to the event. Contact Gary Glass at gary@aob.org; (303) 447-0816 ext. 121; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679.

BY PAUL GATZA

## Pacific Gravity Club

### Brew Days

I had the recent pleasure of joining the Pacific Gravity Homebrew Club for their most recent club brew day. Four times a year, Pacific Gravity (PG) brewers haul brew systems and friends to Culver City Homebrew Supply in California. On this particular Saturday, PG members set up one-, two- and three-tiered systems with and without pumps. An unofficial estimate was eight separate brews totaling 53 gallons. This total would be enough to fill each of the nine faucets on their beautiful new tap board with a painting of the Wave of Beer at a future event. (But first we would need to remove the homebrew currently regulated by each faucet.)

The chili cookoff was also a feature of this brew day. The crowd judged five chilis in categories whose only parameters were "best" and "hottest." Interestingly, each of the chilis received votes in both categories. Thanks to Craig Corley and Fred Waltman for hosting me that fine afternoon.

## SBC at the Stuffed Sandwich

From there it was off to the Stuffed Sandwich in San Gabriel, CA for dinner with members of the Strand Brewers Club. The Stuffed Sandwich has a jaw-dropping selection of beer. The beer menu has over 800 beers listed from 45 countries, although the owners Sam and Marlene Samaniego state they have over 1200 different beers onsite if you are having difficulty locating the beer you are looking for on the menu. A quick count of the Belgian ales on the menu yielded the number 141. Sam started collecting vintage beers in the early 80s. He has such a strong collection that some commercial brewers come to Sam when they need a taste of something from years passed.

## Best of Big Brew AHA Club-Only Competition

The American Homebrewers Association would like to thank Richard Truelove, Ray Kruse and the Cross Street Irregulars of Baltimore, MD for hosting the Best Of Big Brew Club-Only Competition on August 6th. This was the first of our annual cycle of six club-only competitions. Points are awarded on a six-three-one basis for the club-only competitions and the first and second rounds of the AHA National Homebrew Competition. The club whose members have amassed the most points over the year is crowned the Homebrew Club of the Year.

Thanks to the club representative brewers. There were 26 entries in the Best of Big Brew AHA Club-Only Competition.

### Congratulations to the following winners:

#### First Place

Mickey & Vi Walker and Jim Shulz of Fargo, North Dakota, representing the Prairie Homebrewing Companions with a 39.6 point average score. Mickey and Vi also paired up to win the AHA Homebrewer of the Year in 2000 with their NHC Best of Show Northern German Pilsner.

#### Second Place

Gary Shewchuk of Michigan, representing the Fermental Order Of Renaissance Draughtsmen with a 38 point average score. Gary also designed one of the blind pig logos for MIY2K—the 1999 AHA National Homebrewers Conference.

#### Third Place

Harold Gulbranson of San Diego, CA, representing the Quality Ale And Fermentation Fraternity (QUAFF) with a 36.6 point average score. Harold also took gold in the Wheat Beer category in the 2000 AHA National Homebrew Competition.

## Historical Beers

### AHA Club-Only Competition

The December AHA Club-Only Competition is Historical Beers. We selected this category to highlight the BJCP Style Guidelines which AHA adopted over a year ago. The competition is hosted by Bob Rescinito, Tim Nagode and the High Plains Draughters.

The historical beers category is unique in that the brewer is required to send stylistic information and references in with the entry in order to give the judge panel more stylistic background and brewer's intention information. One entry is accepted per AHA registered homebrew club of two bottles in the section of category 24 that refers to Historical Beers.

Entries are required to have a \$5 check made out to AHA and an entry/recipe form and bottle i.d. forms. More information the club-only competitions and forms are available at <http://beertown.org/AHA/club-comp.htm>. Please send your entry to:

AHA Club-Only/attn: Chuck  
c/o The Brew Shop  
3624 N. Pennsylvania  
Oklahoma City, OK 73112

Entries are due November 25, 2000. Judging is tentatively slated for December 2, 2000.

## Past Winners—Homebrew Club of the Year

2000	Kansas City Bier Meisters, KS
1999	Oregon Brew Crew, OR and Urban Knaves of Grain, IL
1998	Capitol Brewers, OR
1997	Derby Brew Club, KS
1996	Chicago Beer Society, IL
1986-95	Sonoma Beerocrats, CA
1985	Malt Hoppers Beer Club, TX

**Homebrewer Paul Gatza is the softball coach for Hop Barley and the Alers, a Boulder, CO homebrew club.**

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John D. Ayres—Eau Claire, WI  
Patrick G. Babcock—Canton Township, MI  
Daniel Bangs—Cher-Dan's SSS—Enid, OK  
David Barlow—Davis, CA  
Scott T Bartmann—Barzona Brewing Co—Ahwatukee, AZ  
Norm Bauer—Fenton, MO  
Roger William Bauer—Dog Lips Brewhaus—Tukwila, WA  
Kinney Baughman—Brewco—Boone, NC  
Tim Beauchot—Albion, IN  
Bill Benjamin—Benjamin Machine Products, Modesto, CA  
Matt Berg—Medfield, MA  
Thomas Bergman—Jefferson, MD  
Tom Berntson—Salem, OR  
Scott Berres—Mesa, AZ  
Jerry Black—Springfield, OH  
Don Bockelman—Sergeant Bluff, IA  
Jeff Bonner—Allentown, PA  
Gary Brown—Dayton, OH  
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Alan Burkholder—Columbus, OH  
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Daniel J. Ryan—Menlo Park, CA  
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Sabine Weyermann-Krauss—Weyermann, Mich GmbH—Bamberg, Germany  
Lee Scott Viberg—Roseau, MN  
Robert Wikstrom—Derby, KS  
Thomas G. Wilk—San Antonio, TX  
Steven Willey—Parker, CO  
David G. Williams—Port Orchard, WA  
Peter F. Wilson—Auburn Hills, MI  
Kevin Winden—Anacortes, WA  
Henry Wong—Rexdale, ON, Canada  
Donald Wood—Stanton, CA  
Kent Woodmansey—Pierre, SD  
Lowell D. Yeager—Canterbury, CT

### GOLD

Brian Baber—ParrotHead Brewing—Temecula, CA  
Chris Brauning—Zanesville, OH  
Andrew Fee—Nantucket, MA

Bill Garrard Jr—Coyote Springs Brewing Co—Phoenix, AZ  
Allen Goembel—Petersburg, IL  
William Hassler—Pearl City, HI  
David Hayes—Los Alamos, NM  
David Hutchinson—Hopkinsville, KY  
Steve McDowell—Reno, NV  
Robert J. Miller—San Luis Obispo, CA  
Mark Morgans—Cannon Beach, OR  
Allan W Murfit—Anchorage, AK  
Ian & Jake Quinn—Glen Echo, MD  
Franklin Radcliffe—Las Vegas, NV  
Joel Rea—Corvallis Brewing Supply—Corvallis, OR  
Thomas Rhoads—Chicago, IL  
Michel Rousseau—Distriavin Ltd—Longueuil, PQ, Canada  
George Santini—Cheyenne, WY  
Thomas C. Weeks—Denville, NJ  
Yeasty Brew Unlimited—Mill Valley, CA

### PEWTER

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Harry K. Bailey—Oak Harbor, WA  
Richard Bender—Bathtub Brews—Shenrock, NY  
Jay Berman—Vista, CA  
Hugh Bynum—Portland, OR  
Mark Caspary—O & S Bag Company—Idaho Falls, ID  
Leon Chichester—Herdon, VA  
Michael Cron—Monsey, NY  
Mark Duffield—Cambridge, MA  
Kevin Fitzpatrick—Maple Grove, MN  
Doug Griffith—Sewell, NJ  
Bill Hallett—Rochester, MN  
Nancy Hambacher—Pantano Creek Brewer Supply—Tucson, AZ  
Byron Holston—Buffalo Grove, IL  
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Neal Kaufman D.D.S.—Westlake, OH  
Melvin Kelly—Crawfordsville, IN  
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Larry Copeland—Smryna, GA  
Ara Derderian—Rancho Cucamonga, CA  
Kris Kucera—Freeport, ME  
Tom Mercier—Timmonsville, SC  
Miami Area Soc of Homebrewers—Miami, FL  
Tom Reed—Trenton, NJ  
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### Rubbermaid Coolers Revisited

Dear Professor,

Re: Leonard Hotham's question about replacing the plastic valve on Rubbermaid coolers with a brass one, we were surprised, nay amazed, that the Professor was apparently unfamiliar with the use of round Rubbermaid coolers for mashing and sparging. I trust he's learned all about it since then, but since he asked, here's our version of "what gives."

The REAL reason Leonard would want to do this, of course, is that brewers everywhere use these coolers for both mashing and sparging, with the installation of a false bottom (e.g. Phil's) and some sort of valve to control the outflow of sweet wort into the brew kettle.

The plastic valve that comes attached to the coolers is unusable for sparging because: 1) it is a push-button valve which requires constant thumb pressure for liquid to flow; 2) you cannot readily attach the hose/tube which connects to the false bottom inside the cooler; and 3) you cannot reliably attach a hose to the outside of the cooler to run the wort into the kettle.

Some of our club members have played with different fittings and valves to attach to the inside and outside of the coolers. For my hot liquor tank, I use one pieced together with a 1/2 inch hose bib with a threaded male end, a nut, and a brass hose barb with a threaded end which fits the inside of the threaded male end on the inside of the cooler. Using garden washers on the inside and outside of the cooler and the nut to tighten the hose bib to the cooler works well enough to keep the thing from leaking. We accept the Professor's wisdom on the issue of using brass fittings in brewing. I guess stainless would be much better, but is harder to find and more expensive.

However, for various reasons we've mostly all returned to the tried-and-true

method of using a drilled #3 rubber stopper (available at any homebrew supply shop worth its salt) and a short length (8-10 inches) of 3/8 inch copper tubing which has been slightly bent at the exhaust end, to sparge with. The copper tube runs through the rubber stopper, which is inserted into the cooler's hole FROM THE INSIDE. The tube is attached to the false bottom with a short (2 inch) length of regular 3/8 inch siphon tubing or reinforced tubing available at hardware stores. The bent end of the tube is on the outside of the cooler, and attached to a piece of siphon hose to run into the kettle. The flow rate is controlled one of two ways, either with a "hose clamp" with click adjustments which slides on the outside of the hose running into the kettle, or an in-line valve such as those available from Williams Brewing and elsewhere.

There are vendors out there who sell valve kits to make a more rigid connection to the cooler. I think some of them use plastic valves similar to those used on bottling buckets, and they require drilling out the hole in the cooler to a wider diameter to accept the threaded end of whatever valve they use. Personally, my experience has been that it is better to use an exterior hose clamp or an in-line valve as described above rather than a valve attached to the cooler itself, for the reason that if the valve gets clogged with a couple of pieces of grain coming through, it's easy to free the clog with the exterior hose clamp or in-line valve, but not so easy with a clog that you can't even see on the inside of a valve that's attached to the cooler.

There you have it.

Steve Kranz

Midnight Homebrewers' League  
Westminster, MD

Dear Steve,

*Thanks for the blow to the head and more insight into the cooler dilemma. I've been brewing for 30 years myself and yes I do remember those coolers and yes I fooled around with them too, before settling into my own little system of brewing. I guess I can't be trusted to remember everything I ever brewed with in my life. Thank goodness there are people like you that enjoy sparring with the ole professor.*

*The Professor, Hb.D.*

### A Question of Gravity

Dear Professor,

I have a couple of quick questions for you.

1. I consistently fail to meet OG for the kit recipes I use. I use DME/liquid extract (depends on the kit I purchase from my



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homebrew store) and steep a small quantity of grains (usually 1/2-1 pound quantity) in a gallon or so of 150° F water for 30 minutes, then sparge with 2 cups of hot tap water. After the boil, I usually end up with 5.5 gallons of wort that goes into my fermenter. I'm sure many factors decrease my OG, but this seems a consistent problem for me. Today, I brewed an English Pale Ale that came in at 1.044 when the kit printed target was 1.054. I haven't read of potential solutions in *Zymurgy* or other publications in my rapidly expanding homebrew library. Any advice would be appreciated.

2. A "How I Do Yeast Culturing" article would be great. A "hands-on" presentation of an experienced homebrewer (not a professional brewer—someone like me, but more experienced) and his/her procedures, equipment, advice, etc would be very helpful to those of us thinking of venturing into this interesting area.

My interest in homebrewing is motivated by personal pride in well-crafted homebrew. I also want to learn more about the art and science of this fascinating hobby.

The opportunities to engage the mind and imagination are staggering, plus homebrewing satisfies my love of gadgets. The more I learn, the more I am motivated to explore more about my hobby. I also want to thank you and encourage more "Extract method" additions to the recipes in *Zymurgy*. I am perhaps years from attempting all-grain brewing. My skills are well challenged using the extract method with a small pot of grains for flavor and color on the side. Please continue offering us the benefit of these interesting and compelling recipes.

Robert Boucher  
San Antonio, TX

Dear Robert,

Assistant *Zymurgy* editor Amahl Turczyn jumped in to answer your questions while I was away brewing some beer. Here are his responses:

1. *First, it has been my experience that such kits always provide the homebrewer with ideal target gravities; theoretically achievable, but in the real world it's often difficult to get the same results. Many kit manufacturers also suggest adding a quantity of sugar to boost the original gravity, for which malt extract should be substituted if that is the case with your kit. Mashing, even partially, is a whole different ballgame. If you suspect that your mashing efficiency is making you fall short of your target O.G., there are a lot of different choices for improving it. From your description of the process, it may be the fact that you are sparging with hot tap water, which I would assume is 110 to 120° F at best. 160 to 170° sparge water is the norm for most pro brewers, at least the ones I know. Other variables may include mash thickness, mash pH, sparge water pH, and mash agitation during the mash, among others. Acidifying sparge water is one technique for getting really great efficiencies, but this practice also (at least to my palate) leaves a bit of an unpleasant edge to the finished product. My advice, to make a lot of yammering into a little yammering, would be to brew several times using the same technique, and if you find you are consistently falling short of your target, boost your grain bill (or extract bill) a bit to compensate.*

2. *I wrote a piece on yeast culturing for the beginner in the 1998 Special Issue ("The*

*Magic of Yeast") of Zymurgy. It might be of some help.*

Regards,  
Amahl Turczyn  
Associate Editor  
For the Professor, Hb.D.

## The yeast that never quit

Dear Professor,

Way back in January, I made a batch of Rocky Raccoon's Crystal Honey Lager. After 6 weeks of lagering, I went away on a week-long trip. The beer was perfectly still when I left. When I got home and was getting ready to bottle, I went to retrieve the beer from the refrigerator. It was bubbling merrily away. Deciding to relax and not worry, I bottled it anyway. It tasted just fine, no off flavors or anything to suggest bacterial contamination. Being a homebrewer, I'm still curious about its behavior. The only reason I can think of for its actions is that I left it in its glass primary fermenter for the entire fermentation process, but even that doesn't seem like a very probable explanation. Any theories?

Thanks,  
John Weinert  
Webster, NY

Dear Long John,

*Yep, same thing happens to me on occasion. For me it has been corrected by starting with a new yeast culture or paying more attention to sanitation. What usually causes these kinds of prolonged renewed fermentations is an introduction along the way of a wild yeast that has finally taken hold in the later stages of aging and begins to ferment those things that are not usually fermentable. Often times, and in the short term, the effect on homebrewed beer is negligible, but keep it around too long (many months, especially at room temperature) and you will begin to experience not only overcarbonation, but also some phenolic (plastic-like) off flavors.*

*You lucked out with this one, but you'll have to keep things a bit cleaner next time. How long has it been since you replaced your siphon hoses? Over a year? Get a new one if so. That's been an effective solution for me.*

*The Professor, Hb.D. (continued on page 55)*

## Malt extract is also used in the production of:

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Baby Foods  
Biscuits  
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Tonics  
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## An Example of Malt Extract Carbohydrate Composition

Maltose.....	43%
Dextrin .....	30%
Maltotriose .....	11%
Glucose.....	9%
Fructose .....	1%
Sucrose .....	1%

ADAPTED FROM J. PAIK, N. H. LOW, W. M. INGLEDEW. "MALT EXTRACT: RELATIONSHIP OF CHEMICAL COMPOSITION TO FERMENTABILITY." ASBC JOURNAL. VOL 49. NO. 1. P 8-13.

## Making Extract:

"Concentration of wort is under vacuum at a temperature below 100° F (37.8° C) to give syrup of S.G. about 1.400 containing 75-80% solids. Vacuum drying of syrup yields a powder with over 95% solids."

J.R. HERON. "SOME OBSERVATIONS ON COMMERCIAL MALT EXTRACTS." J. INST. BREWING. VOL. 72. P 452-457. 1966.

- Ever wonder what malt extract evaporators look like? This link provides a nice photo: <http://brewing.co.nz/pics/9.jpg>
- Malaysian government regulations define malt extract as follows:
  - (1) Malt extract shall be the substance obtained by evaporating an aqueous extract of malt at a temperature not exceeding 55° C (131° F).
  - (2) Malt extract shall contain not less than 70 per cent of total solids derived wholly from malt.
  - (3) The diastatic power of malt extract shall be such as to ensure that 10 gm (0.33 oz) of the extract shall, in 30 minutes at a temperature of 40° C (104° F), convert 25 g (0.85 oz) of pure anhydrous potato starch into an equivalent amount of maltose. (<http://dph.gov.my/Division/fqc/Regulation77.htm>)

- Many small commercial breweries in the US make beer using malt extract and some have won numerous medals at the Great American Beer Festival®. Examples include Pacific Coast Brewing Company of Oakland, CA which has won more than a dozen GABF medals and the Cottonwood Grill and Brewery in Boons, NC. See the complete article on this subject at [www.maltproducts.com/NewBrew.html](http://www.maltproducts.com/NewBrew.html).

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# Fast Facts

## Extract FAQs

Approximate OG of malt extract syrup: 1.400

Malt extract syrup water content: about 20%

One pound of malt extract syrup in 1 gallon of water gives a wort of about 1.038 S.G.

pH of malt extract: 5.2-5.8

## Top Selling Extracts/Kits

(From various locations around the country.)

### Great Fermentations of Indiana

- 1) COOPER'S CLASSIC NUT BROWN ALE
- 2) COOPER'S PALE ALE
- 3) LAAGLANDER IRISH ALE

### The Winemaker Shop, TX

- 1) COOPER'S LAGER
- 2) COOPER'S REAL ALE
- 3) MUNTON & FISON NUT BROWN ALE

### Homebrew Haus, NC

- 1) MUNTON & FISON AMERICAN LIGHT ALE
- 2) LAAGLANDER IRISH RED
- 3) JOHN BULL CANADIAN RECIPE ALE

### Hearts Homebrew, FL

- 1) COOPER'S DRAUGHT
- 2) MUNTON & FISON AMERICAN LIGHT
- 3) MT. MELLICK SCOTTISH EXPORT

### Hop & Vine, NJ

- 1) JOHN BULL MASTER CLASS IPA
- 2) BREWER'S BEST AMERICAN MICROBREW
- 3) MORGAN'S ROYAL OAK AMBER



# Extract Rules!



By Ed Westemeier

# Champion Extract Brewers Share Their Tips and Secrets for Success

**E**verybody knows you can't win a competition with an extract beer, right? Well, the smart money often bets against what "everybody knows," and this might be one of those times. If you look at the category winners in the AHA National competitions, you'll notice that a significant number are extract beers. We're not just talking about medalists, but gold medal winners.

With that in mind, it seemed as though these winning extract brewers must have some ideas worth hearing, so we talked to seven of them and asked for their secrets. The answers were sometimes surprising, but there were quite a few common threads among them.

The brewers we talked to come from all over the country. Stu and Sue Thurmond of Kennesaw, GA won a gold medal this year with an oatmeal stout, and John Adkisson of Tucson, AZ won with a Belgian wheat ale with peaches. Chris Lavoie of Albany, NY took a gold for the second year in a row with his American style pale ale. From last year's first place winners, we talked with another New Yorker, Bob Brotschol of Woodhaven, who won with a robust porter. Among previous winners, we received input

from Dennis Waltman of Atlanta, GA who, with his partner and father Paul, took a gold in '98 with a black peppercorn beer, Mark Tomusiak of Boulder, CO, who had a first place Belgian strong ale that year, and Joe Newcomer of Las Cruces, NM, who took the gold in '97 with a honey pilsner.

Here are the principal bits of advice these expert extract brewers wanted to pass on.

## Sanitation

You knew this was going to be the first item in the list, didn't you? Nearly all these brewers, when asked for their most important point, started off with sanitation as their most important item. According to Joe Newcomer, "You can get away with a lot, as long as you're clean throughout the process." Dennis Waltman says, "I know everyone is really tired of hearing about sanitation, but it just has to be said. You can't emphasize it enough." Some, like Dennis, use an immersion chiller, while others use a counterflow chiller, but they all agree that rapid cooling of the wort after boiling is critical, as is quickly getting the cooled wort and a big, healthy dose of yeast into a scrupulously clean fermenter.

## Yeast

Good yeast was another common denominator, as the most important factor a brewer can really control. Every one of these champions used liquid yeast, either foil packs from Wyeast or vials from White Labs.

Everyone also emphasized that the yeast is absolutely critical to making great beer. Chris Lavoie, the double gold medal winner, used a standard Wyeast pack and built up a large starter in three steps. Mark Tomusiak is another one who likes using a large starter, up to two liters, as do Joe Newcomer and John Adkisson. Bob Brotschol made his winner with plenty of yeast slurry

pitched from a previous batch that had been started with Wyeast. The Waltmans prefer to use either the larger Wyeast pack or a White Labs yeast, while the Thurmonds stick with White Labs yeast.

Using high quality yeast is important to all of them, but that goes far beyond simply the brand name. Almost everyone stressed the importance of using not just good yeast, but the freshest yeast they could get. They simply don't expect to achieve championship results from an out-of-date yeast sample. Most of them achieve that level of freshness by building up a good-sized yeast starter or using the newer large-

size Wyeast packs. Stu Thurmond doesn't usually make up a starter, but he places high importance on his yeast's freshness. When it came time to brew his gold medal stout, he only had an older vial of White Labs yeast on hand. He felt he needed to be sure he was pitching enough viable yeast, so he used a second vial of fresher yeast along with it.

Joe Newcomer was equally concerned about pitching enough yeast, so he took an unusual gamble with his prize-winning specialty beer. "It was one of those mornings when I just woke up with the urge to brew," he said. "I had nothing ready except some

## Extract Based Champion Beers

This list includes all of the gold medal winners in the AHA's National Homebrew Competition for the years 1995-2000 where extract provided the majority of the fermentable material.

Year	Brewer	Hometown	Style	Extract Brand
1995	Dennis Davison	Milwaukee, WI	Bock: Eisbock	Munton & Fisons
1996	Mike Harper	Oakdale, CA	Barleywine	Alexander's
1996	John C. Allen	Alpharetta, GA	American-style Ale: APA	Superbrau
1996	Scott Mills	Loveland, CO	Herb & Spice Beer	Ireks
1997	Todd Wallinger	Colorado Springs, CO	English & Scottish Strong Ale	William's English Light
1997	Gregory S. Herman & Hai T. Mai	Richland, WA	Fruit & Veggie Beer	Liberty Malt Supply
1997	Joe Newcomer	Las Cruces, NM	Specialty & Experimental	Muntons
1997	Eric P. Christensen	Annapolis, MD	California Common Beer	Northwestern
1998	Mark Tomusiak	Boulder, CO	Belgian Ale: Saison	Not provided
1998	Garrett Luedluff and Tim Moran	Ft. Smith, AR	Fruit & Veggie Beer	Not provided
1998	Dennis and Paul Waltman	Atlanta, GA	Herb & Spice Beer	Not provided
1999	Jim Buckett	Chagrin Falls, OH	English Style Pale Ale	Not provided
1999	Chris Lavoie	Albany, NY	American-style Ale: APA	Not provided
1999	Robert M. Brotschol	Woodhaven, NY	Robust Porter	Not provided
1999	Douglas B. John, Jr.	Forest, VA	English & Scottish Strong Ale	Not provided
1999	Deb and Frank Nelson	Apple Valley, MN	Stout	Not provided
2000	Chris Lavoie	Albany, NY	American-Style Pale Ale	"super light pale malt"
2000	Sue & Stu Thurmond	Kennesaw, GA	Oatmeal Stout	Munton's extra-dark dry malt extract
2000	John Adkisson	Tucson, AZ	Belgian Wheat Ale with Peaches	Weizenbier malt extract



## Summary of Styles

Style Grouping	Number of Winners
Specialty: fruit, spice, experimental, etc:	5
Pale Ale: American or English:	4
Strong: barleywine, bock, strong ales:	4
Porters & Stouts:	3
Other: (Belgian, Ca Common)	3

exceptionally high quality hops, so I just went to the store and bought the extract, honey, and yeast." He got a regular pack of Wyeast, and pitched it into some starter wort as soon as he started his brew session.

Many brewers might have simply pitched the yeast pack and hoped for the best. But making a beer without a big, healthy slurry of active yeast is such a critical part of brewing for Joe that he decided it was worth waiting. Joe cooled his wort after boiling, then put it into a carboy and stored it in his refrigerator. Meanwhile, he stepped his starter up, bringing it to about one quart size in a couple of days. When he felt he had enough yeast cells to pitch into the five gallons of wort, he brought out the carboy and started the fermentation

"I knew I was taking a big chance, leaving the wort sit without yeast for two whole days," said Joe. "But I felt it was worth the risk, because you really can't count on a great beer if you underpitch it."

#### **Technique**

There was no clear consensus about brewing techniques among this group. Straight extract, grains steeped separately, or partial mash methods all contributed to their gold medal beers. The lesson seems to be that it's more important to do everything well than to simply follow one particular procedure.

One common thread among most of these brewers was the need for a full wort boil. Using the old method of boiling just the extract with a little water, then cooling it with more water, can give a good beer, but boiling the entire volume of wort in a suitably large kettle seems to always produce a better beer.

Joe Newcomer and Bob Brotschol stressed the importance of stable fermentation temperature. In Joe's case, "Southern New Mexico isn't the best place to brew lagers, but a stable basement and the wet T-shirt method work pretty well." That's the technique of placing your carboy in a pan of water and covering it with a cotton T-shirt



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partly in the water. The shirt wicks up the water from the pan, and as the water evaporates, it cools the carboy. The method is really simple, but it can drop the temperature of your fermenter by several degrees.

Bob Brotschol also made the important point that since fermentation itself is a heat producing reaction, you need to take that into consideration. Fermenting beer will always be a little warmer than the surrounding air.

John Adkisson especially likes the convenience of extract when he makes wheat beers. He has found that mashing with a significant percentage of wheat can cause problems such as a stuck mash, slow sparging rate, and the like. But by using wheat extract, he can completely avoid those potential problems and concentrate on just making beer. He also likes to include an extract component when making a beer style that calls for lots of complexity, like old ales or Belgian beers. Using extract gives him the benefits of mashing a wider variety of grains, with none of the work.

#### **Aeration**

The majority of these winning beers were aerated with oxygen after cooling the wort. These brewers understand that healthy yeast require plenty of oxygen to reproduce. While it's perfectly fine to rely on vigorous aeration with normal air, it's easier to ensure adequate aeration by bubbling a little oxygen through the wort before pitching the yeast.

#### **Ingredients and Recipe Formulation**

All the winners used original recipes they developed themselves. In the husband-and-wife Thurmond team, Stu does most of the brewing, but this oatmeal stout used his wife Sue's recipe. "It's my favorite style," she said, "so I'm especially interested in how it's made." They made it with extra dark malt extract, with specialty grains steeped in a bag for an hour and a half at 156° F (69° C).

John Adkisson's Belgian wheat ale let him get creative. He used liquid extract along with a partial mash of five specialty grains, then combined them into the boil. He split the batch into two carboys for primary fermentation with two different yeasts, then combined those. Finally, he split the resulting batch again and made two different beers, one with peaches, the other with cherries. This first place beer was the first time John had used peaches.

Chris Lavoie used Munton & Fison liquid extract, along with a mini-mash of four specialty grains. He says, "you really have to use crystal and maybe Cara-pils malts for body, or an extract beer is just too thin."

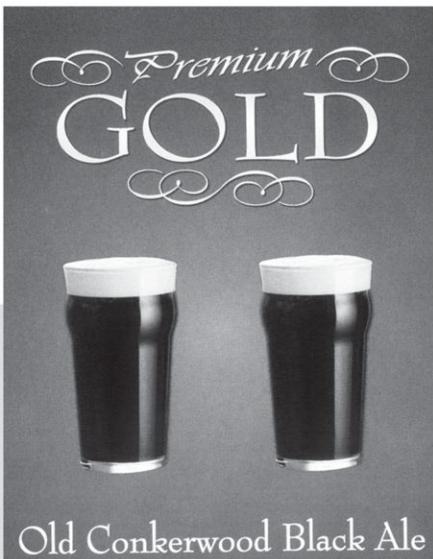
Bob Brotschol's robust porter recipe also called for Munton & Fison extract, both liquid and dry, along with specialty grains steeped separately.

Dennis Waltman's black peppercorn beer used bulk liquid extract, including wheat extract, plus a little honey, with no specialty grains. He recommends the bulk extract from a drum at the

(continued on page 52)

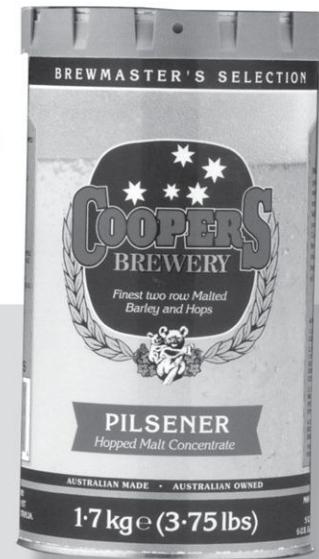
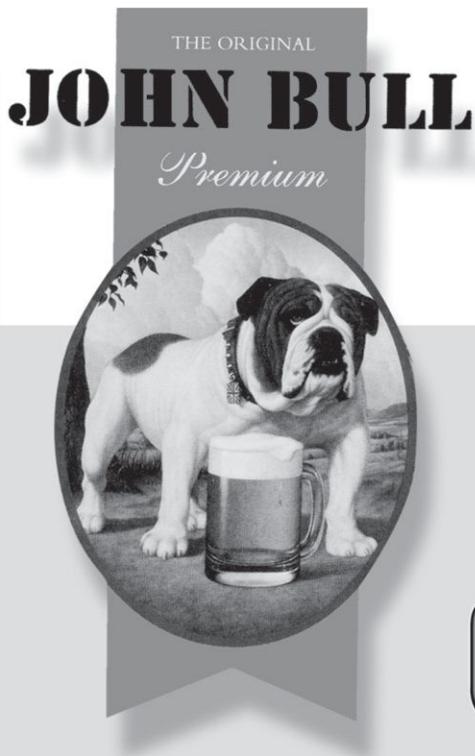
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*Muntons*



**COOPERS**

# OUR EXPERTS

**B**eer kits are a mainstay of the homebrewing hobby. Nearly everyone is familiar with this standard commodity that commonly contains hops, malt and yeast. Nearly everyone starts brewing with these kits and for the vast majority of the brewing public, these easy-to-use products are the basis for every batch of homebrew. Everyone uses—or has used them—and lots of people seem to like the beer. But how good are these kits really?

To answer that question, we decided to put them to the test. We worked with Fred

Czuba at Steinbart Wholesale, a leading wholesaler of homebrew supplies, to arrange a rigorous test of some of the leading homebrew beer kits. To ensure that the beers were made properly, we let Steinbart or the manufacturers make the beers according to the directions. We then tested them using a panel of distinguished judges and professional brewers who provided both comments and numerical ratings.

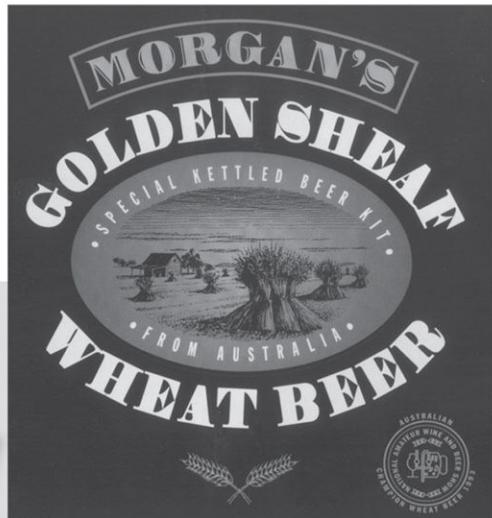
Our chief goal in this exercise was to unveil the strengths and weaknesses of simple beer-brewing kits. The products select-

ed were the “all-in-one” type that included hopped extract and yeast. In all cases, the kit extract was supplemented with either corn sugar or unhopped malt extract in the proportions indicated on the can. As per kit directions, none of the worts were boiled.

Here's what we found out about these simple, no-boil kits. First, the beers displayed a range of desirable beer flavors. In some cases they delivered pronounced hop character that boosted the ratings of the beers with our judges. In other cases, they showed stylistically appropriate fermenta-



**BREWFERM®**



# Taste the Kit

tion products that helped to make them appealing. On the malt front, the most common descriptor used was "caramel," with occasional references to roasty or toasty character.

Second, a number of the beers merited ratings of average or above-average from our demanding judges. This is very impressive given the extreme ease with which these beers can be made. Those who like to make a decent beer and still have time to enjoy other hobbies on the weekend will defi-

nitely find pay dirt in the kits that we review here. Furthermore, even those brewers who produce all-grain brews for competitions and gatherings of beer geeks may find these kits to be a suitable choice when they need something to take to a party or picnic or even just to keep around the house to sip on during football games or cookouts.

Of course a kit is basically an "instant" beer—a sort of Betty Crocker cake mix of the brewing world. Like all instant food or beverage offerings, the final product does not fully reproduce the flavor and character of the same article made from scratch. Our judges noted that many of the beers were thin bodied and occasionally watery—a trait

which tends to be exacerbated when corn sugar is used. Beyond this, several of the beers drew comments about off-flavors including phenol, dimethyl sulfide (DMS) and oxidation. These traits can be attributed to causes that may lie with either process or ingredients.

Of course most beers have a flaw of some sort. The average beer drinker certainly can't identify the problems that our judges pointed out and generally doesn't care. Thus, if you are looking for easy-to-make beers that give good results, then these no-boil extract kits can fill the bill. Now that you have a basic idea of the study we conducted, let's review the details.

# BEERS BY RAY DANIELS

# BREWFERM®

ABBEY	<p><b>Aroma:</b> Lots of malt with caramel notes, some esters.</p> <p><b>Appearance:</b> Deep amber, clear.</p> <p><b>Flavor:</b> Caramel notes dominate malt flavor. Some diacetyl, green apples. Medium body, dry.</p>	<p><b>Aroma:</b> Fruity with bubble gum and green apple notes. Low hop and malt character. Pleasant.</p> <p><b>Appearance:</b> Pale, slight haze.</p> <p><b>Flavor:</b> Hops mild, not harsh and biting, but there for sure. Very light smooth malt character. Light body. Some tartness.</p>	GRAND CRU
AMBORIX	<p><b>Aroma:</b> Some citrusy hop character. Pretty fruity, leaning to solvent. Bit papery.</p> <p><b>Appearance:</b> Coppery color with some haze.</p> <p><b>Flavor:</b> Starts with a very light maltiness, but the fruitiness and phenols rapidly overwhelm everything else. These carry through to a slightly astringent finish with some sourness. Moderate hop bitterness. Alcohol is evident in the flavor, but solvent character may be partially attributable to high ester level.</p>	<p><b>Aroma:</b> Belgian qualities. Light spiciness. Candy-like, acid-like, fruity, almost sharp aroma.</p> <p><b>Appearance:</b> Amber brown, slight haze.</p> <p><b>Flavor:</b> Tangy, sour fruit flavors throughout. Sharp, some woody notes, almost cork-like. Light hop flavor. Some malt sweetness. Medium body. Complex light acid, not astringent, not lactic. Dry.</p>	OLD FLEMISH BROWN
GOLD	<p><b>Aroma:</b> Powerful aroma loaded with candi sugar. Aromatic alcohols are present, and there are also banana/bubblegum notes. Smells Belgian.</p> <p><b>Appearance:</b> Golden-orange, very slight haze.</p> <p><b>Flavor:</b> Strong malt up front that carries through to an alcoholic finish. Esters noted in the aroma are present, but a bit muddled. Finish dies—could use more hop bitterness to balance.</p>	<p><b>Aroma:</b> Bready with some ripe fruit. Sweet, but not much. Caramel. Little to no hop.</p> <p><b>Appearance:</b> Golden, slightly hazy.</p> <p><b>Flavor:</b> Malty specialty malt flavor "Special B" or Vienna-like. Biscuits, bready. Slightly tart. Crisp finish almost balanced, hints toward malt. Some fruitiness—almost thought that it was a fruit-flavored beer at first.</p>	WHEATBEER

## Our Judging

The best test of extract beer quality might have been carried out in a bar. If we gave the average bar patron a kit homebrew at say, half the price of his regular beer, would he choose the homebrew or his mass-produced lager to drink for the evening? Kits that could win in that sort of contest would surely be destined for commercial success.

But homebrewers as a group are not your average beer drinkers. So instead of the bar test, we decided to try a much more rigorous examination. For this purpose, we went to beer connoisseurs—a group of experienced beer tasters with well-trained palates and high expectations when it

comes to quality beer. We figured any beer that rated good marks from this group would certainly be worthy of praise.

The judges fell into two groups. First we had the professional brewers—guys who make beer for a living. This group included well-known brewing author Dave Miller who is brewmaster at Blackstone Brewpub in Nashville, TN as well as Ron Rake, head brewer at the Shipyard Brewery in Orlando, FL and Tomme Arthur, head brewer at the Pizza Port/Solana Beach Brewing Company near San Diego, CA. Second, we had homebrew judges. This group includes Scott Bickham of Corning, NY and Rex Halfpenny, who lives in Michigan, plus two more from Chicago: Randy Mosher and Steve Hamburg. I joined Mosher and Hamburg during the Chicago tasting to add an additional source for our data. You will find a short bio on each of the judges in the sidebar that accompanies this article.

The judges had no idea whether they would be receiving commercial or homebrewed beers. I simply told them that I was looking for participants for a blind tasting of "experimental beers".

All of the beers for judging were sent to me in coded, unmarked brown bottles. Thus during the judging, even I did not know the identity of the beers. Since five of the seven judges administered their own tasting sessions, I had to make sure that all of the bottles were as uniform as possible. Once I had all the beers assembled, I removed all the previous labels and codes and gave each bottle a new code number. This created a panel of beers that appeared to have come from a single source and, apart from the code numbers, they were utterly indistinguishable from one another.

We had a little inconsistency in the evaluation of some of the beers. First, when the Brewferm folks sent their samples, they provided two bottles of each of six beers rather than six bottles of two beers. Since only two judges could receive each Brewferm recipe, I simply distributed them randomly among the judges. The only real downside to this is that we got just two data points on each Brewferm beer rather than seven.

The Coopers beers presented another challenge. They sent three bottles of their one beer, but due to miscommunication, they did not reach me until after all the other samples had already been distributed. As a result, all of the tasting results on the Coopers product came from the three of us who tasted in Chicago.

One pitfall of judging comes in the order in which samples are tasted. Often people will latch onto the first beer they taste as being the best. Other times a particularly good or bad beer can negatively or positively influence the sample that follows it. To

# JOHN BULL

PREMIUM PILSESNER	<p><b>Aroma:</b> Light berry nose, hinting at malt sweetness and fruitiness. Hints of smokiness.</p> <p><b>Appearance:</b> Amber, clear.</p> <p><b>Flavor:</b> Soft fruity/raisiny malt note. Hints of orange-like hop note. Thin. Bitterness OK. Decent balance, smooth finish. Some smokiness.</p>
PREMIUM TYNESIDE BROWN ALE	<p><b>Aroma:</b> Mellow malty aroma, light fruitiness. Light specialty malt, crystal-caramel aroma.</p> <p><b>Appearance:</b> Nearly bright, rich big amber color.</p> <p><b>Flavor:</b> Thin sweet flavor, some caramel. No hop. Caramelly. Thin. Slight root beer like character.</p>

ensure that there was none of this “ordinal bias,” I assigned each site a specific randomized tasting order so that the order was different in each case.

Finally, I prepared a judge sheet for the evaluation. We did not provide the judges with style designations for the beers and I wanted to focus their attention on qualitative descriptions of what they tasted. To ensure that this occurred, I opted for a custom evaluation form rather than the BJCP or AHA scoresheets. This asked for the following descriptions: under aroma, they were “malt,” “hops,” “other” and “overall.” Under “appearance” it asked for notes on color and clarity. Under flavor, it sought overall impression, hop and malt character, body and other.

At the end of the sheet, the judges were asked to rate each beer on a 1 to 10 scale where 1 was “Undrinkable” and 10 was “World Class.” A score of 5.5 was marked as “average.” Additionally, judges were asked to rate each beer’s drinkability by selecting one answer to the following question: “If you had a supply of this beer would you drink it: a) daily, b) often, c) sometimes, d) rarely, or e) never again.

All of the tastings were performed within a two week time period and the data delivered to me for tabulation and analysis.

## MORGAN'S

### GOLDEN SHEAF WHEAT BEER

**Aroma:** Bready, yeasty sweet malted aroma. Nicely balanced with fruitiness. Some malt. No hop.  
**Appearance:** Golden with slight haze.  
**Flavor:** Pale malt character with hint of caramel. Some ester and phenolic notes, slight oxidation, some “bite” on finish. Some malt, but not very clean.

### ROYAL OAK AMBER ALE

**Aroma:** Mostly caramel, hints of spice, toast. Lightly spicy. Fruity.  
**Appearance:** Coppery, clear, no head.  
**Flavor:** Light toasty/toffee note, crystal malt flavor. Little hop flavor. Thinnish and dry.

While most of the judges tasted alone, at the Chicago location I served beer to Mosher and Hamburg while tasting the same samples myself in a separate room.

### The Results

I have provided a summary of the judge comments on each beer in the sidebars, so that you can read up on what our experts had to say about the character of these products. But meanwhile, we also collected quantitative data on each beer and that gives us a system for ranking these kits. Because of the variability inherent in the brewing process, we wanted to avoid anointing any overall winner on the basis of a single brewing. Thus instead of an overall stack-ranking, I have grouped the beers together into bands based upon their drinkability ratings. Here's what we found:

**A Band:** At the top of the heap, we find three beers that judges rated highest in terms of drinkability. These three were Brewferm Gold, Muntons Premium Gold Old Conkerwood Black Ale and Muntons Premium Gold Smuggler's Special Premium Ale. On our one-to-ten scale, these beers had scores between 6.4 and 7.2.

**B Band:** In the middle, we find six beers that our judges rated somewhat lower in terms of drinkability, but still scored as “average” overall. These included Brewferm Grand Cru, Coopers Brewmaster Series Pilsner, John Bull Premium Pilsner, John Bull Premium Tyneside Brown Ale, Morgans Royal Oak Amber Ale and Brewferm Wheat Beer. These beers elicited scores ranging from 4.1 to 5.5 on our ten-point scale.

**C Band:** In every judging of beers there are some which simply don't show well often through no flaw in the recipe or raw materials. The beer kits that our judges rated lowest in this evaluation included Morgans Golden Sheaf Wheat Beer, Brewferm Abbey, Brewferm Old Flemish Brown, Brewferm Ambiorix. Beers in this group had scores below 4.0 on our one-to-ten scale.

# Muntons

### PREMIUM GOLD OLD CONKERWOOD BLACK ALE

**Aroma:** Light hop aroma: citric, spicy, fresh hop note. Floral, winey, almost apple-like.  
**Appearance:** Deep ruby to black. Good clarity.  
**Flavor:** Starts cleanly with a rounded maltiness, hints of chocolate. Sharp, citric, perfumy. Light spicy hop note. Like a dry hopped dark mild ale.

### PREMIUM GOLD SMUGGLER'S SPECIAL PREMIUM ALE

**Aroma:** Fresh, resin-y American hop aroma. Hints of orange, herbal. Crystal malt in background.  
**Appearance:** Coppery, slight haze.  
**Flavor:** Toasted malt. Zesty citrus hop flavor. Finish comes up short, bitterness does not match other characteristics. A decent American ale.

Having laid all this out, let's not forget the caveats. This was a one-shot trial. It is entirely possible that a second trial would give different results as batch-to-batch variables changed across this range of beers. Also, if this were a traditional judging where beer styles were specified, it would no doubt help some beers while hurting others. In short, your results may be different from what we have achieved here.

### Conclusion

I personally found the results of this trial to be surprising. As someone who has been all-grain brewing for a long time and judging both professional and homebrewed beers for many years, I have pretty high standards when it comes to quaffing a few brews. Still, I found a number of these beers to be enjoyable and I was intrigued by the flavors that they offered. In several cases, I was convinced that whole hops or specialty grains must have been added to achieve the desired results. And never did I imagine that beers of this quality could be made without boiling the wort.

Once again I'm reminded that the hobby of homebrewing casts a wide net. While there will always be room (*continued on page 52*)

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**S**o say you're a lambic brewer, or a mead maker, or perhaps, a brewer who likes to experiment with new and novel ingredients to make a vegetable beer. If so, then what you might not know could have harmful and, perhaps, life-threatening implications. Did you know that one of the most toxic poisons known to man resides in many of the most common fruits and vegetables that are consumed and that it can be released under circumstances common to homebrewing? On the facing page, you'll see a few questions for you to check whether you might be in danger.

If you answered the first question in the affirmative, you need to know that questions 2 through 4 all have the same answer, namely *cyanide*. Before you, as a homebrewer, decide whether you should be making fruit and vegetable meads and beers, let's delve into some facts about cyanide and its potential to be in your homebrewed products.

# IT'S THE

BY DICK VAN DYKE AND JOE FORMANEK

## Cyanide, the Basics

Cyanide is one of the most rapidly acting lethal poisons. In its most common form as hydrogen cyanide, it can exist in a gaseous form as well as a liquid form; the liquid form is also called "prussic acid." Cyanide was the poison used in the tragic cyanide-Tylenol deaths, the deaths associated with the Jonestown massacre and the Hale-Bopp suicides in California. Interestingly, cyanide is the poison used most frequently in suicide attempts by chemists. Acute toxicity may result from medicinal uses (e.g., Laetrile).

**Question number 1:** Do you brew or drink ciders or beers or meads that have been made with fruits or vegetables?

**Question number 2:** Do you know what the following have in common: apple seeds, apricot seeds, peach seeds, cassava melons, cherry pits, choke cherries, bitter almonds, plum pits, pear seeds, flax, white clover, vetch seed, lima beans, hydrangea, cashew nuts, lime and lemon seeds?

**Question number 3:** What dangerous poison is frequently associated with the mild flavor and aroma of almonds?

**Question number 4:** What is the most frequently used poison used by chemists who attempt suicide?

PITS

OR CAVEAT CERUESARIUS:  
Let the brewer beware



Cyanide

Chronic exposure can also present a health risk, with the risk of neural and visual problems arising after prolonged exposure. Less well known is the fact that cyanide is an organic molecule which has been regularly detected in outer space, and has been found to be an essential precursor in the synthesis of basic biological building blocks such as nucleic and amino acids. Cyanide has a normal role in metabolism of both animals and plants, and occurs as a result of Vitamin B12 metabolism. It is also present in the body due to environmental factors such as food and smoking. Interestingly, many of these compounds produced by plants are targeted at insects, thereby acting as a defense mechanism.

In the human body, cyanide prevents red blood cells from being able to utilize oxygen. A key protein in the respiratory function of the cell is inhibited by cyanide, and the cell suffocates. A rapid progression of symptoms occurs with cyanide exposure and a person who swallows or inhales (smells) too much cyanide can lose consciousness, fall into convulsions,

and die within 15 minutes. Mortality from cyanide may be as high as 95 percent (Turkinton, pg 90).

Studies have found that there are more than 1,000 species of plants that have the potential to release cyanide. (Conn, pg 299) This cyanide is found in its gaseous form, hydrogen cyanide (which we'll abbreviate as "HCN"). HCN isn't present normally in most of these plants, but occurs only when the plant tissues are crushed or disrupted. When this happens, cyanogenic precursors meet specific enzymes liberated from damaged plant cells; this results in the precursors being converted to HCN. (For more details, see the sidebar: Biochemistry of Cyanide.) The most dangerous situation occurs when the precursors and the converting enzymes occur together as they do in some nuts and fruit pits such as those in raw almond, raw apricot, peach and cherry.

When it comes to ingestion of cyanide, the greater the dose, and the more frequent the dose, the greater likelihood of physiological problems. The body is capable of removing some of the HCN by itself, but chronic doses

may be too much for the body to cope with. Indeed, one possible complication of chronic low-level cyanide consumption is goiter—a painful swelling of the thyroid gland.

While governmental agencies such as the FDA and BATF have concerns about cyanide generation from pits, none of these agencies has hard data as to how much might be toxic or how much might be lethal. In fact, much of the research on cyanide toxicity focuses on the study of grazing livestock, not on humans. There are many factors that are involved in the toxicology of cyanide, and while it is easy to determine that a given plant has the potential of cyanide production, it is difficult to determine exact quantities of HCN produced by the plant itself. It is also difficult to determine a dosage level of cyanide within the subject eating these plants. The size and kind of speed of ingestion, type of food ingested with the cyanogen and the presence or absence of hydrolyzing enzymes within the subject are important aspects for determination of the effect of a dose of cyanide in a system.

There is also much conjecture as to the level of cyanide dosage that causes lethal effects in humans. The minimum lethal dose of HCN taken orally in humans has been estimated to range between 0.5 mg and 3.5 mg per kg of body weight (Conn, pg 303); however, as few as 50 apple seeds have been known to produce toxic results (Rush poison center). Conn also cites a case of cyanide poisoning in children who had eaten large amounts of western chokecherries without removing the stones. There is also a case cited in which a 3-year old child incurred cyanide poisoning from eating 15 apricot kernels. Upon assay, these seeds were found to contain 0.33% available cyanide (Hall, pg 450).

## The Biochemistry of Cyanide



Hydrogen cyanide (HCN) does not normally exist in most plants; it is released by enzymatic hydrolysis of sugar compounds called cyanogenic glycosides found in these plants. These cyanogenic glycosides are typically localized in the pit of various fruits, such as peaches and apricots, but can be found in the leaves and edible parts of other fruits and vegetables as well. A group of about 12 cyanogenic glycosides have been found in over 800 different plant species, most of which are not foods—but they are also found in some food plants as well.

Oil of bitter almonds, a generic name for pit oils such as those found in apricot and peach kernels, contains the glycoside amygdalin. Amygdalin is a bitter tasting, but relatively harmless cyanogenic glycoside by itself, occurring in a number of plants in which it causes no problem. However, when in the presence of certain enzymes, a danger exists. Amygdalin is hydrolyzed by the enzyme beta-glucosidase, which removes the glucose portion. The resulting nitrile is hydrolyzed by the enzyme nitrilase to release HCN. The glucosidase and the nitrilase occur together in an enzyme mixture called emulsin. Emulsin is present in plants usually at a different location than the cyanogenic precursors. When the plant structure is destroyed, which may occur during eating, freezing or crushing, the enzyme and glycogen are mixed which allows the cleavage of the glycoside into its component parts: a sugar, cyanide and benzaldehyde (which gives the "almond" character).

While pit oils may originally contain glycoside levels equivalent to as much as 11% of HCN, the usual level is 2-4%. All flavor oils produced commercially for food use from raw materials which contain cyanogenic compounds are treated chemically to remove the HCN and are designated FFPA (free from prussic acid). Homemade food containing these materials, and other natural sources of hydrogen cyanide such as cashew nuts, lima beans, and some liqueurs, e.g. Kirsch, result in the continued consumption of usually insignificant quantities of the toxicant. (Hall, pg 449).

In the body, cyanide ions are complexed with mercaptopyruvate to reduce the toxicity. From there, mercaptopyruvate is converted to thiocyanate and pyruvate. One problem with cyanide ingestion is that thiocyanate is a potent inhibitor of iodine uptake by the thyroid gland. Without iodine, the thyroid gland can swell and a painful condition called goiter can develop.

## Cyanide and the Homebrewer

OK, so now you know a bit about cyanide. Let's talk a little about brewing.

A typical comment by judges of beers and meads made with fruit is that almond notes are necessary to round out the flavors of cherry and other fruit beverages. Certainly, the almond flavor does add character and richness to the brew, but there is a direct relationship between almond flavor and the amount of cyanide precursor initially present in the fruit.

**Table 1 - Cyanogenic Plants and Plant Products**



Christmas berry
Velvet grass
Linum species [flax]
Prunus species (leaves, bark, seeds)
Cherry laurel
Western Chokeberry
Mountain mahogany
Pin Cherry
Wild black cherry
Chokecherry
Plum
Bitter Almond
Peach
Apricot
Sorghum species
Johnson grass
Sorghum
Sudan grass
Arrow grass
Pear (seeds)
Apple (seeds)
Crab apple (seeds)
Lemon (seeds)
Lime (seeds)
Jetberry bush (jet bead)
Elderberry (leaves and shoots)
Hydrangea (leaves and buds)
Bamboo (sprouts)
Cassava (beans and roots)
Cycad nut
Lima beans (black beans from Puerto Rico and tropical countries; not those grown in United States)

When it comes to the addition of fruit to beer and mead, practices vary widely. Often the maker incorporates fruit into the beverage during fermentation, either in the primary or in the secondary. Before doing so, the fruit is often crushed or the skin ruptured without removal of the seeds. This precrushed fruit may be sanitized before addition to the fermenter by heating it to 150-170° F (66-77° C) for several minutes, sometimes with seeds. Other times, the fruit is simply added to the kettle near the end of the boil for 5 to 15 minutes, with or without seeds, crushed or uncrushed. Fruit processed in these ways may

go into primary fermentation where it is in contact with the beer for a relatively short time, or it may go into the secondary fermenter for weeks to months. (Belgian brewers used to keep cherries and their pits in fermentation for a year or more.) Unfortunately, nearly all of the practices above in which seeds are present have the potential to produce some level of cyanide in the finished beer or mead.

And cider is no exception. Seeds are not commonly removed before apple crushing and so the potential for cyanide in the fermentable must exists.

So the question remains: what must a brewer do to work safely with fruit?

The answer is not all cut and dried. One remedy to the problem is to cook plant products that are high in cyanogenic compounds before using them in brewing. This denatures the enzymes present in the plant including those that are involved in the cyanogenic reactions. However, such cooking must occur before the fruit or vegetable is damaged so that the enzymes are not liberated and allowed to react with the cyanide precursors before denaturation.

However, there is another, more serious problem. It turns out that the enzymes needed to produce cyanide from plant precursors naturally occur in the human digestive tract where they are generated by normal intestinal microorganisms. Therefore, if cyanogenic precursors are consumed, cyanide may be liberated within the intestinal tract of the consumer.

The simple solution then is to deliberately try to avoid exposure where you can. For the brewers and mead/cider makers, this means being acquainted with your ingredients, avoiding seeds of the culprit plants, and, when imbibing in others' products possibly containing such seeds, do so with caution.

It is known that cyanide exists in many fruits and vegetables commonly used by the homebrewer. Table 1 is a list of common fruits and vegetables that may be a source of cyanide. The brewer should be cautious when any of these are used. If the fruit or vegetable has already been

processed when purchased, it is in the brewer's best interests to find out the conditions of the processing to determine whether cyanogenic compounds may be present in the product.

So, in conclusion, here are the take-home messages in regards to cyanide and homebrewing:

1. Clearly, the less cyanide and cyanide precursors you ingest, the better off you'll be. Of course given the wide variety of sources, it is impossible to avoid it completely.

2. The human body can handle occasional consumption of small doses of cyanide arising from normal environmental exposure with no ill effects. However, regular consumption of even small amounts can lead to serious trouble.

3. When working with fruit, it is a good idea to remove all seeds before crushing and adding to your fermenter. Always avoid crushing these seeds with the fruit.

4. If using a prepared juice or extract, find out how your processor has handled this matter and watch out for products where seeds have been incorporated.

5. If you feel you need to have almond-like aroma and taste to round out your beer/mead/cider, consider adding a minimal amount of almond extract or almond liqueur.

We've tried to avoid scare tactics here due to the inherent complexity of determining quantities of cyanide across various fruit and extraction, individual differences of the consumer and the like. The bottom line is that we need to know more about our ingredients and try to moderate or eliminate that which is not healthy. We've all probably had more exposure to cyanide and other dangerous things than we know and, consequently must question whether negative effects have actually taken place. Nevertheless, a word to the wise will hopefully be sufficient. Remember, like everything, the dose makes the poison. As a certain FDA employee used to say, 'Our job here is to protect normal people, fools, and some damn fools—but not goddamn fools!' (Schneider pg 72). (continued on page 58)

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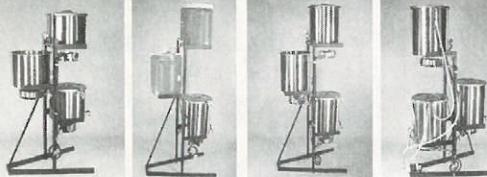
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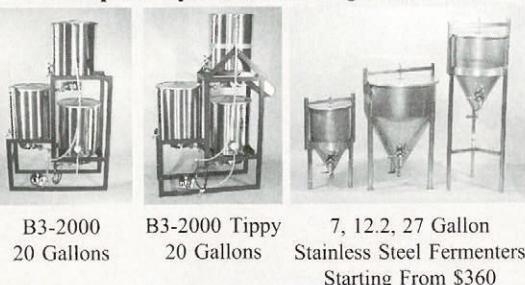
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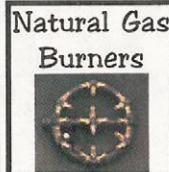


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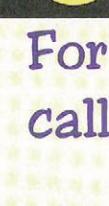
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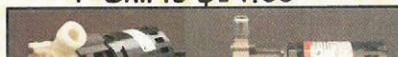


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# CATTALES'

A Cat's EYE VIEW of

# BREWING

**Editor's Note:** We recently asked veteran California homebrewer Jay Ankeney to share his tips for extract brewing with our readers. As it turns out, Jay was swamped with work, so he delegated the article to his favorite feline and assistant brewer, Phoebe. Fortunately, she did a great job and the article that follows is full of new and interesting approaches to homebrewing.

# *By Phoebe Ankeney*

**E**ver since my household brewmaster Jay wrote the beginners' "Easy Beer" booklet with Dan Dennis way back in 1985, he has had three mottos to guide his brewing procedures: A) Keep it simple, B) Keep it fun, and C) Keep it coming! That's why you will notice a marked absence of either hard work or measuring tools in his malt extract and mini-mash techniques. But I hope you don't confuse this with laziness or sloppiness. As a committed extract and mini-mash brewer, Jay has won more than 70 awards in AHA sanctioned competitions over the years using these tips.

Of course, Jay has enjoyed participating in many all grain brews as a member of two homebrew clubs, The Strand Brewers and The Maltose Falcons. He has often mentioned how much respect he has for people who will devote a whole, sweaty, steamy day just to brew up a batch of beer. He's glad somebody has the space and patience to keep up the tradition—just as long as it's somebody else.

So let me share some of the extract brewing tricks Jay and his brew partners have developed over the years as we purr our way through a typical malt extract and mini-mash brewing process. I'll also steal some of the more successful recipes he has developed since, after one of his homebrew students earned a 2<sup>nd</sup> in a competition in the same style where he was embarrassed to rip off a 1<sup>st</sup> place—he likes to say he has "pretty much retired from competition" (In truth, I think he's just too lazy to fill out the entry forms).

## **Countdown to Blast Off** **Enter it into the Log**

Notice how Captain Kirk always begins an adventure on the Starship Enterprise by logging in the stardate? Well the first thing beginning homebrewers should reach for is not the

# **WITH EXTRACT**

can of malt extract. They should grab a notebook, even a cheap spiral bound memo book. In fact, the next few steps should be done a few days before you're scheduled to brew. "Do anything you want, just take notes on it!" is the philosophy behind every brewing session. At least mark down the date of brewing, the ingredients used, the length of the boil, the kind of yeast pitched, and when the batch was bottled. Other details, such as what you were imbibing during the brew, can also be useful. But there is no point in discovering El Dorado if you haven't kept a map.

The notes from Jay's favorite recipe for Porter that took Best of Show at the first L. A. County Fair homebrew competition and a First Place at the Dixie Cup in the same year, read:

- 1 can (3.3 lbs or 1.5 kg) Coopers Bitter liquid malt extract
- 1 bag (3 lbs or 1.33 kg) Brewmaster dark dry malt extract (for the wort)
- 1 cup (0.25 liter) chocolate malt
- 1 cup (0.25 liter) dark caramel malt (for the mini mash)
- 2 oz. (57 grams) pelletized Bramlings hops—boiled 30 minutes
- 1 oz. (28 grams) pelletized Saaz hops—boiled 20 minutes
- 2 oz (57 grams) pelletized Hallertauer hops—boiled 10 minutes
- Ale yeast
- 1 cup brewers sugar (to prime)

That's not a lot of work and the only measurement is the cups of grains and the hops. But notice that even for a beer as dark as a porter, half of the extract used (the Coopers) is actually very light.

### Taming the Yeasty Beasties

Yeast can be the most important ingredient in a good extract batch, and with yeast cleanliness is all important. Luckily, today we have many good sources of pure yeast, from the Wyeast smack packs to the White Labs vials. But if you are willing to make a starter, there are other options for generating good pitchable yeast.

Many brewers forget that if you have a great batch of bottled homebrew on the shelf, you can use it as a source of yeast. Start by pouring off most of the beer. Then swirl the remaining contents of the bottle to re-suspend the yeast sediment and dump it all into your starter wort. Using this technique, you can self-perpetuate your favorite yeast.

Also, you can save a lot of money over the regular cost of liquid yeast if you will learn how to make your own yeast starters from agar slants. These are available from some homebrew stores and via mail order. The slants look just like little test tubes with white stuff growing on top of the slanted agar pool inside. All you do is sanitize a small wire loop by holding the tip of the wire over a gas flame and then carefully scrape out a glob of that white stuff. Then swirl the yeasty glob into a jar of sterilized wort, close it and within two to three days and you should have a happily foaming yeast starter.

### The Big Mouth

It's very handy to have a few containers of sterilized wort set aside for when you need to make a yeast starter. Sure you could use Grandma's old jelly jars, but we've found that empty Mickey's Big Mouth bottles serve just as well. You can get them anywhere, they are cheap, and recycling the bottle is probably the best thing you can do with Mickey's Big Mouth beer. Just save the screw on cap after you pour out the beer, then fill the bottle one-third full with water and one-third full with wort. Next, put the bottle(s) in a saucepan of boiling water to sterilize. Once cooled, a prepared bottle of sanitized wort can wait patiently in your refrigerator until needed. Make sure to warm each bottle to room temperature before introducing the yeast.

### Getting Ready for The Big Chill

Whether using extract or all grains, it is vital to cool the boiling wort down to room temperature or cooler quickly after the end of the boil. Some brewers use immersion chillers, others counter flow devices. Each of these violates another of Jay's dictums that as few outside things as possible should touch the wort to reduce risk of infection. So before your next brew, try making a sterile ice cube to cool your wort. Take a 6 to 8 cup Tupperware jar and fill it close to the brim with boiling water from a tea kettle. Put on the lid. Then put the lid on again after the steam pops it off. Once it reaches a reasonable temperature stick the plastic container in the freezer and within a day you will have a sterile chunk of ice that will quickly bring your wort down to pitching temperature. No muss, no fuss, and most importantly, no extra equipment to clean.

### The Great Day

#### *The Stuff of Dreams*

As the brewing day approaches, and you have your yeast starter, your sterile ice cube and that all important notebook ready, it's time to consider the recipe.

You can get as complex as you want, but we've found that 5 pounds (2.26 kg) of light malt extract along with 2 pounds (0.9 kg) of adjuncts makes a good basic recipe for pale ale styles. For darker beers, we go with 6 pounds (2.72 kg) of dark malt extract with 1



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to 2 pounds (0.45-0.9 kg) of dark roasted grains. Once you get some experience with different extract brands, you can pretty much go with the style on the label for the brands you've learned to like. However, whether the malt extract claims to be hopped or not, you will probably want to boost the hopping with your own selection. These days some extracts include hop oil that will give some hop character to the

beer if it is made with little or no boiling. But assuming that you will boil your wort for an hour or more, the hop oil included in the extract will be boiled off and have little, if any effect. So do your own thing using the extract as a starting point. Just keep notes!

For example, the recipe for Jay's entry into the 1997 Pacific Brewers Cup that won a First Place mug was:

- 1 can (4 lbs or 1.8 kg) Alexander's Light liquid malt extract
- 1 lb. (0.45 kg) Coopers Draft liquid malt extract
- 1 lb. (0.45 kg) Brewmaster Dry Rice extract (for the wort)
- 2 lbs. (0.9 kg) Munich Light Grains (for the mini mash)
- 1 oz. (28 grams) pelletized Chinook hops—boiled 30 min.
- 1 oz. (28 grams) pelletized Hallertauer hops—boiled 20 min.
- 0.5 oz (14 grams) pelletized Hallertauer hops—boiled 10 minutes
- 0.5 oz (14 grams) pelletized Hallertauer hops—added at end of boil

#### **Adding "Junk"**

Our overall approach to brewing is to use malt extracts as a base and do a mini-mash with grain or rice adjuncts to fine tune things. Most grains, with the main exception of the crystal styles, require a mini mash before adding them to the wort. Standard brewing practice calls for the grains to be mixed with hot water to achieve a mash temperature of 145° F to 155° F (63° C to 68° C). This technique will probably make great beer, however, we prefer a simpler method. Here's what we do: put the grains in a Dutch oven-style pot, cover them completely with tap water, heat the pot to slowly raise the temperature, stopping just before it begins to boil. When this step is complete, put a clean pasta colander or larger strainer over your brew pot and rinse, or "sparge", the grains with water from a boiling tea kettle into the wort. Purists will argue that this has the potential to extract tannins from the husks, but we have never had a problem and find that we get a very acceptable extraction with little effort.

#### **Divide and Conquer**

It usually takes about four hours to leisurely brew up a batch of malt extract beer. But homebrewing should be a constant asset to life, not an occasional chore. Remember Jay's first dictum: A) Keep it simple, B) Keep it fun, and C) Keep it coming? You can make brewing easier by splitting the process into two evening sessions. On the first night, bring the wort to a boil and add your grain adjuncts and the bittering hops. (continued on page 58)

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# For Geeks Only

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

## Calibrating Judges at Remote Locations: The Palate Calibration Project

By Edward W. Wolfe & Thomas R. Leith

*Editor's Note: This text has been edited to meet tight space constraints. To see the full text of the article and all accompanying charts, see [www.beertown.org/homebrew](http://www.beertown.org/homebrew).*

Although the Beer Judge Certification Program (BJCP) does an outstanding job of providing prospective judges with the knowledge base needed to become a competent beer judge (BJCP, 1998), there are currently few opportunities for prospective judges to receive training that will help to develop their tasting skills. This article describes the results of an attempt to develop such a training program—the *Palate Calibration Project*.

The hypothesis behind the *Palate Calibration Project* was that judges might learn to taste beers more consistently (as a group) if they are given the opportunity to have regular practice tasting, discussing and analyzing beers. To address the needs of the amateur beer judging community, we developed a tasting skill training program based on distance learning models employed in rater training programs used in the food industry and by testing companies.

In order to acquire and distribute a consistent source of samples to far flung judges, we contracted with a "Beer of the Month Club" to ship beers to seven sites around the country. For about \$25 each month, the company delivered four bottles each of three varieties of beer to the coordinators of each site participating in the project. Since the beers came from a common origin and were

delivered by the same means in about the same amount of time, this seemed to be a good solution.

### Method

The *Palate Calibration Project* included 44 beer judges from seven sites representing homebrew clubs in 6 states (California, Georgia, Iowa, Illinois, Michigan, and Missouri). The judges represented a range of experience levels (Apprentice—34%, BJCP Recognized—32%, BJCP Certified—25%, and BJCP National judges—9%). The ratio of males to females was 9:1.

Site coordinators were instructed to present the beers in the same sequence and to present the beers at an agreed upon temperature. Tasting sessions at the six sites were scheduled independently, but the results were submitted for analysis by the first of the following month. During the tasting session, the participants used standard AHA competition score sheets. Each participant evaluated the beers independently of the other participants until all three samples had been evaluated. When everyone was finished scoring the beer, the scores and comments were compared and discussed, but no changes were made to anyone's score sheet.

After each tasting session, score sheets were analyzed and summary statistics returned to each site coordinator. At the next tasting session, these results were discussed and saved bottles of the same beers were re-tasted.

### Summary Sheets

The summary sheets that were returned to participants following each session contained these features for each beer:

- the overall average score, maximum, minimum, range, standard deviation, and number of judges for each beer
- the average and range for each subscore category (i.e., aroma, appearance, flavor, body, overall impression)
- the percentage of judges assigning scores falling within specific ranges
- the percent of judges within 3.5 points of the mean score (note that 7 points is usually considered to be the largest acceptable range for a particular beer in most homebrew competitions)
- the number of judges checking specific comment boxes on the score sheets

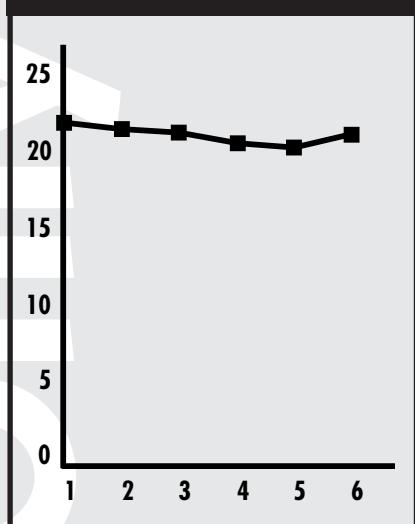
### Results

Descriptive statistics for the 18 beers that judges tasted over the six tasting sessions are shown in Table 1. These figures show that the variability *within a particular beer*



**Are You A Geek Too?** *Zymurgy* is looking for contributions for the "For Geeks Only" section. If you have studied a particular area of brewing science using in-depth library research or experimental data and would like to see the results published here, let us know by contacting Ray Daniels at [ray@aob.org](mailto:ray@aob.org) or via the mail address listed in the masthead on page 2.

**Figure 1: The Average Range of Scores across the Six Calibration Sessions**



decreased as the project continued (i.e., the range of scores for each beer got smaller)—an indication that judges' evaluations were more consistent as time progressed. For example, the average range for the first session was over 22 points while the average range for the final session was 17 points. Interestingly, the variability between beers

increased in general over the course of the project. That is, the range of average scores assigned to the three beers in a session got larger—an indication that judges were better able to discriminate between beers of higher and lower quality toward the end of the program.

Table 1 shows that the size of the disagreements between the most extreme scores for each beer decreased as the program continued. The largest disagreement in Session 1 was 27 points on the AHA's 50-point scale (over half of the possible range of scores). The largest disagreement in the final session was only about 19 points—a 30% decrease in the range. Figure 1 emphasizes this trend by showing a plot of the magnitude of the average range across the six tasting sessions.

In this study, Non-BJCP judges tended to assign the highest scores across all judging sessions. Certified and National judges assigned the second highest scores, and Recognized judges assigned the lowest scores overall. As for the range of scores, Certified and National judges showed the best agreement, as a group, with Recognized and Non-BJCP judges showing progressively more disagreement. All groups showed better

agreement as time progressed, but Non-BJCP judges showed the largest gains in agreement—an indicator that they were probably better served by the program.

## Conclusions

The data collected during the *Palate Calibration Project* suggest that agreement among amateur beer judges can increase (at least among motivated individuals like the ones in our program) through an educational program that incorporates tasting, feedback, and discussion among the participants. The success of the *Palate Calibration Project* demonstrates that it is possible to create a program that requires a minimal amount of time, has reasonable cost, is enjoyable, and provides feedback to help improve judging skills and arrive at consensus concerning numerical scores. The data show that all judges tended to show better levels of agreement near the last session of the program, and Non-Certified judges showed the most improvement.

In summary, we believe that the *Palate Calibration Program* demonstrated that a degree of convergence in scores assigned to beer samples can be achieved among judges through training. The data suggest to us that an educational program, say the BJCE (Beer Judge Continuing Education) program, if organized on a national level, could provide a real service to homebrewers and judges. Unfortunately, such an undertaking would probably be more work than even a dedicated group of volunteers would want to do. It is our hope that the BJCP or the AHA might institute such a program by contracting with one of the many beer-of-the-month services to supply samples of classic styles. It may even be possible to contract with a testing or data processing company to tabulate the results, and mail summary reports back to participants. We expect that such a program could be put together for \$50 - \$75 per month per site, and that five or six people could split the cost among themselves.

**Tom Leith** is a member of St. Louis Brews and usually an all-grain brewer. He organized the calibration project to explore the causes of the wild disparity of scores assigned to draft Michelob at a competition in Normal, Illinois.

**Ed Wolfe**, a National judge in the BCJP, has been homebrewing for 8 years. He and his wife, Carol, have won bronze, silver, and gold

**Table 1: Descriptive Statistics for Beers in Each Calibration Session**

Style	Session	Average	Maximum	Minimum	Range
American Premium Lager	1	33.23	42	22	20
American Pale Ale	1	30.86	41	21	20
Herb Beer	1	32.07	45	18	27
Bohemian Pilsner	2	30.21	41	22	19
American Pale Ale	2	24.85	36	14	22
India Pale Ale	2	34.58	42	18	24
American Pale Ale	3	29.41	39	20	19
American Pale Ale	3	26.79	38	17	21
Porter	3	31.44	40	19	21
Bohemian Pilsner	4	29.41	41	21	20
Vienna Lager	4	29.64	40	19	21
American Pale Ale	4	26.33	34	20	14
Vienna Lager	5	32.35	44	23	19
English Pale Ale	5	29.61	36	21	15
Traditional Bock	5	22.00	30	15	15
English Pale Ale	6	32.39	40	25	15
American Pale Ale	6	26.33	41	22	19
American Pale Ale	6	22.94	31	14	17
<b>Average Across Sessions</b>		<b>27.64</b>	<b>38.94</b>	<b>19.50</b>	<b>19.33</b>

medals in the AHA National Homebrew Competition and a first place in the Mazer Mead Competition. When he's not homebrewing, Ed researches and teaches about the statistical analysis of ratings at Michigan State University.

## Achieving Uniform Mash Bed Temperatures Using a SABCO RIMS System

By Geoffrey Bove, DC, Ph.D.

Not long ago, I bought a used SABCO BrewMagic system in order to join the ranks of all-grain brewers. The BrewMagic system is a micro-mini brewery, composed of three converted kegs, a welded stand with three gas burners, and quite a bit of plumbing (the system can be seen at <http://www.kegs.com/>). The plumbing moves wort out of the mash kettle, sends it to a heater that is controlled by a thermister<sup>1</sup>, and returns the wort to the top of the mash kettle. In virtually all respects, the system is heavy-duty and well constructed.

As a scientist, I liked the idea of having tight control over mash temperatures—especially since there seem to be so many other uncontrollable variables in brewing. The design of the RIMS system is supposed to maintain the temperature in the mash very accurately. Once I had done a couple of test runs and appeared to have the system operating correctly, I decided to evaluate this temperature control aspect of the system.

On my fifth brew, I used an electronic lab thermometer to check mash temperatures. The results were erratic at best, with variations of plus or minus 15° F (8° C) around the set point. Specifically, when the thermometer on the wort outflow tube was steadily reading 152-153° F (67° C), tem-

peratures in the mash varied from 140-165° F (6-74° C) depending on the location and depth of the probe. Needless to say, this did not meet my expecta-

tions, so I decided to do some further evaluation and fine-tuning. This paper reports the results, which demonstrate that the SABCO RIMS system, when set up and operated properly, lives up to its claims of consistent mash temperatures.

### Calibration

The following probes were placed within 1 cm of each other in a 1 liter beaker filled with water: -2 laboratory thermometers, the RIMS system thermister hooked to its digital controller, a K-type thermocouple<sup>2</sup> linked to a digital thermometer and a SABCO stem thermometer.

The beaker and probes were placed on a stirring hot plate and slowly heated to 170° F (77° C) while being stirred. The laboratory thermometers remained within 0.5° C of each other throughout the range. The digital thermometer and thermister were calibrated to the laboratory thermometers, in the typical brewing range of 140-170° F (60-77° C). The controller read 2° F (1.1° C) low, and this was adjusted using the offset. The bath was cooled and the second trial began. Again, the laboratory thermome-

ters were consistent. At 140° F (60° C) all four readouts were consistent, and this consistency was retained in the range of 140-170° F (60-77° C). The measurements were repeated on a subsequent day, and remained stable.

### Checking Mash Temperatures

The SABCO BrewMagic was set up according to the suggestions that came with the system. All controller settings were verified and correctly set using vendor manuals. The only change in the system was that the controller's thermocouple was placed at the outflow of the mash vessel in the well that is normally occupied by the SABCO thermometer (see Figure 1).

Twenty one pounds of crushed malt were mixed with seven gallons of 150° F (66° C) water, resulting in 1.5" of water over the grain bed, after the grain had settled. In accordance with the recommendations of the BrewMagic owner's manual, the RIMS outflow tube was set to a "gentle stream" as estimated by the wort being ejected about 3 inches from the tube if held horizontally. The return flow was placed in the layer of water over the grain

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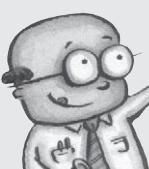
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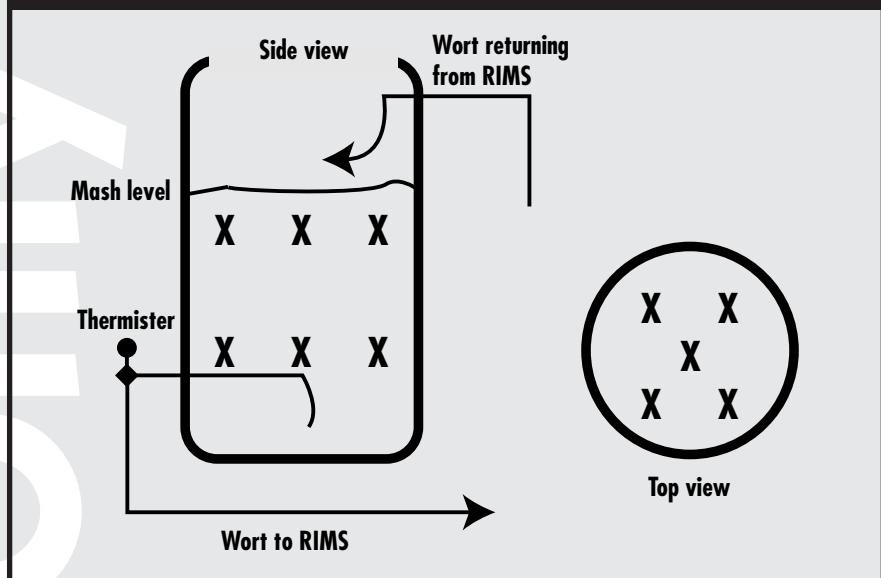
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**Figure 1: Mash tun with RIMS, showing location where temperatures were taken (X)**



so that it made a slight whirlpool. Particles floating on the outer edge of this whirlpool took about 15-20 seconds to complete one full revolution of the vessel.

The temperature of the mash was raised to 151° F (66° C) using the RIMS heater and the bottom burner (set low). After this set point had been reached (approximately 10 minutes), the RIMS was continued for 30 minutes. The RIMS controller remained set at 151° F (66° C) for the duration of the experiment. The digital thermometer probe was then used to take 10 temperature readings. The ten readings were made by sampling each of five locations (center and four

quadrants) in the mash at two different depths (three inches and eight inches from the surface). Each set of 10 measurements is called a trial. For this study, three trials were performed over 30 minutes.

### Results

The data recorded during this experiment indicated a highly consistent temperature throughout the grain bed. In each trial there was no more than 0.7° F (0.4° C) between minimum and maximum values of the ten temperatures recorded from the grain bed. This indicates a highly consistent temperature throughout the grain bed. The findings expressed as means and standard deviations, were:

Trial	Mean	SD
1	153.2	0.21
2	153.0	0.22
3	152.5	0.09

These data also show that the mean temperatures of the individual trials were within 1° F (0.6° C) of each other indicating that the system held a consistent temperature during the 30 minute period. Although the differences between trials were statistically significant, this was because of the very small variation within each trial (See Figure 2).

Another observation of note was the time needed to achieve equilibrium within the mash vessel when the temperature was raised to mash-out. After full conversion the

mash temperature was raised to 165° F (74° C) by raising the set-point of the controller and also by using the burner. It took approximately 10 minutes for the mash output thermocouple to reach 165° F (74° C), then another 10-12 minutes before the bulk of the mash achieved this temperature.

### Discussion

When setup and operated properly, the BrewMagic system lives up to its claims of maintaining homogeneous mash temperatures.

As indicated during the mashout section, it may take some time for the entire mash bed to reach a uniform condition when making major changes (> 10° F or 6° C) in the mash temperature. However, this experiment shows that when the mash is equilibrated at saccharification temperatures, the system will maintain temperatures within 1° F for 30 minutes and perhaps longer.

The thermocouple or thermometer at the input to the RIMS system should probably be calibrated by each user. The controller has an offset feature, and the approximately 2° F (1.1° C) difference observed in this experiment can be accommodated by resetting the controller to read high by an additional 2° F (1.1° C).

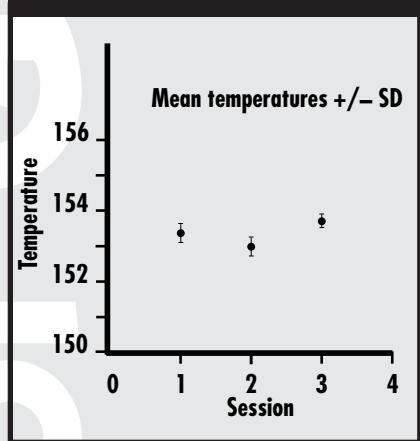
On the operational side, the swirling action in the wort over the grain bed is essential for even heating. My initial trial which showed a wide fluctuation in mash bed temperatures employed a different procedure—in part because the importance of this step was not clear from the SABCO manuals. I found that achieving the proper surface whirlpool required a lot of fiddling and eventually the use of a woodworking clamp. Thus, users must pay close attention to the RIMS outflow orientation in order to achieve uniform mash temperatures.

**Geoffrey Bove** has been brewing for 15 years. While he likes most brewed liquids, he especially likes highly hopped ales. As a neurobiologist, he studies pain mechanisms. He also is an avid sailor.

<sup>1</sup>A thermister is a device that changes its resistance linearly with temperature.

<sup>2</sup>A thermocouple consists of two metals that are dissimilar in their expansion properties. When temperature changes, the metals shear at their interface, creating electrical current.

**Figure 2: Mash temperature means and variation, 3 trials**



BY CHARLIE PAPAZIAN

# The Pride of a Brewer

The past 18 months has taken me on journeys, meeting and talking with homebrewers and beer enthusiasts in over 15 states. Other travels have taken me farther afield in the quest of not only understanding the brewing world we live in, but why it is we pride ourselves as brewers. We do, don't we?

I recall my origins as a brewer (the details of which you may have already read in the introduction to my book, *The Home Brewers's Companion*) and to this day there dwells in me a certain undefined pride, of being knowledgeable in the brewers' craft. I'm sure that it dwells in the soul of every brewer, yet the fact that it dwells doesn't necessarily easily define its presence. Before I get too esoteric let me back into my, and probably your own history.

Remember the message most of us heard as we embarked on our first batches of beer? "It's easy." "Anyone can do it." So we embarked. For all its simplicity, we found immense satisfaction and enjoyment from the process of learning how and actually making beer. Yes, it was true. With the availability of information, quality ingredients and convenient packages of malt extract and kits anyone can make beer.

But the mystery about our pride as continuing brewers remains. You realize that beyond the simplicity of beginning to homebrew, there is a knowledge that emerges within every brewer. Everywhere in the world, whether we are amateur or professional brewers, we build upon our experiences and develop a skill that no one can ever take away. Those skills and worldly knowledge have been shared and have evolved for over 5,000 years. Whether you have been brewing for one year or over twenty, the life skills you learn by brewing is not a simple-anyone-can-do proposition. By becoming and continuing as a brewer you have become someone special; someone who not only gains



Papazian as he is "enthroned" into BierConvent International where he joins August Busch III to become the second American member.

experience, but also uses it to craft works of art and science for authentic enjoyment. This is a rarity in today's worldview of values. Despite the trends toward speed and convenience, brewers are of a special breed. They are able to experience the pride of accomplishment and mastery of self satisfying skills that no one can ever deny or take away.

So we know it is simple to become a homebrewer. Yes, anyone can do it. But to brew and develop our own knowledge of the craft over so many years, this is something very special. It is not easy to do. Those of us who endeavor to brew are of a worldwide fraternity/sorority. We take the time to brew. Can we take the time to cherish the hard earned insights we have gained as brewers? Those that do not brew can never know what we know about the blending of life sciences, arts and experiences. Take pride in your endeavor as a homebrewer. You've earned it.

## Reflections

Four years ago (1996) I was at Larry Bell's Kalamazoo (Michigan) Brewery. It

was one of those domestic homebrew/craft brewing journeys I continue to take. Among American working people, homebrewers, beer enthusiasts, jeans, sneakers, rhinestones, a good cigar, basement beer bottle collections, a starlit night and passing fog I lay sprawled on the damp grass listening to the live music enjoying craft and homebrewed beers in the garden that is Larry's. Nothing seems to me to be more genuine.

One week later I found myself crossing a castle moat, entering what appeared to be a crumbling ruin, a lone tower protruding into the sky. Having entered, there are thick walls that surround the circumference with 3-foot deep window wells allowing light into each balcony. The narrow spiraled staircase winds and winds and winds through four or five enormous levels of rooms, each decorated with the time of the 15<sup>th</sup> century. The floorboards creak. The ceilings are tall and airy. There are gypsies in the attic. Jesters and musicians wander in the spirit of the time. The tall grand mirror in the second floor banquet room is smoked with gray film.

I am in the countryside just outside of Amsterdam celebrating my enthronement into the BierConvent International. Dinner is served over a period of three hours. Jenever and beer flow abundantly.

BierConvent International is an international organization, based out of Munich. I was invited by Prinz Luitpold von Bayern as the second American to join (the first was August Busch, III). BCI's members are not only brewers, but people of many backgrounds embracing quality, beer apprecia-

tion, and the sensitivity to the humanity and international pride portraying what beer has always meant to be.

At my enthronement I reverently sit and watch from the front row, the enthronement of others, including the president of Heineken and Grolsch. Our ceremonies take place inside a massive area of what was once a church cathedral in Amsterdam. I sit among the hundreds gathered as though attending a wedding. A pianist plays classical music. A string quartet plays Schubert

and Mozart. I stare in disbelief at the color patterns of the immense and extraordinary flower arrangements, in the balconies high above; a bright spotlight intensifies the colors. There is an imposingly ridiculous red throne in front of me at center stage.

At my enthronement they speak of my background and comment that if the BCI had not been founded in the 1960s, there's no doubt that Charlie Papazian would have founded it in 1996. The background is over and I turn to receive my medallion and accompanying neck ribbon and drink from a very large pewter mug a long draft of brew. The grand pianist bangs away in dramatic fashion as I swallow, and swallow, the beer dribbling down the right side of my beard onto my tuxedo—I just keep swallowing. It tastes great, my head tilting skywards, the deep pewter mug trailing off into darkness. As I near the finish my eyes look beyond the beer. High, very high above is a huge gold gilded domed ceiling, arching toward the center in grandeur. There in the middle at the highest point, beyond the chandeliers, the gold leaf buttresses, the stained glass windows, enormous flower arrangements, an impending belch and the surrounding grandeur are two tiny balloons. No one notices but me. Mickey Mouse and Donald Duck are watching over us in their helium-inflated gaze. There is a twinkle in my eye. Nothing seems to me to be more genuine. I finish the nectar that helped bring me here and everywhere.

The twinkle continues as I realize with the pride every homebrewer knows, that it is all the same but different.

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

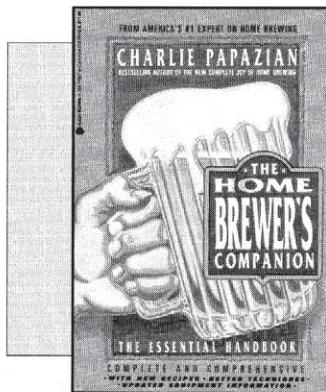
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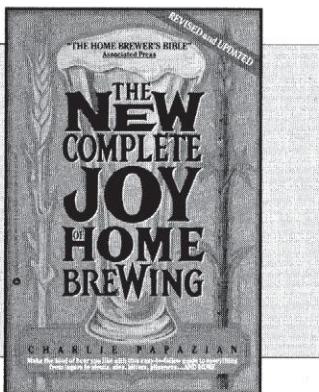


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- 2 3.3 lb cans (3 kg total) pale/light malt extract syrup
- 1 lb. (0.45 kg) English crystal malt (15 to 20-lovibond)
- 1 lb. (0.45 kg) roasted barley
- 0.5 lb. (225 g) black malt
- 0.25 oz. (7 g) First Gold (2 HBU/56 MBU) whole hops—60 minutes boiling
- 0.40 oz. (11 g) Kent Goldings (2 HBU/56 MBU) whole hops—60 minutes boiling
- 1.25 oz. (35 g) Willamette (6 HBU/168 MBU) whole hops—60 minutes boiling
- 0.25 oz. (7 g) Cascade (1.4 HBU/39 MBU) whole hops—60 minutes boiling
- 0.25 tsp powdered Irish moss
- 0.75 cup (180 ml measure) corn sugar (priming bottles) or 0.33 cups (80 ml) corn sugar for kegging
- Irish Ale Yeast—your favorite brand of liquid culture
- Original gravity 1.038-1.042 (9.5-10.5 B)
- Final gravity 1.012-1.012 (3-3.5 B)
- IBUs - about 30
- Approximate color: 46 SRM (92 EBC)
- Alcohol: 3.7% by volume
- Apparent Yeast Attenuation: about 70%

**HBU** = % alpha acid rating of hops multiplied by ounces = Homebrew Bittering Units

**MBU** = % alpha acid rating of hops multiplied by grams = Metric Bittering Units



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Add the crushed roasted barley, black and crystal malt to one gallon (3.8 l) of 160° F (71° C) water. Let steep for 30 minutes. Afterward strain out the spent grains, sparge with hot water and collect the liquid extract. Add 1 gallon (4 l) additional water, the malt extract syrup and all of the hops. Bring to a boil and continue to boil for one hour. When 10 minutes remain add Irish moss. After a total wort boil of 60 minutes turn off the heat. Then strain out and sparge hops and direct the hot wort into a sanitized fermenter to which 2 gallons (7.5 l) of cold water have been added. If necessary add additional cold water to achieve a 6-gallon (23 l) batch size. Add a starter culture of yeast when temperature of wort is about 70° F (21° C). Preferably ferment at 65-72° F (18-22° C) range for about 7-12 days or until fermentation is complete and appears to clear and darken. For best

results “cellar” or age at 50° F (10° C) for 2-3 days to help drop yeast out of suspension—but this is not at all crucial to the quality. Bottle with corn sugar. Age and carbonate/condition at temperatures between 60 and 70° F (15.5 - 21° C) until clear (about one week).

Dusty Mud will quench the thirst and revive the spirit of simplicity and quality brewing. Teach a friend the way you first learned to brew—after all, you’re still brewing and enjoying it!

World traveler Charlie Papazian is the founding president of the Association of Brewers and the author of numerous bestselling books on homebrewing. His most recent books are *Home Brewers Gold* (Avon, 1997), a collection of prize-winning recipes from the 1966 World Beer Cup Competition, and *The Best of Zymurgy* (Avon, 1998) a collection of the best articles and advice from 20 years of *Zymurgy*. 

**HOMEBREW BITTERING UNITS (HBUs)** are a measure of the total amount of bitterness in a given volume of beer. Homebrew Bittering Units can easily be calculated by multiplying the percent of alpha acid in the hops by the number of ounces. For example, if 2 ounces of Northern Brewer hops (9 percent alpha acid) and 3 ounces of Cascade hops (5 percent alpha acid) were used in a 10-gallon batch, the total amount of bittering units would be 33: (2 x 9) + (3 x 5) = 18 + 15. Bittering units per gallon would be 3.3 in a 10-gallon batch or 6.6 in a five-gallon batch, so it is important to note volumes whenever expressing bittering units.

**INTERNATIONAL BITTERNESS UNITS (IBUs)** are a measure of the bitterness of a beer in parts per million (ppm), or milligrams per liter (mg/L) of alpha acids. You can estimate the IBUs in your beer by using the following formula:

$$\text{IBU} = \frac{\text{ounces of hops} \times \% \text{ alpha acid of hop} \times \% \text{ utilization}}{\text{gallons of wort} \times 1.34}$$

Percent utilization varies because of wort gravity, boiling time, wort volume and other factors. Homebrewers get about 25 percent utilization for a full one-hour boil, about 15 percent for a 30-minute boil and about 5 percent for a 15-minute boil. As an example, 1 ounce of 6 percent alpha acid hops in five gallons of wort boiled for one hour would produce a beer with 22 IBUs:

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

**METRIC BITTERNESS UNITS (MBUs)** are equal to the number of grams of hops multiplied by the percent alpha acid.

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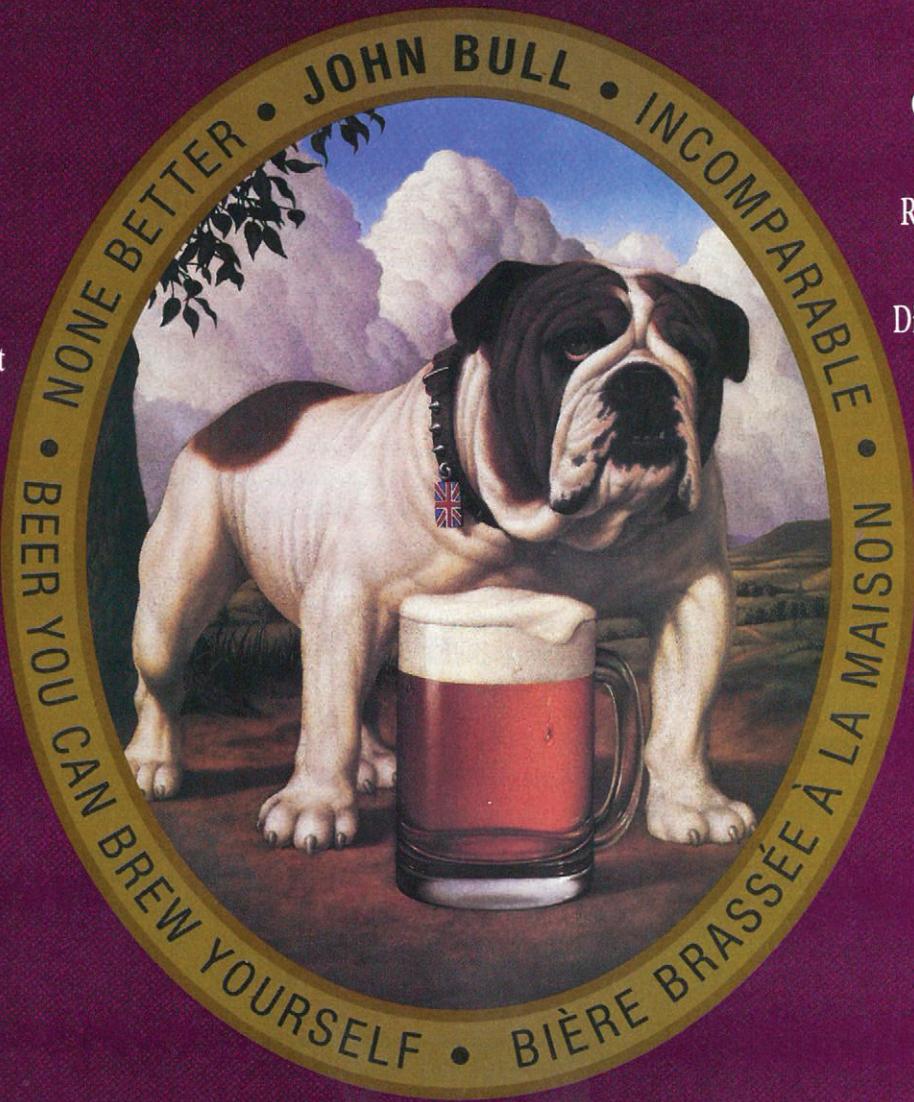
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BY AMAHL TURCZYN

**T**hese are the first of the silver and bronze medal winners from the 2000 National Homebrew Competition. It's always a pleasant surprise to see more female brewers (brewsters, I suppose) winning medals at the NHC. Husband and wife teams claimed both the meadmaker of the year and homebrewer of the year awards, and Nancy Samson, with her husband Wes were also gold medalists. Cindy Goldstein and Susan Ruud are also veteran brewsters, and have been winning medals in the NHC for several years.

In this edition of *Winners Circle*, Joanne Anderson proves her brewing skill with "Old Smokey," a Bamberg-style Rauchbier. A Canadian homebrewer who lives in Collingwood, ON, Joanne is a retired emergency room nurse who began homebrewing about 15 years ago after becoming bored with winemaking. After winning six awards in the Great Canadian Homebrew Competition in May, she went on to capture a bronze medal for Belgian and French ales, and a silver medal for "Old Smokey." Perhaps this signals a comeback from the old days when makers of beer were primarily women.

Hats off to all the following winners, male or female!

## Barley Wine and Imperial Stout



### BRONZE MEDAL

#### AHA 2000 NATIONAL HOMEBREW COMPETITION

Arlin Karger, Moorhead, MN

"Old Bailiwick English Style Barleywine"  
English-Style Barley Wine

Ingredients for 5 US. gal (19 L)

- 18 lb pale malt (8.1 kg)
- 2 lb crystal malt (.9 kg)
- 0.25 lb biscuit malt (.1 kg)
- 0.25 lb wheat malt (.1 kg)
- 0.25 lb aromatic malt (.1 kg)
- 0.25 lb caramel malt (.1 kg)
- 2 oz Galena hop pellets, 12% alpha acid (57 g) (120 min.)
- 2 oz Target hop pellets, 8% alpha acid (57 g) (120 min.)
- 1 oz Goldings pellet hops (28 g) (5 min.)
- 20 oz English brewery ale yeast forced CO<sub>2</sub> to carbonate
- Original specific gravity: 1.122
- Final specific gravity: 1.050
- Boiling time: 120 min.
- Primary fermentation: 5 days at 70° F (21° C) in glass
- Secondary fermentation: 30 days at 70° F (21° C) in glass

### Brewer's Specifics

Mash grains at 155° F (68° C) for one hour.

### Judges' Comments

"Nice mix of malt with hops. Good blend of fruitiness. Good warming effect."

"Hop flavor appropriately balanced. Finishes dry."

## Porter



### SILVER MEDAL

#### AHA 2000 NATIONAL HOMEBREW COMPETITION

Chris Kaufman, Derby, KS

"Old No. 9"  
Brown Porter

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

- 8 lb DWC Pilsen malt (3.6 kg)
- 1 lb Hugh Baird Munich malt (.45 kg)
- 1 lb Briess 60° crystal malt (.45 kg)
- 0.5 lb Hugh Baird Vienna malt (.23 kg)
- 0.5 lb DWC Cara-Vienna malt (.23 kg)
- 0.5 lb Hugh Baird chocolate malt (.23 kg)
- 1 oz Tettnanger whole hops, 2.7% alpha acid (28 g) (60 min.)
- 1 oz Tettnanger whole hops, 2.7% alpha acid (28 g) (25 min.)
- Wyeast No. 1318 London III ale yeast
- 2.75 vol forced CO<sub>2</sub> to carbonate
- Original specific gravity: 1.064
- Final specific gravity: 1.016
- Boiling time: 1 hr. 50 min.
- Primary fermentation: 20 days at 62° F (17° C)

### Brewer's Specifics

Mash grains at 153° F (67° C) for 60 minutes. Raise mash temperature to 165° F (74° C) and hold for 15 minutes.

### Judges' Comments

"Fine, drinkable beer. Very nice example of style."

"Mild roastiness, drying in the finish...very enjoyable."

## Stout



### BRONZE MEDAL

#### AHA 2000 NATIONAL HOMEBREW COMPETITION

Curt Hausam, Salem, OR

"Sofa King II"

Foreign Extra Stout

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

- 20 lb pale malt (9 kg)
- 2.75 lb roasted barley (1.25 kg)
- 1.5 lb dark crystal malt (.7 kg)
- 1.5 lb chocolate malt (.7 kg)
- 1 lb Cara-Pils malt (.45 kg)
- 5 oz Golding whole hops,  
5% alpha acid (142 g) (60 min.)
- 3 oz Goldings whole hops,  
5% alpha acid (85 g) (15 min.)
- Wyeast No. 1028 London ale  
yeast
- 0.66 cup corn sugar (160 mL) per 5  
gallons (19 L) (to prime)
- Original specific gravity: 1.082
- Final specific gravity: Unknown
- Boiling time: 90 min.
- Primary fermentation: 8 days at  
68° F (20° C) in glass
- Secondary fermentation: 5 days at  
68° F (20° C) in glass

#### Brewer's Specifics

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

#### Judges' Comments

"Nice malt character, balance. Has a bread-like character to it."

"Good body, warmth—all smooth."

## European Pale Lager



### BRONZE MEDAL

#### AHA 2000 NATIONAL HOMEBREW COMPETITION

John Aichison, Northridge, CA

"Y2K Export"

Dortmunder Export

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

- 13 lb German pale malt (5.9 kg)
- 1 oz Northern Brewer pellet hops,  
8.1% alpha acid (28 g) (60 min.)
- 0.5 oz Saaz pellet hops, 4.4% alpha  
acid (14 g) (15 min.)
- Wyeast No. 2007 Pilsen lager  
yeast
- 2 vol forced CO<sub>2</sub> to carbonate
- Original specific gravity: 1.052
- Final specific gravity: 1.014
- Boiling time: 120 min.
- Primary fermentation: 12 days at  
48° F (9° C) in steel
- Secondary fermentation: 28 days  
at 48° F (9° C) in steel

#### Brewer's Specifics

Employ a two-step infusion mash with rests at 122° F (50° C) and 152° F (67° C) with a mash out at 170° F (77° C).

#### Judges' Comments

"Nice beer, good hop/malt balance with a touch of sweetness. Nice beer!"

## Smoked Beer



### SILVER MEDAL

#### AHA 2000 NATIONAL HOMEBREW COMPETITION

Joanne Anderson, Collingwood, ON, Canada

"Old Smokey"

Bamberg-Style Rauchbier

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

- 10 lb Weyermann smoked malt  
(4.5 kg)
- 2.8 oz chocolate malt (80 g)
- 1.4 oz Hersbrucker pellet hops,  
3.3% alpha acid (40 g) (90 min.)
- 15 oz Wyeast No. 2206 Bavarian  
lager yeast
- 0.75 c dextrose (177 mL) to prime
- Original specific gravity: 1.054
- Final specific gravity: 1.012
- Boiling time: 1 hr. 30 min.
- Primary fermentation: 6 days at  
70° F (21° C) in glass
- Secondary fermentation: 8 days at  
55° F (13° C) in glass

#### Brewer's Specifics

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

#### Judges' Comments

"A very drinkable beer that expresses the smoke well without being excessive."

"Very nice beer...could use a bit more malt."

**Amahl Turczyn is the associate editor of Zymurgy magazine.**



Every gold-medal winning recipe from the AHA 2000 National Homebrew Competition was printed in the 2000 September/October Zymurgy (Vol. 23, No. 5) "Winners Circle."

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# HOMEBREWER OF THE YEAR

Mickey & Vi Walker  
Fargo, ND  
Prairie Homebrewing Companions

## **Extract Rules!** (from page 23)

homebrew store "because it's likely to be fresher than what's in a can." He also stresses that if you use canned liquid extract, it's wise to look carefully for expiration dates, since "old, stale extract simply can't make a great beer."

Mark Tomusiaik's Belgian strong ale used liquid extract, plus specialty grains in a partial mash. He didn't sparge his grains, using only the first runnings. Interestingly he converted this recipe to all-grain later, "but it didn't turn out nearly as well. It's a little frustrating going from an expert extract brewer to a beginning all-grain brewer!"

Joe Newcomer normally brews all-grain, but woke up one morning with the urge to brew, so that winning batch he held until his starter was ready was a spur-of-the-moment brew. "I went to the store for the ingredients, and just did it." He used 4 lbs (1.8 kg) Munton & Fison extra-light dry extract and 2 lbs (.9 kg) of honey to make a honey pilsner. It was also his first time with this recipe, and he credits some of his success to the fantastic Hallertau hops he had on hand.

## **Study and Practice**

Everyone made a point of encouraging us to "treat every brew as an opportunity to learn something," in the words of John Adkisson. He said, "You have to keep thinking while you're brewing, because every batch can be a learning experience. You can also learn a lot from the feedback you get from your friends." John's secret tip for an easier competition win? "Watch what other brewers are making, then concentrate on other styles. You stand a better chance if you stay out of the big, busy categories."

Chris Lavoie went even further, and said, "I've probably read at least 20 books about brewing; I always want to learn as much as I can when I try something new." Chris was a little intimidated by *Zymurgy* when he first got involved in the hobby, but he says, "lately, it seems to have a really good balance, with enough for both beginners and more advanced brewers." Another great source of information for Chris was his former father-in-law, who had eight years of homebrewing experience.

## **Bottom Line**

Joe Newcomer recommends entering competitions "just for the entertainment value." He says, "It's lots of fun to compete, and the suspense of waiting for your results is enjoyable as well, even though the process of finding out if you're a winner seems to take so long." He also believes even a beginner isn't going to get too much criticism. "The first beer I entered was a black beer in the Pilsner category, but the judges didn't beat up on me; they simply noted that it was out of style and offered some suggestions."

So, what's the secret to making a championship beer from malt extract? There seem to be as many secrets as there are winning brewers, but hopefully these bits of advice will help you in your own brewing and competing efforts.

**Ed Westemeier has been a homebrewer since 1988. He's a technical writer who also writes about beer for various publications. He's amused by people who think they can tell the difference between beers made with extract or all-grain.**

## **Kit Beers** (from page 27)

for beers that have been finely crafted from scratch, this test shows that all brewers—no matter how advanced—should keep in mind that the simple extract kits can produce a nice product that even the most demanding of beer drinkers will enjoy. Given how simple these

beers are to make, I can only imagine that those who already use them will continue to do so and that those who don't would be happy to give them a try.

**Ray Daniels is the author of *Designing Great Beers* and several other books on brewing including the recently published**

*Classic Beer Style Series book, Smoked Beers. He is a long-time homebrewer and beer judge and a top graduate of the Siebel Institute's Diploma Course in Brewing. He is the founder and organizer of the annual Real Ale Festival in Chicago and serves as Editor-in-Chief for Zymurgy and The New Brewer.*

## **EXTRACT KIT BREW OFF—JUDGE BIOS**

**Tomme Arthur** is the Head Brewer at Pizza Port in Solana Beach, CA. He is a professed lover of Belgian and Real Ales who has been lucky enough to judge beers at the Great American Beer Festival, the Real Ale Festival in Chicago and various local homebrew competitions.

**Scott Bickham** has been brewing beer for nine years and has won more than 60 awards in homebrew competitions. He has been judging for seven years and is one of four Grand Master judges in the BJCP. He served as Exam Director of the BJCP for three-and-a-half years. By day he works in optical fiber development at Corning, Inc. His favorite styles to brew are lambic, altbier and bitter.

**Rex Halfpenny** is best known as publisher of Michigan Beer Guide. He is a BJCP Certified Beer Judge, BJCP Midwest Regional Representative, and has completed Siebel's Sensory Evaluation of Beer course. A homebrew-

er of eight years, he currently holds the position of Marketing Director for Rochester Mills Beer Company and the Royal Oak Brewery in Michigan.

**Steve Hamburg** is a longtime homebrewer who writes and lectures on beer subjects. As a self-described "bitter man," he has a particular interest and expertise in British beer styles. He is the co-founder and cellar-master of the annual Chicago Real Ale Festival and has judged at the Great British Beer Festival. He is a National judge in the BJCP and an Honorary Master Judge in Japan where he taught beer appreciation and beer judging classes for several years.

**Dave Miller** is a well-known authority on brewing and the author of several books on brewing including *The Complete Handbook of Home Brewing*, *Continental Pilsener* and *Brewing the World's Great Beers*. Dave has been home-

brewing since 1975 and in 1981 won Homebrewer of the Year at the AHA's National Homebrew Competition. He has been brewing professionally since 1991 and currently serves as brewmaster at the Blackstone Restaurant and Brewery in Nashville. He is a BJCP Master Judge.

**Randy Mosher** has been a homebrewer for seventeen years and a National Beer Judge for over ten. Author of *The Brewer's Companion*, and the homebrew columnist for *All About Beer* magazine, he has lectured on beer and brewing around the country. In real life he does branding and packaging design, specializing in small breweries.

**Ron Rake** has been a homebrewer for 11 years and was Southeast Homebrewer of the Year in 1995 and 1996. For the past three years he has worked at the Shipyard Brewery in Orlando, where he holds the title of Head Brewer.

BY AMAHL TURCZYN



## New Yeast Products

Wyeast Laboratories, Inc. is announcing the release of new "yeast tubes" to meet the growing demand for ready-to-pitch yeast. Including the new strains Saison ale #3724 and Octoberfest/Märzen lager #2633, all seasonal strains are available in the new tubes. Wyeast also claims the tubes contain an average of 25% more cells than other tubes: 40-60 billion cells per tube, or 150 ml of pure yeast. The tubes also come with UV light protection and are pre-sterilized.

Wyeast also introduces their new Bio-trace sanitary sampling swabs. They are designed to test clean, sanitized, rinsed surfaces, not wort or beer. Just remove the swab, swab the test area, and replace it back in the tube. A color change will occur in 10 minutes or less, indicating the level of protein residues on the surface. If it's green, it's clean; gray means caution—you should rinse the surface and re-test; purple and dark purple before ten minutes are up means the test failed, and you should definitely re-clean the surface. Any color change occurring after the 10-minute time period should be disregarded. Fewer than



ten swab tubes are \$3.00 each; 10 to 50 cost \$2.60 each, from Wyeast Labs.

## White Labs Offers New Products

White Labs will also be releasing some new products, including a new line of lager strains and a "Platinum Series" of rotating yeast strains for each quarter of 2000.

The new lagers include: WLP838 Southern German lager yeast, characterized by a malty finish and balanced aroma. It is a strong fermenter, produces slight sulfur, and low diacetyl; WLP920 Old Bavarian lager yeast, which finishes malty with a slight ester profile. It is to be used in beers such as Oktoberfest, Bock, and Dark Lagers; WLP029 German ale/Kölsch. It ferments at 65+° F (18.3+° C), has a slight fruitiness but provides a super-clean, lager-like ale; and finally, WLP003 German ale yeast II, good for Kölsch, Alt, and German-style pale ales. This strain is clean, but ferments with more ester production than WLP029.

Platinum Series strains for October-November include WLP009 Australian ale yeast, which produces a clean, malty beer with "bready" esters. Can ferment success-

fully, and clean, at higher temperatures; California ale V yeast from Northern California—fruitier than WLP001, and slightly more flocculent, this strain's attenuation is lower, resulting in a fuller bodied beer. December-January strains include WLP025 Southwold ale yeast, from Suffolk county, England—this yeast produces complex fruit and citrus flavors, and is great for British bitters and pale ales; WLP838 and WLP920 (see above).

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called "Hard E," for California-based Hard E Beverage Company. The beer has 5 percent alcohol by volume, and contains ginseng extract, vitamins A, B and C, a clear malt base, natural citrus flavor, imported vodka, and some other ingredients mysteriously referred to as "other nutrients". (No disrespect for creativity here, but it sounds more like a Russian hippie's hangover recipe than a summer session brew.)

"The history of the beer brewing industry has always been sort of 'me too', since

beers contain many of the same ingredients," said Maurice Bryan, president of Gluek Brewing Co. "But 'Hard-E' opens up a totally new kind of malt beverage...something this industry has never seen. It's a whole new category for the beer industry."

Bryan also said production of "Hard-E" has the potential to generate hundreds of jobs and bring in hundreds of millions of dollars statewide in related businesses such as suppliers, restaurants, packaging companies and trucking firms. Gluek, the third

largest employer in Cold Spring's town of 3,003 has grown from 25 to 45 employees in the last two months and expects to double its staff by December.

Tang-Zima-Smirnoff-Ginseng cocktail, anyone? As our own Gary Glass put it, "The scary thing is, the stuff will probably end up being really popular."

### CO2 Cartridge Tap Saves Keg Lovers All That Pumping

Eurosouce, Inc. introduces the new Party-Master self-regulating CO2 tap designed to perfectly dispense beer from all types and sizes of kegs. A single, compact unit, the Party-Master is safe and easy to use. Simply twist the tap into position, and turn the securing handle to safely tap the keg. Then, insert the 16-gram CO2 cartridge into its holder and twist it into place. Once adjusted, the regulator will allow the beer to be dispensed at a continuous rate set by the user. The device has a built-in pressure-release valve, which automatically releases at 50 to 60 psi. As soon as the tap is removed from the keg, the flow of CO2 stops, saving the unused gas in the cartridge. Using CO2 instead of air preserves the freshness of the product, allowing the keg to be kept and used for much longer. According to Eric Corticchiato, President of Eurosouce, one cartridge is good for about 8 liters, so you'll need 6 or 7 for a half-barrel keg, and 3 for a quarter-barrel. Packages of 10 cartridges run \$9.20 from the company, and the Party-Master tap itself is \$57.40. (214) 357-4688 or eric@eurosouceamerica.com.

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### German Brewers Win Beer Pension

In Erfurt, Germany, a court ruled that two retired brewery workers should receive 264 pints of free beer a year as part of their pension package. The workers were also awarded back pay as compensation for three unpaid years of free beer from their former brewery employers. Apparently, the brewery originally promised workers and retirees 422 pints of free beer a year, but changed their minds after changing ownership. The legal battle was not easily won, however—the retirees spent three years in court fighting for their beer dues.

Amahl Turczyn is the associate editor of *Zymurgy* magazine.

**Dear Professor** (from page 18)

Yo Professor,

You have not heard from me yet. I am a homebrewer for 20 years, now in Colorado Springs and recently into mashing. I own two of your books and they are a great help. But I have a flyer for you. You mention that during sparging, as the pH rises in the grain pile, undesirables leech out of the grain. My water is very low in most of the electrolytes, so I decided to lower the pH of my sparge water from the 8.02 out of the tap down to about 6.6. Hydrochloric acid seems the obvious choice, it adds chloride ions that are fairly innocuous flavor-wise and lowers the pH quite well. My question is about the optimum pH. Should I aim for mash pH (5.2), stay near neutral, or somewhere in between? For your info, hydrochloric acid is available at many chemical supply sources, comes in different concentrations, and is very cheap. I suggest 0.1N (or 0.1M) for safety and ease of measurement. Because water has different buffering agents added, the only reliable way to determine how to lower the pH is to experiment. My friends look at my funny when

they read through my recipes, but they sure like my beer. If you or one of your friends has info to answer my question, there are a lot of us down here interested in the answer.

Sincerely,

Ken Geohegan

Colorado Springs, CO

Dear Ken,

I asked the expert in these matters, Ray Daniels, editor of **Zymurgy** and author of *Designing Great Beers* to provide the kind of technical answers you were searching for. Ray writes:

The short answer is this:

A) If your brewing water is properly prepared, the sparge water component should not require acidification, and

B) If you do acidify, go easy. Nothing below pH 7.0 should be required.

Now, as to why these things are true, I'd have to go into more detail, as follows.

Most authorities generally consider lauter runoff with pH of less than 6.0 to be acceptable. If you measure the pH of your runoff stream, you will see that it starts at the pH of the mash (5.2

to 5.6) and rises. When the runoff stream hits pH 6.0 you are beginning to extract polyphenols, silicates and other undesirable components and you should stop collecting wort. With suitable mash and sparge water chemistry, the pH should not rise to this level until you have collected adequate extract from your mash.

Mash and sparge water chemistry is a somewhat involved subject. Starting with various native water compositions, it can be further influenced by 1) grist composition 2) carbonate removal, 3) salt additions, and lastly 4) acid additions.

First, consider your grist. Dark grains are more acidic than pale grains and in my experience they can easily drop the pH of a mash by 0.5 when compared to a pale-malt-only grist. Also, if you are not achieving your desired mash pH, you can use German-made "acid malt" or "pH malt" for one to five percent of your grist. This product has been processed to contain high levels of lactic acid that will help to lower mash pH.

Next comes carbonate removal. With a pH of 8.04, your water is rather alkaline—most likely due to the presence of carbonate

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at levels in excess of 100 ppm. This is a common problem with brewing waters generally. Although there are exceptions, most professional brewers want the carbonate content of brewing liquor reduced to 50 ppm under ideal circumstances with a maximum acceptable limit of about 70 ppm. A certain amount can be removed by boiling in the presence of excess calcium. In some cases, dilution is a viable alternative as well: a 50/50 mix of tap and distilled water can bring carbonate levels down into the acceptable range while preserving the trace elements present in

tap water and critical to the brewing process. Reducing the carbonate concentration of your brewing water from 130 ppm to 65 ppm should reduce the mash pH by 0.1.

Next are water salts. Calcium and magnesium ions interact with phosphate compounds in the malt to produce acidic products that lower the pH of the mash. This is true both for the calcium found naturally in your water and for any calcium you may add as a salt such as gypsum or calcium chloride. As a rough guide, 90 ppm of calcium can reduce mash pH by 0.1.

In my experience, carbonate removal and

calcium salt additions are sufficient to achieve the proper pH values for mashing and sparging for the vast majority of brewers and beers. Accounting for variations in grist composition, I generally expect a mash pH of 5.5 in pale beers with somewhat lower values for dark beers. Also, my water treatment is more aggressive for pale beers, less so for dark ones (where I may not bother with carbonate removal).

My sparge water receives the same treatment as my mash water: carbonate removal and calcium salt addition. Even though the pH of the sparge water will be in excess of 7.0, the buffering capacity of the mash keeps runoff pHs in the desired range. As a general rule, if your mash pH is appropriate and your sparge water does not contain high carbonate levels (>70 ppm), things should work out fine.

Finally we come to acidification of brewing water with organic or mineral acids, a practice which is not uncommon in the US among craft brewers. Professional brewers usually use phosphoric acid; homebrewers find lactic acid easier to procure. Food grade products are a must and lactic acid may have a pronounced flavor if used in excess. The negative ion from these acids combines with the calcium of calcium carbonate, liberating carbon dioxide and reducing carbonate levels.

While some brewers employ liquor acidification effectively, I do not believe that it is necessary—at least not for homebrewers. The steps I recommend above are fairly easy to execute and rather forgiving in their impact. By contrast, I have found acid additions to be rather exacting and more difficult to control. Furthermore, I have seen commercial brewers who carried acidification to extremes and wound up producing incredibly dry and ultimately unpleasant beers.

By the way, the sources I consulted while putting this together include: *The Practical Brewer* (Third Edition, MBAA, 2000); *Malting and Brewing Science*, Vol 1 (Briggs, Hough, Stevens and Young, 1981); and *Technology Brewing and Malting* (Kunze, 1996).

Hope this helps.

Ray Daniels

Editor-in-Chief

For the Professor, Hb.D.

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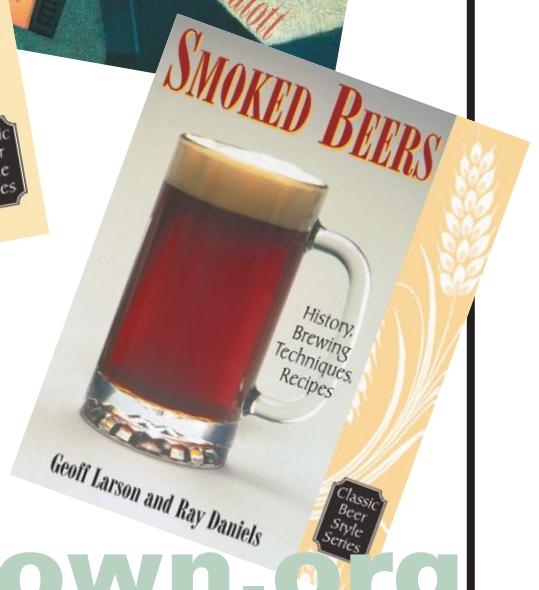
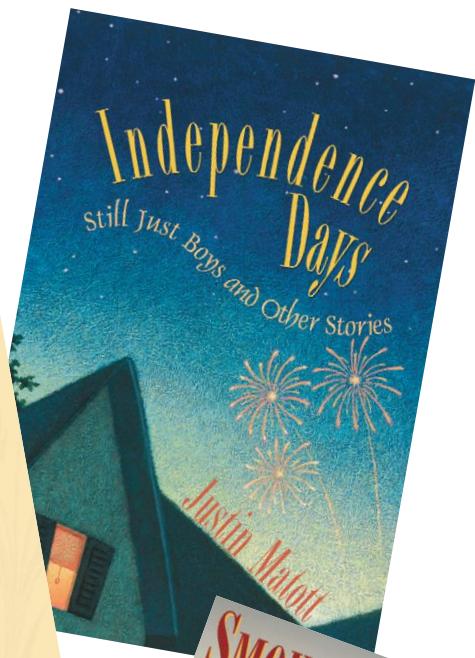
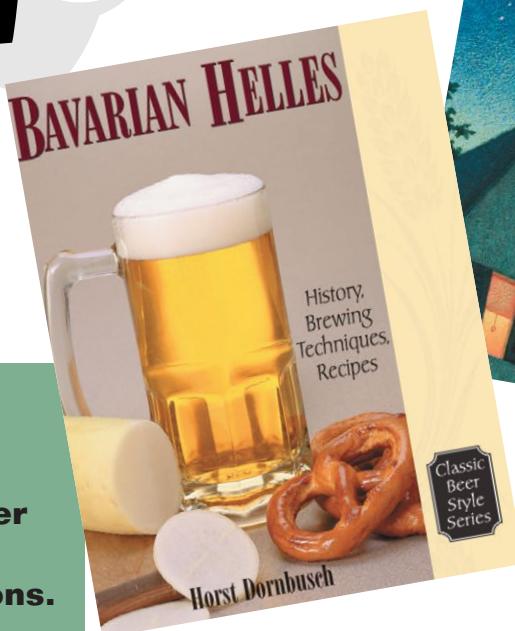


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## **It's The Pits** (from page 31)

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**Joe Formanek has been a homebrewer for 12 years and a founding member of the Boneyard Union of Zymurgical Zealots (BUZZ) in Champaign, IL. He is a BJCP National judge and the 1999 Midwest Homebrewer of the Year. He recently won the 2000 AHA Ninkasi Award and was also blessed with the arrival of his baby daughter, Veronica.**

**Dick Van Dyke is a founding member of Brewers of South Suburbia (BOSS), a BJCP National Beer Judge and past Gold Medal winner in the AHA National Homebrew Competition. He currently enjoys a second career as a brewery representative for 3 Floyds' Brewing Co.**

## **Brewing with Extract** (from page 38)

This should take less than an hour. Then cover the pot, turn off the heat, and do something more interesting like petting the cat. The next night, bring the wort to a boil again, add the flavoring and bittering hops at the appropriate time, cool the wort down, transfer it to the carboy and pitch the yeast. Using this split, an activity that used to consume sunset to midnight can be accomplished in two shorter, easier sessions. Just don't take the lid off your brew pot between boils!

### **Quick! The Ice Cube!!**

Once you have completed an approximately one hour boil and added all the hops you want to get the yeast churning up a protective layer of CO<sub>2</sub> before any nasty bacteria can infect your beer. Take the brew pot off the fire and set it in a sink of cold water to take the edge off the heat. To help this, you might add a bit of cold water directly to the pot — the residual heat of the wort should sterilize the additional water. Now is when you grab that sterile ice cube from the freezer. Float the plastic container in some hot water in the sink to release the cube, and plop the ice into the wort. An eight cup sterile cube should cool three to four gallons of wort within 15 minutes.

### **Making the Magic Work**

#### **Don't Sterilize Your Carboy**

Sure we're concerned about sanitation, but here is one of the best tricks Jay has discovered during his brewing career. He hated handling glass carboys due to the possible hazard they represented through breakage. He tried plastic spring water bottles, but found that they couldn't be reliably sanitized. Then a thunderbolt hit: use the plastic carboy but line it with a low density, FDA-approved polyethylene bag — the kind that hospital supply firms use to keep medical instruments clean. You can get them from your local plastics company or look in the Yellow Pages under medical supplies. Usually an 18" X 36" bag with a 2 mil thickness will fit nicely inside a plastic carboy.

Let's be very clear about this. You don't want to use garbage liners or "T" shirt bags. We're referring only to low density, polyethylene bags approved by the Food and Drug Administration for use with food. If you wish, you can sterilize the bag once it is inside the carboy and

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that is probably not a bad idea. Even Jay started out rinsing his bags with Iodophor sanitizing solution at the beginning just for insurance. But I've heard him swear to friends that over the past 8 years he has been using the dry bag right out of the manufacturer's pack and has not experienced a single instance of contamination during fermentation. After all, the bags are extruded hot and packaged up by the manufacturer before they have much contact with air. Use your own good judgment to find out what works for you.

Once you've slipped the bag into the carboy and draped it over the lip, slide on a rubber fermentation stopper and encircle the neck with a 2 inch hose clamp to firmly seal it air tight. After fermentation you can use a second bag to line your priming vessel with the same sanitary results. In both cases, once the fermentation or priming is completed, you will have to rock the lip of the bag back and forth to release the air inside in order to pull the liner out.

One significant side benefit of these carboy liners is that you can use them to capture flocculated yeast debris for storage and repitching. After racking the beer from the carboy/bag combo, remove the bag carefully so that you trap the yeast residue inside. Then you can cut off the excess plastic, tie a knot in the neck, and store it in the refrigerator for up to a week before using it to pitch your next batch of beer.

### **Racking May Ruin**

We've been using the "closed single stage" style of fermenting for a decade with great results. Jay's theory is that racking your wort from a primary to a secondary carboy invokes too much of a risk of contamination. With the closed single-stage approach, you brew up about 3 to 4 gallons of wort so your carboy is only three-quarters full when you pitch the yeast. Then wait for the fermenting foam to rise and fall, and top off the carboy with cool water that you have pre-boiled to sterilize. Although this is heresy to traditionalists, my goofy-footed brewmeister companion has never found a direct expression of off flavors from leaving the wort on the original trub base.

### **So What Is It?**

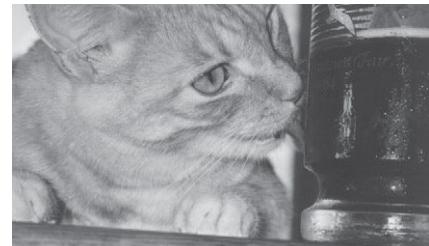
You may notice that we're somewhat cavalier about recipe specifics with Jay's approach.

That's because he enjoys experimenting with different malt extracts and usually never tries to make exactly the same batch twice. Many of our all-grain brewer friends spend hours poring over computers calculating ingredients to predict exactly what style of beer they will end up with. These are fine people and Jay loves rapping with them about their approach because they have been known to ply him with plenty of homebrew to keep his attention. But his secret is in the note taking that is such an important part of malt extract brewing. Make a batch. Taste it. Get others to taste it. Then use your evaluation to specify exactly which style category it best fits in and log that into your notebook. That becomes the basis of your future recipe formulation.

Earlier in this article, we outlined the recipe that took a First Place at the Pacific Brewers Cup. Well, the truth is Jay thought he was designing a Pale Ale. But after consulting with other members of his homebrew clubs who were BJCP judges he realized he had missed the mark and re-categorized it before submitting it to the tournament. The competition judges apparently concurred

because they decided it was the best English Mild entered. That's the style he entered it as and that's the style engraved on the prize mug. All's fair, you know?

Anyway, I hope these brief brewing tales will aid you in making beer better, faster and generally more enjoyably. With the time you save over all-grain beer production you can spend some quality time with your cat.



**Phoebe Ankeney is the fuzzfaced, four-pawed, furperson who is currently the brewing assistant living with Jay Ankeney. You may know her feline predecessor, the famous Gizmo, who helped Jay write the "For The Beginner" series of articles for Zymurgy during 1988-89. Phoebe has watched Jay brew every batch he's made from when she was old enough to play kitten hockey with his bottle caps.**



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## **Homebrew for the Soul** (*from page 64*)

ly caused a hernia while doing sit-ups one night. No big deal, a trip to the doctor, (turn your head, cough) a day in the hospital. But it didn't quite go like that. "Well son", my doctor of thirty years tells me, "the bad news is, you don't have a hernia."

"What's the good news, Doc?"

Silence...from a man who's always telling fishing stories and cracking jokes—not a good thing. After several trips to specialists, and finally surgery, I was diagnosed with cancer: lymphoma to be exact, just a few weeks after moving to Connecticut. I was devastated, of course. I was too young for this. I have a wife and kids. I have hopes and dreams. I have beer to make! (Truthfully, the beer thing kinda slipped my mind.) My parents flew up to see me that September. I was weak from chemotherapy, but glad to see them nonetheless. I commented on the wild Concord grapes that were growing around the property. Dad and me used to pick the wild muskidines in Texas every year and mama would make the best jelly you ever put on a hot buttered biscuit. We decided to pick some of these Concords and try them out. They weren't bad. "Should make good jelly" Mom says. So we went on a grape picking spree. There's one problem with wild Concord grapes though. It seems the grapes do the best in the tops of very tall trees—not a good place for a man going through cancer treatment, or for a man of my dad's age. But someone forgot to tell him that 65 year old men aren't suppose to climb to the tops of 100 feet tall trees, so away he went. Shortly after, limbs covered with grape vines began mysteriously falling from the sky. We picked a lot of grapes that day, but Mom and Dad had to leave the next morning so they didn't get to see the 12 cases of jelly my wife put up. I had so much fun picking those grapes that the next few days were spent searching for grapes low enough for my wife, kids, and myself to pick, and picking them. Before we knew it, we had another 70 lbs of grapes picked. We also realized that we were tired of making jelly. Actually, that was my wife's revelation, since she was doing all the work. So the grapes set in a couple of buckets for a day or two. Then we noticed that the aroma from the grapes was changing, something was

happening. That something was fermentation. No, I wasn't brewing beer, but I was in the fermentation business anyway, like it or not, and I had done it without the three basic ingredients. I had no space—we were still living in a one bedroom apartment that was originally meant as just a transitional place. Money wasn't a definite thing anymore with my health situation, and time was my most precious commodity of them all, and the one in shortest supply. But there I was with fermenting grapes on my hands, some my dad, wife, and kids had picked, I couldn't let them go to waste. That night we went to the local "Book Labyrinth" in search of info on winemaking. The first section I went to was the magazine rack. One magazine caught my eye, it had a big beautiful glass of beer on the cover and a strange name, "**Zymurgy, For The Homebrewer and Beer Lover**". What caught my eye though, was one of the cover articles, "**A Homebrewers Guide to Winemaking**". I bought that issue and read it cover to cover before the sun came up the next day. The wine article gave me the basic knowledge I needed to get my grapes on their way to better things.

The next day at work a fellow employee directed me to a shop, International Foods in Waterbury, CT. I left work early that day and went straight there.

The first thing that caught my eye upon entering the store was the large selection of malt extract and beer kits, followed by several piles of grain of various colors. The proprietor is a widow who has fermented more than a few grapes herself. Her and her husband had made wine for years before his passing.

She set me up with a winemaking kit and all the additives to go with it. As I was leaving I inquired, "This equipment will work for brewing beer, right?"

"Sure," she says, "you'll need to add a few things, but go home and tend to your winemaking. After you rack it the first time, come see me and I'll have you brewing beer in no time."

"Yes Ma'am", I thought to myself, "I will be back." I was back in her shop just a few days later buying a glass carboy. As a matter of fact, over the next several months, I was in her shop every *(continued on page 62)*



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\*Cover 2 is the inside front cover. Cover 3 is the inside back cover. Cover 4 is the outside back cover.

**Homebrew for the Soul** (*from page 61*)  
time my health would allow it, buying some gizmo or gadget I had seen or heard about. Just about every Friday I could be seen leaving her shop with a grocery sack full of grain and hops.

The enjoyment I've gotten out of brewing has certainly been fulfilling. It has helped me to relax and forget about some of my more serious problems, like, should I have my "Not Really a Stout Stout" with sizzling, sirloin steak, or a "Lipps Lager" with Lobster. I believe this easy going, homebrewing attitude has been instrumental in my *FULL RECOVERY* from Lymphoma. That's right, my last round of tests gave me a big fat zero for cancer anywhere in my body. This business of beer causing cancer? Horsefeathers. Hell, I believe the beer is what cured me.

I'm sure glad **Zymurgy** ran that wine-making article. While I'm sure that I would have eventually started brewing, I don't think it would have been as soon or with as much enthusiasm if it had not been for the other articles in that magazine. I haven't missed an issue since. Should **Zymurgy** occasionally run wine articles? You know my answer.

So fellow brewnuts, keep on brewing. Along the way, get a friend interested in the hobby. I personally know several people who have expressed a lot of interest in brewing. The next time I brew I'll make sure that at least one of them is around to help.

As I sit writing these last words, I am once again filled with the joy of popping the top on a very special brew. This particular bottle is the last survivor from my very first batch. It was supposed to be a stout, but didn't quite get there. Honestly, I don't care. The specific gravity is too low, and it has a cidery taste, probably due to the large amount of corn sugar used instead of malt. But like I said, I don't care, and neither do my friends that have helped get rid of it. I remember the first time I tried it. The recipe said to wait four weeks for maturation, but the anticipation was killing me; I had to at least try it. So one night, about three weeks after it was brought down to serving temperature, my wife, brother-in-law, and myself decided to open one bottle for sampling. Three hours later there were thirteen empty 22 ounce bottles sitting on the kitchen table, and three inebriated souls praising the gods of fermentation. But, I digress. Now where was I? Oh yeah, I was about to pour this last bit of stout into my favorite beer mug. Now that's a thing of beauty.

**Adam Holmes is a mechanical engineer who owns and operates Family Irrigation, a landscape irrigation company in Killingworth, CT along with his wife Shel, daughter Kaleigh, and son Adam, Jr. The summer of 2000 has brought a bumper crop of grapes for wine making—if he can just find a carboy that isn't full of beer.**



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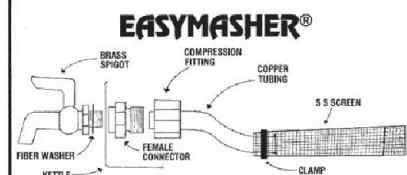
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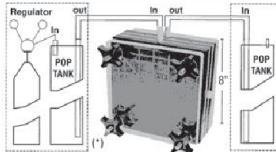
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# Homebrew for the Soul

*A story about homebrewing and the found grapes that led a man to brew, not just wine, but beer—while he battled cancer and discovered what mattered most.*

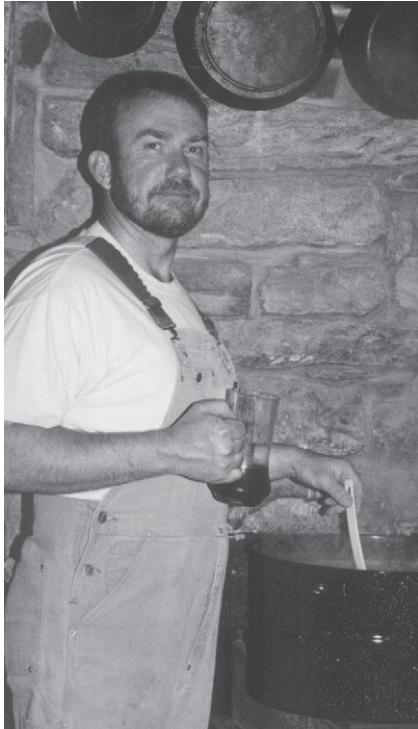
“I like beer” I say to myself in a muffled tone, loosely to the tune of a great Tom T. Hall song. The feeling of satisfaction nearly overwhelms me when I partake of one of my home brews whose taste has somehow surpassed my limited knowledge of the craft. The feeling is especially strong when I pull that last bottle of a particular vintage out of its hiding place in the back of the fridge. You know the one. It was one of last winters’ brews that seemed to stand above the rest. When you first tried it in early spring, you knew you had hit your mark. You savored every last drop of that first glass, but quickly went for another. What’s more, it was even better a week later, better yet a week after that.

“I gotta save some of this” you tell yourself, “but I think I’ll have one more.” And then it happens—you’re down to your last bottle. That’s when you tuck it away in the far recesses of the fridge with a label, to keep your beer guzzling buddies out of it, that reads:

**WARNING! THE SURGEON GENERAL HAS DETERMINED THAT CONSUMPTION OF THIS BEVERAGE CAN CAUSE INSTANT DEATH!**

**(It would be very hard to breathe with my hands around your throat)**

Then the day comes when it’s time to partake of that last bottle. Sure you have other concoctions you could quaff, but the time has come. For me it’s a ceremony that approaches the seriousness of the changing of the guard. Well, maybe not that serious, but I do make sure the decanter and glass are clean of all detergents, and that I’m wearing pants in case company comes over. The joy of nudging the ceramic lid off the bottle and getting just the perfect “pop” is



**Adam Holmes**

something I can’t get out of my keg, nor the ensuing show of condensation floating out of the bottle on a wave of homegrown CO<sub>2</sub>. I decant very slowly, making sure to get every possible drop of clear beer. I watch the layers magically appear and disappear as I pour it into my favorite glass. The aroma of hops, the sweet smell of malt, and everything in between puts a smile on my face as I inhale this treasure for the last time. As the head subsides I finally take the first drink. “I like beer”, I say to myself once again.

Maybe it doesn’t happen that way for you, but it does for me and more than just a few of my brewing friends. You see, homebrewing is something very special to me. That’s why I’m putting these words down on paper, with hopes that maybe some first time reader of this magazine, who hasn’t made the

leap just yet, will find inspiration to try that first batch and discover the true joy of homebrewing. (Hey that could be the name of a book.) Or maybe you’re someone who has brewed, but not in a long time. Maybe you lost the joy, the fun you once had from putting together a grain bill, setting up a mash schedule, or just getting together with a few good friends for a brewing session. If I ever lose my zeal for brewing, hopefully a good friend will stick these words under my nose.

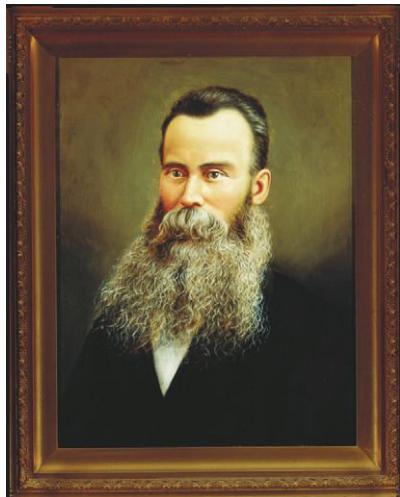
Do you remember your first solo brew? I remember mine because it wasn’t that long ago. I had just moved to Connecticut from Texas. That was April of ’98. I had brewed before with a friend in Texas and was hooked before that first brew session was over. He had some other friends over who were also homebrewers, of course they brought some of their latest brew to go with my buddy’s latest offering. It was all delicious, some of the best beer I had ever had. (The Sam Smith’s Taddy porter someone brought wasn’t bad either!) The beer drinking, the camaraderie, my first smell of caramelized malt—how could a man walk away from there the same person? Not possible. The sounds, the smells, the tastes of that evening will linger in my mind forever. Anyway, the seed was planted, I knew that someday I would brew. All I needed was time, money, and space. Of course, life ain’t fair. It seems every time I would get one of those precious commodities, the other two would be missing. And time passes by. Now back to Connecticut.

Things were looking up. I had a good job that paid well, had reasonable hours, too. Aha! Time and money, money and time. Now all I need is... With some financial juggling we were on our way to having our first roomy house. Aha! My third ingredient—space!

But life does have its little twists and turns, and the next curve ball it threw me was real sinker. I apparent- (continued on page 61)

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*Thomas Cooper*

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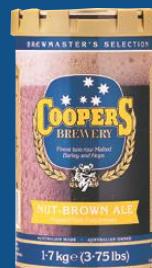
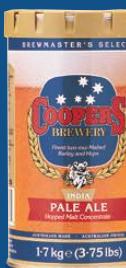
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*"I wouldn't have  
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could be so good"*

Roy Bailey - Beer Correspondent  
CAMRA's 'What's Brewing' magazine (April 2000)

In Roy Bailey's local Good Beer Guide Pub, the customers' reaction was "**uniformly complimentary**" and "**most of them thought it was a full-mash ale**"

*"I'm really impressed!  
This is better than  
many pints I've had in  
the pub"*

BBC Radio 4 food & drink programme  
(July 2000)

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