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DREGS FROM THE KEG

May 2013



**INHALE DEEPLY
AND SMELL THE
BOILING WORT**

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Foam at the Top

[Rives Borland](#), Strand President

Hello Strand Brewers. I've been busy busy prepping for the [Southern California Homebrewers Festival](#) (SCHF). We have at least 25 people and more than 16 beers heading up to the festival this year and it is shaping up to be a great time. We will actually get a beer entered in the Bragging Rights Only (BRO) Competition (wood aged beers) on time this year and we even have a plan for somewhat of a coordinated food effort.

The only bummer is some last minute news we received from the California Homebrewers Association (CHA). The California Alcoholic Beverage Control (ABC) is cracking down and levying some stricter pouring rules on us this year. To summarize the new rules we need to adhere to: YOU CANNOT BE DRINKING OR APPEAR OBVIOUSLY DRUNK WHILE YOU ARE SERVING!!! Violating this could get the festival shut down. Servers will need to wear special vests, which they will issue to us, and there can be a maximum of four people serving at once. As a result of these rules, we have implemented a pouring shift schedule which I emailed to the festival attendees. It is unfortunate but this year, at least, we will just need to deal with it. The CHA does not believe that these new rules should apply to this event, which is a private event for members only, but there is not enough time to fight it for this year. They have a team of lawyers familiar with the ABC laws working to remove these restrictions for next year.

On a more positive note, I would like to congratulate all of our club members who [placed in the 1st round of the National](#)

[Homebrew Competition](#). We had at least three Strand members that I know about (I only checked the San Diego judging site) who placed, which is fantastic. They are:

Category 2: Pilsner, Number of Entries: 18

1st 2A **James Hilbing** of Redondo Beach, CA, Strand Brewers

Category 16: Belgian and French Ale, Number of Entries: 55

2nd 16E **Ryan Ferrasci** of Redondo Beach, CA, Strand Brewers

Category 22: Smoke-Flavored and Wood-Aged Beer, Number of Entries: 43

1st 22C **Rives Borland** of Redondo Beach, CA with **Jeff Sanders**, Strand Brewers

All three of these entries will be moving on to the final round judging in Philadelphia at the end of June, so wish them good luck!

In other news, I attended the Pacific Gravity Home Brewers Club Bus trip to San Diego on April 22nd and it was a great time. Tammy Minion and Tony Hale were also in attendance. I brought one of my work buddies, who is not a homebrewer, but has a casual interest in craft beer and it was an eye-opener for him. We stopped at Pizza Port San Clemente (where the brewer, Devon Randall, is a former Pacific Gravity member), Green Flash, and White Labs. I was impressed with the new Green Flash facility, which is huge with several 250-barrel fermenters and 500-barrel bright tanks!

May Meeting

May 8th at 7 pm



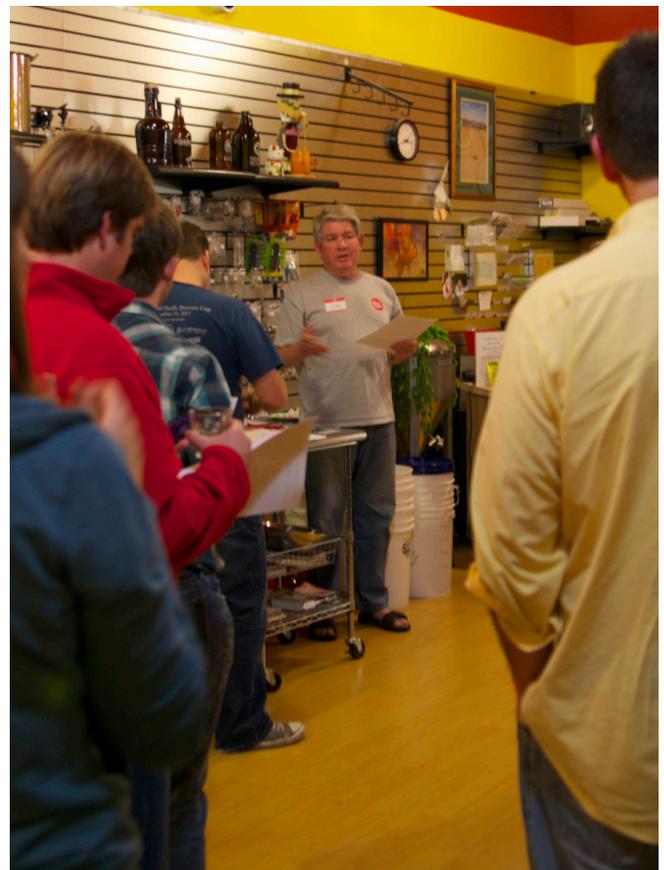
1311 POST AVE TORRANCE, CA 90501

This was my second trip to White Labs in a month and both times were very interesting with completely different beers. We had a different tour guide than we did on our club bus trip and I asked my same question again about the average viability of a perfectly stored vial after four months. I got a different answer (~70%) this time. So it is hard to say, but maybe assume anywhere from 70–90% viability. One thing that didn't occur to me to ask last time was about the fermentation conditions. I asked this time if they ferment every strain for their flight under the same conditions and they said yes! He said that they ferment all the beers at 68 degrees, the same levels of oxygen, etc. I was drinking a California Common made with a Kölsch yeast that had a pretty strong phenolic character, which made sense, because we know that Kölsch is usually fermented in the low 60's for a relatively clean tasting beer. So it seems like that at this point they are not making the best beer possible with each strain and not following their own recommended fermentation temperature guidelines that are posted on their website. I think this may be because they simply don't have the capability to ferment each beer under its own ideal conditions at this point, but maybe they will soon. Nonetheless, it makes for an interesting and educational tasting experience for brewers, at least, even tasting the off flavors. At the same time, some of the beers are also very good and some of the yeast blends make for interesting results. The other interesting thing I learned was that under certain conditions, *Brettanomyces* can produce quite a bit of acidity and tartness, contrary to what many people believe. White Labs had a flight of four Flanders Red Style Ales: one with an abbey strain and Brett. B.; one with the same abbey strain and Brett. L.; one with Brett. B. alone; and one with Brett L. alone. None of them had any lactic bacteria and were by no means classic examples of the style, but they were all quite tart. It proved that given the right conditions ([a lot of oxygen in primary fermentation?](#)), *Brettanomyces* can produce a significant amount of acetic acid.

When I was at White Labs on the Strand bus trip in March, I turned in 110 vials for a hoodie, a book and a vial. Well, I was messing around in the garage just a few weeks later and I found a

whole other bag of 40+ vials! I turned those in this time around for four fresh vials: two lagers strains and two ales. So I have been busy brewing with those.

Several club members (myself, Jim Wilson, Tammy Minion, Jay Ankeney, and Bob Wilson) went up to judge the Maltose Falcons' Mayfaire Regional Homebrew Competition last weekend. I judged IPAs. There were more than 40 entries in the flight! There were more than 550 entries in the competition this year and they struggled to get judges to stick around for an afternoon session. It didn't help that lunch was about 2 hours later than planned! Even with a bunch of pre-judging and two sessions on Saturday, they still had not done the Best of Show (BOS) judging. It seems like all the major competitions are getting tons of entries these days, so it's something to prepare for when our next turn to host the Pacific Brewers Cup (PBC) rolls around.



Jim Wilson talking about yeast.

Jim Wilson gave a truly excellent presentation on yeast at the April Club meeting. I learned several new things and I have read a lot about

yeast. I think the presenters at our meetings so far this year have been doing a great job. We are trying to plan out the rest of the year and we have some other topics and presenters in the works, but we really need your help. We are very interested to find out what topics the membership wants to learn more about and any ideas you have for activities or speakers that you would like to see happen. I will be sending out a one question survey/request for ideas soon. I would like to get your top few topics you would like to learn more about. Feel free not to wait for the official request and just send me them now at president@strandbrewersclub.com. I will compile the most popular topics and work to find a presenter or organize an activity to address the topic. If you already have a presentation in mind you would like to give, please let me know, as well.

Speaking of meeting activities, news came down recently that the American Homebrewers Association (AHA) is ending the Club-only-Competition (COC) program after the May competition this year. You can read about their reasoning [here](#). Basically they feel that the COCs are no longer meeting the original objectives and are receiving too many entries for a club to reasonably handle. They want to refocus their efforts to provide more tangible resources for homebrew clubs throughout the nation and the world. They are creating a new annual club award, the Radegast Club of the Year Award, focusing on club educational and community service activities. Radegast is a Slavic god credited with inventing beer. See the Clubs section under Community on HomebrewersAssociation.org for details on this new award, along with a form for submitting club entries for the contest. "This new award will help the AHA draw attention to the many activities that homebrew clubs are involved with that benefit their communities, helping to elevate the image of homebrewing and promote the hobby. Club submissions will also allow the AHA to provide additional educational resources, enabling clubs to learn about the activities of other clubs around the country. The first Radegast Club of the Year Award will be announced at the 2014 National Homebrewers Conference in Grand Rapids, Michigan." Yes, that's right, in case you didn't

hear, they announced towards the the end of last year (earlier than usual) that the 2014 NHC will be in Grand Rapids. I have been to Grand Rapids in recent years and there are some amazing breweries and beer focused bars in the area, so it should make for a great NHC.

If you want to hear more about the AHA, their Director, Gary Glass, will be giving a talk at noon this Saturday at the SCHF about "recent trends in homebrewing and recent legislative issues relevant to homebrewers."



April Club Brew at Steve Fafard's Brewhouse.
Relaxing and critiquing.

Looking ahead to the rest of the year, expect more clubs brews and summer party planning. I think I may have found a very cool possible location for the summer party. My friend Brent (an independent homebrewer) has a neighbor with this pretty amazing back courtyard setup with a large professional looking outdoor bar,. It has taps, glass-front refrigerators and an outdoor stage for bands to play. He had his 40th birthday there last year and it was a blast with his band (appropriately title [Barley Legal](#)) and several others performing. I brought a keg of homebrew over and people seemed to enjoy it. I was talking to him recently about doing another similar event there this year, but increasing the homebrew aspect. He ran it by the neighbor, who also likes the idea. Then it occurred to me that it would be the perfect venue for our summer party. Brent said he could probably get a bunch of bands to perform for free again. I will see if I can track

down some pictures of the venue and send out some more details soon.

I have a busy schedule preparing to move in the next couple of months. I'm also attending three weddings in the Boston area and the National Homebrewers Conference in Philadelphia before the end of June! So I may be looking for people to step up and take the lead on some of the club activities when I'm not in town. I'll be scheduling an overdue officer's board meeting soon to see what we want to focus on the rest of the year as I close out my time as President. I would like to see the website migration completed and maybe another barrel project happen. If you have any ideas, suggestions, comments or feedback about which things are going well in the club and which things you would like to see change, please don't hesitate to send them my way.

Finally, I am having a Birthday Party on Saturday, May 18th at my place at 1237 Amethyst in Redondo, starting at 6PM. There will be several homebrews on tap, as well as a lot of bottle sharing and we'll be firing up the grill. All are invited to attend. I already sent out a [Facebook event notice](#) to many of you, but I know some of you are not on Facebook or not linked to me. Feel free to bring food or beer to share and if you want to bring a keg, let me know and I'll save a tap for it.

OK, that is all for now. I need to go finish kegging my beers for the SCHF. See you up there this weekend for an amazing festival!

Big Brew Day at Ohana Brewing Co.

By [Rick Wirsing](#), Dregs Editor

The Long Beach Homebrew Club (LBHB) hosted the Big Brew at the [Ohana Brewing Company](#) Brewhouse on April 20th. Josh Smith, LBHB President, attended our April club meeting and extended an invitation to the Big Brew to our club members. Mike Haisma, Brian Kellough and I took advantage of the opportunity.

The Big Brew reportedly began at about 6:00 AM. I can't really say because I didn't get there until after 7:00 AM. Brian said he was there pretty much from the start. Mike got there after me. The Big Brew was sold out with

approximately 30 attendees and more who could not be there, but sent their fermenters to be filled.



Ohana Brewing's Slogan

Coffee, donuts, bagels and orange juice got us through the morning until someone decided it was an acceptable hour to begin having a few tastes of homebrew and Ohana Brewing's beers. I had IPA and stout homebrews that were pretty good. I also tried all of the Ohana Brewing beers on tap: Hill Street Hefeweizen, Makin Moves IPA, Rhinos Redemption DIPA and LA Ale Works Gams-Bart (Roggenbier). I preferred the Makin Moves IPA.

Ohana Brewing Co. is less than a year old, having started operations in August 2012. It's a 7-Barrel Brewhouse that they are continually improving. We could see a glycol cooling system was in the process of being installed. As currently configured, the mash tun is also used as the boil kettle. It takes a long time to establish the boil.

Ohana Head Brewer Chris Walowski lead the Big Brew. The recipe was for a basic pale ale comprised of 90% American Pilsner Malt, 5% Honey Malt and 5% Wheat Malt. Magnum and Styrian Goldings hops were added during the boil.

Like most club brews, we spent a lot of time relaxing and critiquing while the Head Brewer was doing all the work. Subway sandwiches were served for lunch and paired well enough with the beer.

At the end of the boil all the attendees lined up with their fermenters to get them filled. We

each got five gallons of wort. With respect to yeast, Mike made a 1.5L starter using two old vials he had in his fridge: WLP530 (Belgian Abbey Ale) and WLP566 (Saison II). I used some California Ale (WLP001) I had harvested from an ale some time ago. Brian used the American Ale yeast (WY1056) that Ohana Brewing made available. Hopefully we will be bringing these brews to a club meeting in a month or two for tasting and comparison.



That's a lot of spent grain to shovel.

Thanks to LBHB and Ohana Brewing Co. I had a great time and I would recommend all our members attend a Big Brew at least once. You may be surprised to see how similar homebrewing is to craft brewing.

Competition Calendar

[Jeff Sanders](#), Strand Vice-President

Club-Only Competitions

The May 2013 COC is the last one as the American Homebrewers Association has decided to discontinue the COC competitions.

However, IRON BREWER survives.

Iron Brewer Challenge Ingredients

Round 5

June 12, 2013 Club Meeting
Saz Hops, Lactose and Peppercorns

Round 6

October 9, 2013 Club Meeting
El Dorado Hops, Crystal Malt and Sour
Cherries

Local Competitions: in order of entry deadline

San Diego County Fair Homebrew Competition
Del Mar, CA Entries due May 22nd.
Judging June 30th. Entry fee: \$7.
Contact: Katie Phillips. Phone (858) 792-4245.
Email: kphillips@sdfair.com

San Mateo County Fair Homebrew Competition
San Mateo, CA Entries due May 24th.
Judging June 8th. Entry fee: \$6.
Contact: Roger St. Denis. Phone (408)
225-5834. Email: meadguy@yahoo.com

Southern California Regional Homebrew
Championship
Corona, CA Entries due June 8th.
Judging June 22nd. Entry fee: \$6.
Contact: Michelle Kinsman. Phone (951)
660-2875.
Email: stuff@cardyin.com

Many more competitions are going on around the country and around the world so.....
Go to www.homebrewersassociation.org for a complete list.

For a complete list of BJCP competitions, go to http://www.bjcp.org/apps/comp_schedule/competition_schedule.php

Spent Grains

[Brian Kellough](#), Strand Treasurer

We enter May with about \$3,550 in the bank. Inflows included \$165 in dues and \$50 in raffle money from the last meeting. We have some great prizes coming up at the raffles, so get your tickets at the meetings and let's have a great year for the raffle!



Raffle Prizes

We have 40 paid memberships, including three new members: Mike and Katie Litsey, and Rudy Inauen. Welcome to the club! I still need applications from Christian Simms, Kelly Simms, Eddie Martinez, Eddie's Wife and Rudy Inauen. You can fill it out electronically and just email it now! [Click here](#). Lets keep up the good work, and spread the word about our club and the benefits it provides! We are now only 20 from our goal of 60 members.

To get reimbursed for club expenses please bring receipts to the meetings and I'll write you a check or scan your receipts and email them to treasurer@strandbrewersclub.com and I'll send you a check through online billpay.

Membership Renewal Time!

We have 26 members from 2012 who have not renewed yet. Don't forget that dues for 2013 are due. Dues are \$35 (\$37 through paypal) for individual membership and \$45 (\$48 through paypal) including a spouse. TO MAKE IT EASIER FOR YOU, WE HAVE AN ONLINE PAYMENT OPTION THROUGH PAYPAL! [Click](#)

[here](#) for information. It is nominally more expensive, but infinitely more convenient for all involved! If you don't like paying online, still fill out the application form electronically and email it, then just mail a check made out to "Strand Brewers Club" to me at 10890 Whitburn St, Culver City, CA 90230. You can also hand me a check or cash at the next club meeting (however, all applications should still be submitted electronically).

Attention returning and current members: If you think your contact information is different than what we have on file, please fill out the online membership application at the link above. It is a fillable pdf you can save and keep for your records. Annually we'll ask renewing members to check their forms and make sure the information is current.

What's On Tap

[Tammy Minion](#), Strand Activities Director

May 3rd and 4th

Southern California Homebrewers Festival (SCHF) at Lake Casitas (near Ojai).

Memberships must be purchased online before noon on Friday Mar 3rd. They will not be sold at the festival. Cost is \$50. [Please visit http://www.calhomebrewers.org/](http://www.calhomebrewers.org/) for more details. Contact [Rives](#) if you would like to share one of the club's campsites.

May 4th

LA Vegan Beer & Food Festival at the Roxy Theatre – 1 to 5 PM.

Presented by Tony's Darts Away, QuarryGirl.com and the Roxy, the festival will be held at 8950 Sunset Blvd., West Hollywood, CA, across the street from the Roxy. There will be over 40 breweries, local vegan vendors and live music. General Admission is \$40 in advance and \$50 the day of the event. For more information visit: <http://losangelesvegan.com>

May 7th

Beer Paper LA Official Launch Party at Beachwood Brewing in Long Beach – 6 PM.

You can be one of the first to pick up a copy of the paper, win prizes, meet the editors and enjoy local beer. <http://beachwoodbbq.com/events.html>

May 9th

Drake's Alpha Session Release at Select Beer
- 5 to 10 PM. <http://www.selectbeerstore.com>

May 10th

Sierra Nevada Brewing Company Tap Takeover at Four Points LAX - 5:30 to 9:30 PM. Four Points LAX is having the Annual Grand Re-Opening of the Brewster's Pool Bar featuring Steve Grossman and Sierra Nevada beers. Cost is \$30 or \$25 with a Twitter Code Word.

May 15th

Ballast Point Beer Takeover at 1321 Downtown Taproom, Torrance.

May 16th

Summer Solstice: The Seasonal Beers of Summer - 6:30 to 8:30 PM. Total Wine & More Redondo will take you through a myriad of summer offerings from craft breweries. Cost is \$15 per person. Please visit the store to reserve seating with payment.

May 18th

Smog City Taproom Grand Opening - 12 to 9 PM. Celebrate Smog City's new location at 1901 Del Amo Blvd, Unit B, Torrance, CA 90501. They will have new and cellared brews available.

May 18th

Local Brewer's BBQ at Select Beer - 12 PM to 12 AM. Celebration of American Craft Beer Week featuring Abigaile, Beachwood, El Segundo, Monkish, Strand, and Smog City. BBQ from Wyatt's BBQ. <http://www.selectbeerstore.com>

June 9th

The Med & Hanger 24 Beer Dinner at Mediterraneo. The event features a 4-course beer inspired menu from Chef Amber Caudle. Cost is \$50/person (tax and gratuity not included). The menu includes 4 beers and 4 courses. Call 310.318.2666 to reserve your spot.

For even more exciting events visit: https://www.google.com/calendar/embed?src=tammyminion@gmail.com&ctz=America/Los_Angeles.



Brewing the Best Damn Beer

Strand Brewer of the Year Points Standings

[Mike Haisma](#), Strand Communications

Another month has passed us by, and it's time for another update in the standings. Things have changed dramatically in the past month. Earlier, Jim Wilson had pulled into a tie with me for first place thanks to his excellent technical presentation on Yeast at last month's meeting, but everything changed when National Homebrew Competition Round 1 results came out. Strand members had three beers advance to the Round 2 Competition at the National Homebrewers Conference in Philadelphia: Jim Hilbing's German Pilsner, and Rives Borland and Jeff Sanders' Rum Barrel Aged Imperial Stout both won gold medals, while Ryan Ferrasci's Belgian Specialty earned a silver medal. Congratulations to our winners and good luck in the second round!

Additionally, I was able to track down the cleverly concealed results from the [2013 Doug King Memorial](#) competition earlier this year, for which a link was never posted, and for which several of the dates listed are the incorrect year (they really are results from 2013 -- I was there!), only to discover that our beloved (but rarely seen at meetings) member Jim Hilbing managed to scoop up two silvers, a gold, and a runner-up BOS. These points, combined with his first place at NHC Round 2 vaults Jim Hilbing into the lead for Strand Brewer of the Year. There have been a few other local competitions for which I have yet to find posted results, the most significant of which is Maltose Falcons' Mayfaire Regional Homebrew Competition.

As a reminder to all our members, I'll again note that just entering your beers into BJCP competitions will earn you points, as will having your beers place in competition. So, if you've entered beers and/or placed in competition, please let me know or else I cannot keep track of it in the leader board. As such, the totals below do not include any points for individual competition entries, but do include points for medals that I have been able to determine. Finally, if you are bring a keg (or equivalent) for the SCHF please let me know about that as well. Cheers!

Name	Points
Jim Hilbing	31
Rives Borland	26
Mike Haisma Jim Wilson	25
Jeff Sanders	16
Hunter Thacker	11
Tom Kulzak Ryan Penrod Ryan Ferrasci	8
Steve Fafard	6
Rich Thornton Jim Webster Bob Wilson	5
Rick Wirsing Nate Federman Jared Carson David Eaves	4
Steve Gardner Steve Dehart Micheal Litsey Eddie Martinez Adam Pike	3
Lisa Cooper Lee Richardson Charlie Thacker	2

Name	Points
Tammy Minion Rory Dewan Robert Hernandez Janet Fukumoto Graham Hebson Ethan Allen Doug Toperzer Dan Bottoms Christian Sims Charlie Wallace Brian Basye Brendan Binns	1

Give Your Yeast a Helping Hand

Jim Wilson, BJCP Grand Master II

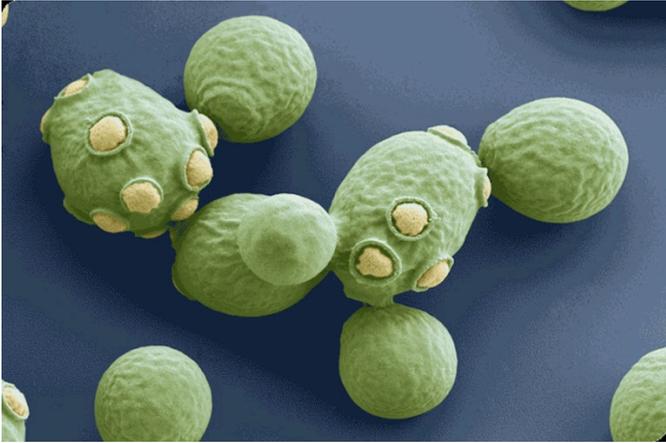
How important is yeast? The classic cliché is that brewers make wort and yeast make beer. It's true, you can [look](#) it up. Without yeast, there's no beer as we know it.

[Yeast](#) is a single celled [fungus](#) that lives almost everywhere. It thrives on plants, especially on ripe fruit and tree sap, in animals, dirt and water. Its life consists of [metabolizing](#), or fermenting, [sugar](#) that's provided by other organisms and reproducing by budding. Yeast can ferment at a prodigious rate. Its peak glucose [uptake](#) is about equal to its body weight each second!

Without understanding what it was or how it worked, yeast was domesticated thousands of years ago to ferment a wide variety of [food and beverages](#) including beer, wine, soy sauce, cheese and dry sausage. Yeast's main task during fermentation is to convert energy from sugar to a form it can use. Yeast also makes alcohol, carbon dioxide (CO₂) and especially [flavor compounds](#) as by-products.

Anton van [Leeuwenhoek](#) made a major contribution to the understanding of yeast when he built an improved microscope and saw a single yeast cell for the first time in 1680. Yeast's actual role in fermentation remained in doubt until 1857 when Louis [Pasteur](#) proved that it's alive and metabolizes sugar to sustain itself.

We now know that brewer's yeast is a round or football shaped cell 5–10 microns wide. That's about 1/20 the diameter of a human hair and is invisible to the naked eye.



This colorized scanning electron micrograph of beer yeast was taken at about 10,400 times magnification. Cells can be seen blebbing buds. The yellow bumps are scars from previous buds.

The [biological classification](#) of brewer's yeast is *Saccharomyces cerevisiae* which means "[sugar fungus of the beer](#)." *Saccharomyces* is the genus and *cerevisiae* is the species. *S. cerevisiae* is ale yeast. Lager yeast is now called *S. pastorianus* and it's classified as a strain, or variety, of *S. cerevisiae*. Here are some features of both.

S. cerevisiae:

- Is found in nature;
- Can ferment simple sugars but can't ferment the trisaccharide [melibiose](#);
- Can survive temperatures up to 102°F;
- Brewers have selected good wort fermenting strains for thousands of years; and
- Different strains produce alcohol and favorable flavors from about 58 to 85°F.

S. pastorianus:

- Is currently thought to be a [hybrid](#) of *S. cerevisiae* and *S. eubayanus* that evolved about 500 years ago;
- Was first isolated by Emil Hansen in 1883 and was originally named *S. carlsbergensis* after Hansen's employer;

- Also called *S. uvarum* and was recently renamed *S. pastorianus* in honor of Pasteur's seminal contributions to brewing;
- Can ferment simple sugars and melibiose;
- Can survive temperatures up to 93°F;
- Has undergone a similar selection process to ale yeast in breweries for hundreds of years; and
- Different strains produce alcohol and very low levels of favorable flavors from the low 40s to the mid 50sF.

During fermentation, both ale and lager yeast act in three over-lapping [phases](#). The first is called the lag phase because nothing appears to be happening for 4 to 15 hours after pitching. Nutrients are being absorbed and processed in order to allow cells to produce healthy offspring. Lag is followed by a log phase that lasts from 6 hours to 4 days. During this time, yeast reproduce exponentially and fermentation begins. Ale yeast can double its cell count every 2 hours as long as adequate nutrients and food are available. Most of the yeast produced flavor compounds are created during this phase when about 3 generations of yeast growth occur until nutrients are diluted by the budding process and reproduction slows. Last is a stationary phase which takes 3–10 days for yeast to ferment sugars to the beer's final gravity (FG), reprocess intermediate by-products and allow unwanted volatile aromas to escape.

Hundreds of yeast strains have evolved that have the choice of more than 50 different enzymatic reaction [pathways](#) during fermentation. Each combination of strain, available nutrients and sugar produces unique flavors. When alcohol is finally made, it reacts with organic acids to produce [esters](#). These factors explain the wide range of flavors that yeast can produce. If a yeast PhD is in your future, [here](#) is the roadmap.

Left on its own, yeast can make "beer" that may or may not taste the way we expected. Yeast doesn't care one way or the other. What we can do is allow time for every step to proceed to completion (never compromise quality for speed, e.g., high pitching temperatures) and

nudge the process in the direction we want by managing some key fermentation variables.

Here are 14 variables to look after more or less in the order they come into play during fermentation.

- Cold side sanitation (clean and sanitize everything that touches wort post boil).
- Original Gravity (OG) and wort composition (appropriate for style from recipe and mash if brewing all grain).
- pH (get in the habit of measuring pH of the starter, mash, pre boil, post boil and post fermentation to catch off nominal numbers – they can be adjusted).
- [Nutrients](#) (oxygen, free amino nitrogen compounds, vitamins and trace minerals). If you're brewing all grain, malt supplies everything except oxygen and zinc, but it doesn't hurt to add nutrients with the warning that oxygen should only be added early in fermentation or metallic, buttery or paper flavors result and at controlled levels or excessive higher alcohols will be produced.
- Trub in the fermenting wort (especially for lightly flavored beers).
- Yeast strain (correct for the intended style).
- Yeast viability (make a starter for liquid yeast with nutrient addition and constant agitation).
- Yeast purity (use a commercial tube or packet or if re-pitching, practice excellent selection and sanitation techniques).
- [Size](#) of pitch (roughly 0.75×10^6 cells/ml/°P for ales and twice that for lagers or strong ales).
- Consistent pitch size (for repeatable flavors).
- Wort mixing (for yeast distribution and if diluting or doing a multi fill batch).
- Temperature (pitch 2°F lower than desired with wort and starter no more than 5°F apart, don't jack the T up and down but do allow it to rise after 2–3 days).
- FG (75% apparent attenuation is typical, forced fermentation is a useful test).
- After FG is reached, allow the beer to clean up after itself for two days before

cooling or packaging (this allows the yeast to reduce diacetyl, acetaldehyde and other undesired flavor compounds).

- Troubleshooting (four common problems are long lag time, that allows bacterial growth to produce veg or sour flavors, stuck fermentation, poor flocculation and levels of flavor compounds different from your expectation).

Focus first on sanitation, adequate oxygen (O₂), pitching a consistent amount of viable yeast and temperature control.

Managing fermentation isn't an overwhelming task. If you do only a few items well, yeast can still make beer that can make you happy. There's a chance that the end product will resemble what you anticipated. Take care of many of these points and you'll be rewarded with a beer close to you wanted. When you do them all well, you'll be the Master and I'll be your student.

There are a variety of ways to brew well. Our best role models are successful homebrewing practices. It's not always possible or even desirable to imitate commercial breweries although what they do points us in the right direction. But, process conditions that work for them may not scale down well to our breweries. For instance, if we try to ferment at temps used by commercial brewers, especially Belgians, our beer's flavor can vary from theirs. This happens many times because of the effect size and configuration of equipment has on yeast performance. Cooler fermentation temps than commercial brewers use are often more appropriate for us. If you do experiment, objectively evaluate the results to make progress getting the flavors you want.

A short sampler of general references about yeast:

[Yeast](#) by White and Zainasheff is the best book for brewers.

www.whitelabs.com/beer/homebrew_FAQ.html
www.wyeastlab.com/he-yeast-fundamentals.cfm

www.maltosefalcons.com/tech/yeast-propagation-and-maintenance-principles-and-practices

Yeast Nutrition, 2009 NHC microbiologybytes.com/video/Scerevisiae.html
blog.cara-online.com brewing yeast,
controlling yeast growth and zinc pages
www.thezymurgyguide.com/yeast/yeast.html

The Green Frugal Brewer

By [Rick Wirsing](#), Dregs Editor

When I first started brewing some three decades ago, one of the attractions to home brewing was that you could make beer more cheaply than you could buy it. Of course everything was much more crude in those days. Equipment and supplies were unavailable or hard to find, so a homebrewer had to be quite creative with respect to brewing equipment and methods. Because that is how I started, cheap and creative have been constants in my brewing over the years. Thus the “frugal” in the title to this article. I have thrown in the word “green,” because it is fashionable and you can claim to be doing things that are good for the environment when actually you are just being cheap.

Recently I was at the South Bay Brewing Supply store and a new homebrewer asked me what I did with all my spent grain. He was wondering about using spent grain for baking purposes. I explained that a few times I dumped my spent grain in plant beds around my house as a type of mulch. That did not work out well. It molded, smelled and dogs in the neighborhood loved to roll in it. A few times I dumped the spent grain in my worm composter. The resulting compost smelled like manure, which when I spread it around in the plant beds, smelled really bad and dogs in the neighborhood loved to roll in it. I have for quite some time now been dumping the grain in the green waste bin to be picked up by the City. The bin smells badly, and gets really bad when I fail to put it out on collection day. But at least I haven’t noticed any dogs getting into the bin and rolling around in it.

This all started me thinking. It would be green (cheap) of me to make bread and maybe other baked goods using the grain. And it might be cost effective (cheap). So I did some research online. One of the most useful sites I found

was the [Spent Grain Chef](#). There are a surprising number of [recipes you can find](#) online for spent grain too.

I decided to give it a try. I had about ten pounds of wet spent grain (two-row barely malt) after making an IPA. That is a lot of grain for baking purposes, by the way.

Just like homebrewing, you need to learn the characteristics of your equipment. I had to learn the characteristics of my oven. The Spent Grain Chef [instructions for drying out spent grain](#) call for setting your oven to the lowest temperature, typically 170 to 200 degrees Fahrenheit. My oven is a convection oven, so it automatically sets a temperature lower than what is specified in a recipe because convection heating is more efficient. I played with the oven controls to get a temperature of 180F. The instructions say to let the grain dry for seven hours. It took about four hours in my oven to dry out the grain, which I didn’t think was a bad thing. I had ten pounds to dry and I could only put about three pounds in the oven at a time.



Drying spent grain three cookie trays at a time.

The dried grain appeared to be very coarse to me. I did not find the thought of putting it into anything I was going to eat very appealing, except perhaps granola. So then I found Spent Grain Chef [instructions for making flour](#) out of the dried grain. I got a coffee/spice grinder and ground half the dried grain into a moderately fine flour.



The Grinder



Spent Grain Flour

I have made [popovers](#) and [banana bread](#) using recipes that specifically called for spent grain flour. I also made [No-Knead Bread](#) for which I modified the recipe, replacing half the flour with spent grain flour. Surprisingly, they all

turned out quite well. I liked the banana bread in particular because it had nice caramel flavors. I think when I make it again I will put in more bananas because the caramel flavors overwhelmed the bananas. The No-Knead bread worked well in french toast.



Spent Grain Popovers



Spent Grain Banana Bread



No-Knead Spent Grain Bread

Just like brewing, there are a lot of variables that you can play with in making and baking with spent grain. For example, I am pondering how spent grain from various styles of beer might work in different types of bread. I am also thinking about how I can modify my grinder to make finer flour.

I am interested enough now in baking with spent grain that I have begun gathering recipes. So if you have a favorite, please send it to [me](#). One of the recipes I recently found is for spent grain dog biscuits. I feel compelled to make some and spread them around my yard.

References

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We are very thankful that Jim Wilson has so often volunteered to write articles for The Dregs and make presentations at our club meetings on technical brewing topics. “Professor” Wilson is currently preparing for a discussion at the August club meeting on wort aeration. If there is a particular aspect of aeration that you would like him to address, let him know. And if you think of a topic that would be good for a discussion at one of our upcoming meetings, also please let [us](#) know.

In his research Jim has come across a project that some of you might be interested in. It is the construction of a [Real Time Fermentation Temperature Monitor](#). This could be a very useful tool for you. Some examples of how it could be used include: establishing that the room or chamber you use for fermentation consistently maintains the appropriate temperatures; identifying that there was a period during fermentation in which the temperatures varied widely, perhaps due to an electrical outage or equipment failure; and explaining what went wrong with a batch of beer that turned out less than stellar. If you need more or better reasons, ask Jim Hilbing. He keeps extensive monitoring records. The cost of the monitor is estimated to be about \$70. If you decide to build it, we’d love to hear about it.

Several craft breweries have been, are beginning or are contemplating canning their beers. They claim that canning is a very good method for preserving and delivering their beers to consumers. But canning has been viewed by many as sacrilegious for craft beers because cans are associated with the mass produced commercial beers like Budweiser, Coors, etc. The [Alchemist Brewery](#), a small craft brewery specializing in unfiltered IPAs, goes even further by claiming you should drink right out of the can. John Kimmich, Owner, Alchemist Brewery, explains why in this [You Tube](#).

Ron Cooper found an article in [The Washington Post](#), in which it was reported American craft beers are shaking up the German beer market. Craft beers from the U.S. are being exported to Germany and sold in grocery stores. U.S. style craft breweries are being started too. Some German brewers say their only salvation is to abandon the 1516 purity law that they believe has hindered innovation.

And for those of you who want a technical discussion of Lambics, Rives Borland found a technical treatise entitled, “[Characterization of Aroma and Flavor Compounds Present in Lambic \(Gueuze\) Beer](#).”

Tell Us What Are You Doing

Your stories are welcome in The Dregs. Upgrade your brewery? Fine tune your practice? Take a road trip? Do well in a competition? Have recipes to share? Read a good beer book? Have club related pictures, especially for the Dregs cover? Send all those, or anything else you think would be interesting to [Rick Wirsing](#). Thanks!

What We Stand For

The objectives of the Strand Brewers Club are to brew beer and share information about the brewing, presentation, consumption, judging and history of beer. We promote and encourage homebrewing competition and hope to foster general goodwill through the making and consuming of this noble and most

excellent beverage. We aim to brew the best damn beer.

It is our policy to brew and consume beer strictly for fun. Under no circumstances does Strand support or condone in any manner the sale or barter of homebrewed beer, or the operation of a motor vehicle under the influence of alcohol by a member or a participant in any club event or the provision of alcohol to minors.

2013 Club Officers

President	Rives Borland	310-469-3634	president (at) strandbrewersclub dot com
Vice-President	Jeff Sanders	310-292-9301	vp (at) strandbrewersclub dot com
Treasurer	Brian Kellough	310-947-1855	treasurer (at) strandbrewersclub dot com
Activities	Tammy Minion	310-406-8057	activities (at) strandbrewersclub dot com
Communications	Mike Haisma	310-808-3614	communications (at) strandbrewersclub dot com
Editor	Rick Wirsing	310-872-9915	editor (at) strandbrewersclub dot com
Webmaster	Chris Voisey	310-941-4810	webmaster (at) strandbrewersclub dot com

Mentors

The following members have volunteered to answer your brewing questions and to help beginning brewers learn the craft. You should take advantage of their expertise.

Bill Krouss	310-831-6352	bkrouss (at) cox dot net	Rancho Palos Verdes
Dave Peterson	310-530-3168	diablo390 (at) aol dot com	Torrance
Jay Ankeney	310-545-3983	jayankeney (at) mac dot com	Manhattan Beach
Jim Hilbing	310-798-0911	james (at) hilbing dot us	Redondo Beach
Jim Wilson	310-316-2374	jim 7258 (at) gmail dot com	Redondo Beach
Steve Fafard	310-373-1724	sfafard (at) cox dot net	Rolling Hills Estates

TRUTH

