



Volume 7, Issue 2/Spring 2008

Beer contamination drops in 2nd Big QC Day

Big QC Day generated hundreds of more entries during its second year. Participating breweries should have received their results by the time this newsletter is published. The event again demonstrated the high level of quality of craft beer and new changes in the testing program this year shed light on other trends.

The results, the overall numbers of which are available at www.whitelabs.com, were broken down this year into individual results (which were sent directly to participating breweries and not shared with anyone else) as well as national as well as regional results, which are available on the White Labs website at www.whitelabs.com. The regional results are new this year and should help

Turn to pages 4, 5 and 7 for more news on yeast and White Labs.

brewers see not only how their beers compare to those thousands of miles away but also those in their own region.

The tests showed that brewers are making advances. Last year, 20 percent of the entries contained some level of contamination. This year, that number dropped to 16 percent.

The tests were designed as a relatively inexpensive

way to test many beers at one time and offer brewers an opportunity to learn more about their beers for consistency and quality reasons. Craft brewers often don't test as much as larger brewers for a number of reasons, including manpower, money and experience. Big QC Day was designed as a way to bring these important tests to the smaller brewers, and give those who already test regularly, whether big or small, an opportunity to see how their results compare to an independent laboratory.

Overall results for last year were printed in the MBAA Technical Quarterly.

Many new tests were added this year, including calo-
See "Big QC Day" page 2

CBC coming to home turf

White Labs is welcoming people to its backyard when the Craft Brewers Conference comes to San Diego. The company, which is based in the city, plans numerous functions, including some downtown festivities.

Please visit the booth for more details. The White Labs booth is located at #110 and 112.

CBQ sponsor Hopunion is at 114 and 116, and Cargill Malt is located at 330.

The event is returning to San Diego after just a five-year hiatus.

The World Beer Cup Gala Awards

Dinner will take place on Saturday, April 19, at the Town & Country Resort as part of the Craft Brewers Conference. The awards dinner will be paired with World Beer Cup winning beers. Winners of the 2008 World Beer Cup will be announced at the dinner.

Keynote speaker, Richard Doyle will open the Brewers Association's (BA) 25th annual Craft Brewers Conference on April 17th.

More than 1,600 of the world's brewers, brewery owners, and brewing supply professionals are expected at this year's CBC.

Overview of hop shortage

By Hopunion staff

In November Ralph Olson did a Power Hour presentation regarding the hop shortage that has turned the hop world upside down. We thought that we would share with you a brief overview of that presentation and some of the questions that followed from brewers.

Acreage Numbers

As you will see below acreage had steadily decreased, but is now trying to climb its way back up, however there are many obstacles in the way. The bottom line is that there are not enough hops being grown today to satisfy the needs of brewers and other usages. Many feel this number to be around 10-15%, or maybe more.

Turn to page 5 to find a diagram (graphic #1) of the hop acreage world-

Turn to pages 4-6 for more news on hops and Hopunion.

wide. The diagram reflects the acreage and the lbs in Mil., with a UK graph (graphic #2) following reflecting acres.

The following are some notes about the diagram:

- Increase of around 5,000 acres in the world.
- USA +2,200
- China +2,500
- Germany +1,200

See "Hops," page 3

Style Matters: Tips for making Belgian Trippels

In each issue, CBQ spotlights a particular beer style and provides tips from an ingredient and fermentation perspective. In this issue, we look at Belgian Trippels.

Hop Notes: This style of beer is extremely complex and harbors many competing flavors that tend to overshadow the presence of hops. A subtle floral or spicy variety is typically used. For this brew there are a number of varieties to choose from such as: Ger-

man Hallertau, Czech/US Saaz, German Spalt, Styrian Goldings, UK Fuggle, German Hersbrucker or German Select. With the hop shortage and limited availability of some of these varieties we would suggest using German Tradition, or domestic Vanguard. The hops you select should complement the clove-like phenols and sometimes fruity, citrusy, or spiciness which is commonly found in this style of beer. Bitterness can be medium to high and should be in the range of 20-35 IBUs depending on

your preference. Hop aroma can range from mild to none at all. Some commercial examples include: Bruggse Tripel, New Belgium Trippel, Westmalle Tripel, Val-Dieu Triple, La Trappe Tripel, and St. Bernardus Tripel. To view more varieties of hops for your brewing needs please visit our website at www.Hopunion.com.

— Jesse Umbarger, Hopunion LLC
See "Style Matters," page 8

QC Day again brings samples from afar

This year's Big QC Day has turned out to be quite an interesting event!

We have received many beer samples from across the country and around the world, and many returning participants.

For 2008, we have incorporated some new components to your beer analysis, including Real and Apparent Extract, Real and Apparent Attenuation, pH, and Calories.

We are currently using an Anton-Paar Alcolyzer, equipped with a density meter and beer color option in order to provide these more comprehensive results for you.

Each person in the lab has been working diligently to

From the Lab

Neva Parker



sample and test your beers over a three week period! Again, the samples are being tracked through each step of the QC Day testing procedure using the Yeastman

bar-coding and tracking system to ensure ease and accuracy of the reporting.

We hope you find these test results valuable, and that you continue to participate in this industry-wide event!

Editor's note: The proceeding report was written prior to the completion of testing. Those wishing to provide feedback about the results of the testing are invited to write Neva at neva@whitelabs.com.

Additionally, results breaking down the testing by style and region are available on www.whitelabs.com. Turn to page 1 for more information on Big QC Day.

Neva Parker is the lab manager for White Labs. Write her at neva@whitelabs.com.

Big QC Day

From Page 1

ries per 12 ounces. The complete lists of tests, which were sent via mail to participating breweries, follows. Additionally, review Neva Parker's column on page 2 for more information on Big QC Day.

Testing Note: All of the tests and samples were tracked using our in house Yeastman computer tracking program. Each test sample was bar-coded, and these labels did not identify the beers or the brewery, eliminating any potential for bias.

IBUs:

The IBU scale provides a measure of the hop derived bitterness of beer. The higher the IBU value, the greater the bitterness. Porters range between 20 to 40, for instance, while India Pale Ales are 40 or higher.

The American Society of Brewing Chemists International Method, bitterness units, is used. Iso-alpha acids are chemically extracted using the organic solvent iso-octane. The ultraviolet light absorbance is measured in a precision spectrophotometer, and the results are reported in bitterness units.

Alcohol: We use an Anton Paar Density Meter DMA 4500 and Alcolyzer Plus. Results are reported as percent vol/vol.

Density:

This is the specific gravity of the beer. Values depend on styles. We use an Anton Parr Density Meter DMA 4500 for this test, which gives us a high degree of accuracy.

Apparent Extract:

This test shows you the sugars that are left in beer, usually nonfermentable carbohydrates. Apparent extract is before the correction for alcohol. Results are reported in degrees Plato.

Real Extract:

This test shows you the sugars that are left in beer, usually nonfermentable carbohydrates. Real extract involves accounting for the alcohol, which we were able to do since we measured alcohol in the samples. Alcohol has less density than water, so if you measure straight density it does not account for the subtraction of alcohol. Results are reported in degrees Plato.

Apparent Attenuation:

Attenuation is expressed as a percentage of the difference between the original and final gravities of the

beer. Apparent attenuation is before accounting for ethanol, which has less density than water. Attenuation will vary by beer and yeast strain, typical ranges for apparent attenuation are 65-90%. We include apparent attenuation and apparent extract in your results so you can compare in house brewery data.

Real Attenuation:

Attenuation is expressed as a percentage of the difference between the original and final gravities of the beer. Real attenuation accounts for ethanol, which has less density than water. Attenuation will vary by beer and yeast strain, typical ranges for real attenuation are 65-80%.

Calories:

Calories are calculated from the data and reported as kcal per 12 oz serving of beer.

pH:

The pH of beer is an important indicator of quality and consistency. A high pH can result in flavor problems and make the beer more prone to contamination. We use a pH probe to measure the pH of each beer. Typical pH values are 4.2 to 4.6.

Color:

A spectrophotometer is used to measure the absorbance of a sample at a certain wavelength. The sample is separated from solids, and the absorbance at a wavelength 430 nm is measured. The number will show how light or dark the beer is. It can vary between 2 Lovibond to 100 Lovibond. A stout obviously would be high because it is dark.

Wild yeast:

This test was conducted using Lin's Cupric Sulfate, or LCSM. This medium uses cupric sulfate to inhibit the growth of brewers yeast. This medium ensures no contamination of non-Saccharomyces wild yeast. Again, the information concerning numbers is the same for wild yeast as the contaminants listed above under anaerobic and aerobic bacteria. In other words, under 10 meets the industry standard, 10 or more indicates problems. Typical off flavors produced by wild yeast would be phenolic and band-aid flavors.

Aerobic bacteria:

This test was used with Wallersteins Differential, or WLD, medium. This medium is used to check for bacteria and some non Saccharomyces-type wild yeast. Most

aerobic bacteria will grow on these plates, and some anaerobic bacteria also display growth. Bacterial contamination seen on these plates is termed "wort bacteria" because they are most often associated with wort contamination, usually causing most of their damage before the onset of fermentation.

As for the numbers, the same applies to aerobic bacteria as in the paragraph above about lactic acid bacteria, or anaerobic bacteria. Sometimes aerobic bacteria are already dead by the time this test is performed, after fermentation and packaging, but they could have contributed to off flavors.

Positive aerobic bacteria results can be from sample collection, follow up tests are usually done to confirm contamination of product.

Lactic acid bacteria (or anaerobic bacteria):

This test was conducted using Hsu's Lactobacillus medium, or HLP. This medium is used to look for the presence of Lactobacillus and Pediococcus. These bacteria are anaerobic, heat sensitive bacteria.

They are called "beer spoilers" because they are most often associated with post wort production contamination. The industry standard is less than 10 colony forming units (CFUs) per ml. If the CFUs are over 10, the beer may develop flavor problems. However, any CFU's found from this test should cause concern and an evaluation of your brewing and packaging process.

Total VDK (including diacetyl):

VDK is measured on our Perkin Elmer Clarus 500 Gas Chromatograph and Headspace Sampler. VDK (vicinal diketones) consists of diacetyl and 2,3-Pentanedione. The test includes heating the sample, which drives diacetyl precursors to diacetyl.

The lower the number the better, in most cases. If you are under 100 ppb you are doing well. The numbers vary depending on the yeast strain and fermentation procedure. If the number is high, perhaps in the 200 range, the brewery may not be performing an adequate diacetyl rest.

Or again, it could be the yeast strain. Examples of strains with higher VDKs are the British strains and some lager strains. Very high VDK levels can be an indication of contamination. Additional tests can be performed that can separate diacetyl and 2,3-Pentanedione levels.

Belgian styles gaining in popularity at the right time

Everyone in beer knows this is a time when Belgian styles in many places are a big hit with consumers. The proliferation of Belgian-style beer bars in metro areas is one example, as is the recent ranking by a major consumer magazine of the best beer bars - almost all of which have a wide selection of Belgian-style beers.

This creates a splendid opportunity for craft brewers for a number of reasons. Crafting a Belgian style should meet with enthusiasm from consumers who if they are not already fans of the style have surely been made aware of its flavor possibilities through the extensive media coverage of these beers.

What's more, it's a wonderful opportunity to create beers with less intensive hops, and is thus the perfect style for these days when some popular hops are in shorter supply.

We are already seeing a new generation of brewers in North America expanding the traditional standards of Belgian styles, creating something of a Belgian-American hybrid. If you have not already dabbled in these styles, now is the time to start.

If you are looking to expand your Belgian offerings or considering crafting them for the first time, here are a few tips to consider:

Fermentation: Some brewers of Belgian styles do not bring their beers to dryness on the belief that consumers are expecting some residual sweetness. I believe this



Letter from
the President

Chris White

perceived expectation is wrong in most cases and regardless well-crafted Belgian styles might have a hint of sweetness even if they are actually very dry. Consider Chimay may have perceived sweetness but that is the fruitiness of the beer, a contribution of the yeast. The beer is actually very dry.

Sanitation: Farmhouse styles bring up some wonderful thoughts and images, but we don't actually have to be brewing around pigs to create great beers. Nowhere is sanitation more critical than in making Belgians, especially considering the need to protect your regular beers from contamination.

This is especially true if you are using *Brettanomyces* or bacteria. Nowhere is sanitation more critical than in making Belgians, especially considering the need to protect your regular beers from contamination. This means having extra hoses and supplies for your Belgian-style

If you have not already dabbled in these styles, now is the time to start.

beers, for instance.

Styles: Think beyond styles - think like Belgian brewers. Just create a beer as a piece of art and think about what style it will go into later.

Yeast: Yeast combinations can be good. We have a Belgian yeast blend (WLP575) that is part Trappist, part Belgian Ale (these are not strain names, but a reflection of these styles), and it makes an interesting and complex beer.

The Belgian Ale aspects provides the earthiness and balances the fruitiness of the Trappist-style strains.

Let us know if you have any questions on how you can use yeast to make better tasting Belgian-style beers.

Chris White is President of White Labs Inc. He has a Ph.D in biochemistry. Feel free to write him at cwhite@whitelabs.com about this column.

White Labs employees team up to fight breast cancer

They do it because 'everybody deserves a lifetime'

Letter from White Labs:

We, at White Labs, have taken on an incredible challenge. On November 21, 2008, several of your favorite yeast ranchers will be walking 60 miles over the course of three days, camping out at night with thousands of other women and men taking this journey with us.

It's for an event called the Breast Cancer 3-Day, which benefits Susan G. Komen for the Cure and the National Philanthropic Trust Breast Cancer Fund. Every advancement in breast cancer research, treatment, education and prevention in the last 25 years has been touched by a Komen for the Cure grant. They are working hard to build a future without breast cancer, and our team plans on raising \$25,000.00 to help bring us closer to that goal.

Our team name is Beer for Boobs. All the ladies (and maybe some dudes) who will be a part of this team think we should live long enough for our boobies to enjoy all the great beer in this world. What a cause right?! Please consider making a donation of \$50.00. You can donate online at www.The3Day.org. Please also ask your employer if they will double your donation with a matching gift.

Without a cure, one in eight women in the U.S. will continue

to be diagnosed with breast cancer. That's why Lisa White, Ashley Paulsworth, JoAnne Carilli-Stevenson, Meg Falbo, & Stefanie Wacker have already committed to walking in the 3-Day. Because everyone deserves a lifetime.

Just follow the link at www.the3day.org to visit our team page to make a donation. You can donate to any of the team members on Beer for Boobs. Please search for our team name when you donate. If you don't want to donate online, please download and print a donation form and mail it to the address on the form. Or you can call 800.996.3DAY to donate over the phone. We would like to reach my fundraising goal by July 4th, so don't delay!

Thank you for your support. If you have a story about how breast cancer has touched your life, please share it with us. All of our team member would love to know how we are walking for you. Maybe we are walking for your mom, your sister, your wife, your friend...maybe for you.

Sincerely,
Lisa White

Beer for Boobs, Team Captain

P.S. Soon, we will be offering special sponsorship for the t-shirts we will be selling and wearing on our 60 mile trek.

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Hops

From Page 1

- Note- Small decrease in other countries.
- Increase worldwide is equal to less than 5%.

The facts of the matter is that poor prices to the grower brought on by the over-surplus of the mid 90's resulted in many growers either reducing their acreage or getting out of the business all together. This excess inventory that kept feeding the market even after the acreage was at a critical point for supply and demand, has not ran out. This is leaving us with a result of a worldwide market driven by large breweries. Panic has sent in as some of these large breweries realize they don't have enough hops, and they end up offering large amounts of money up front to get hops from anywhere.

The farmers have their own obstacles to overcome such as the decrease of the number growers that are still remaining. There is not an infrastructure in place to help the farms to grow/increase acreage rapidly, and it is very costly to increase the acreage due to land value and limited acreage available. The materials needs to set up new acreage such as the hop poles and increased labor. Also the future of some farms could be at stake as the younger generations fine other occupations. Graphic #3 shows the reduction of farmers in this industry.

What we anticipate seeing happen is low yielding hops being taken out – aromas in particular, and other varieties being planted. The shortages will probably be worse before they start to get better, which will spur changes in brewing practices and in changes in what hops a brewer uses, which we anticipate to be more high alphas due to what growers will be planting on the horizon.

A lot of brewers wonder why they can't get a particular variety. This is due to the yield of the hop; it's susceptibility to disease, the limited acreage, (which many are less than 100 acres), the major demand for the hop, but most importantly the typical yield of the variety.

Graphic #4 shows seven of the most widely planted varieties in the USA and the percentage of total acreage they represent from 2006.

In conclusion, this impacts the craft brewing industry by creating shortages of not only particular varieties, but hops in general, and these shortages will not be going away soon. There is also the competition with the world brewing industry that puts a further strain on the already tight situation. In the end brewers may have to look at other downstream products for aroma and bittering. Brewers need to be prepaid for prices to remain high and for payment on hops to be due sooner.

Below are questions that brewers sent in, with Ralph Olson's answers.

Many seem to be purchasing multiple years worth of hops of various types. Obviously, if this behavior is now the norm, short term supply won't be able to keep up with demand even if every harvest was the best in years. What are your thoughts about changes in purchasing behavior over time? Won't a hoarding mentality cause greater price swings than other institutional shortages in the short term?

Dealers like to get long term contracts, first because this locks a customer up for a long period, so effectively keeps that person with the dealer. It also gives the dealer some idea about the future and what brewers are thinking. There is some good to doing long term contracts, but you are right about the hoarding mentality. The bigger

Turn to page 6 to read about how the hop situation is leading to changes in hop contracting for brewers large and small.

problem is that we will be lacking all the hops needed in the coming years and contracting, while helping some, doesn't really answer the shortage. What we really need is for brewers to understand that it's OK to have longer than a one year supply of hops. I constantly get calls from brewers who are out of hops in September and October. Traditionally brewers would carry a 6-12 month carry over supply, so come harvest time they would have an 18-24 month supply at that time. This gave the brewers hops that might be needed right away. An extra inventory of hops can come in handy should sales go better than normal during a given year. Traditionally future contracts would be kept conservative, but it was not unusual to see 3-5 year contracts done in the past. It is especially important to have some excess inventory if a brewery uses pellets or extract because that product does need to be processed by the hop merchant. More on that with a question asked below.

When will pellet hops become available - when will 2007 orders be ready to ship?

The biggest problem here is that brewers don't understand very well, the time it takes to process hops. We have two shifts running here, and we use the facilities at Yakima Chief as well. Even with three shifts, we will be pelletizing thru February and most likely into March of this coming year. Most runs will take a week or two to complete. I used to run the hops that we were out of first, but today when you are out of everything, this becomes a real problem. I have people asking for every variety and they just can't be run all at once. The other processors of pellets and extracts often run into June or later. In the past, when inventories were plentiful, one could just ship off the shelf to the brewer who needed some variety quickly. Today with hops being short, there is very little on the shelf to send out. I understand this shortage is also affecting lots of major breweries around the world who are also short on hop inventories.

Is the volume of hops tied up in contracts this year much greater than last year? Are you seeing a lot more craft brewers, who in the past bought hops on the spot market, now signing contracts for 2008?

I would say that the contracting has been picking up every year in a slow, but methodical way. I think now that things are short, this can accelerate, but it is very difficult to just sell hops if you are still buying them. I am working on deliveries and prices for 2008 with growers at a meeting this week, but with the market being so high, this is not an easy process. Growers are wanting or expecting big dollars for the hops. One must be careful to not sell something they don't yet have.

How does this shortage affect the supplier's ability to store hops?

The difficulty in storing hops, especially for craft brew-

ers is the many pieces that we have to look after. While we will continue to store hops, this is a very difficult thing to do. Keeping track of it all is a nightmare to say the least, but we do understand many breweries don't have room themselves. I think this was something that most traditional brewers always made room for a fair supply of hops. Many brewers today don't put the same emphasis on storage for materials. Good question and one that I wrestle with all the time.

Which varieties, if you are willing to say, are going to disappear/be phased out/too limited to count on acquiring in the next few year?

The varieties that will go out are the lower yielding ones. Unfortunately aroma hops tend to be lower yielding than high alpha hops, but some in particular are difficult. Worst ones would be US Hallertau, US Fuggle, US Tettnang, US Golding, Horizon and another one that can be tough could be Willamette if for no other reason, one major brewery buys virtually all of them. I think most of the popular hops are pretty much sold out. I have been buying from Europe to see here on the open market. They are expensive over there, but have had some success. US hops that are sold out for this year however, will pretty much remain that way.

Do you find that craft breweries have been contracting out more hops than required as a response to this scarcity? Do you see some hops coming back on the market in 2008 as a result of this?

There is always the hoarding game when a hop is scarce. We try and be careful when selling to keep this from happening, but is really difficult to know when someone might be doing this. I do think the higher prices, has put a damper on hoarding to some extent. People have to think twice when spending large amounts of money like we are doing today. I have the same problem as I also have to pay the higher prices and I have to worry now a little bit about the cash flow and if maybe I am paying too much and will be stuck with a high priced hop.

Being a smaller brewpub, how do I get my suppliers to listen to my projected needs, minuscule as they are in the global market? I get the feeling from the suppliers that what our needs may be are often not worth bothering with.

Sometimes it must feel like that, but from a personal standpoint that is not very good business as sometimes the little pub or the brewer from that pub might become a large brewer. The problem comes from just being short of hops and it does have a paralytic affect on how we do business. It is a lot easier to sell hops when the cupboards are full.

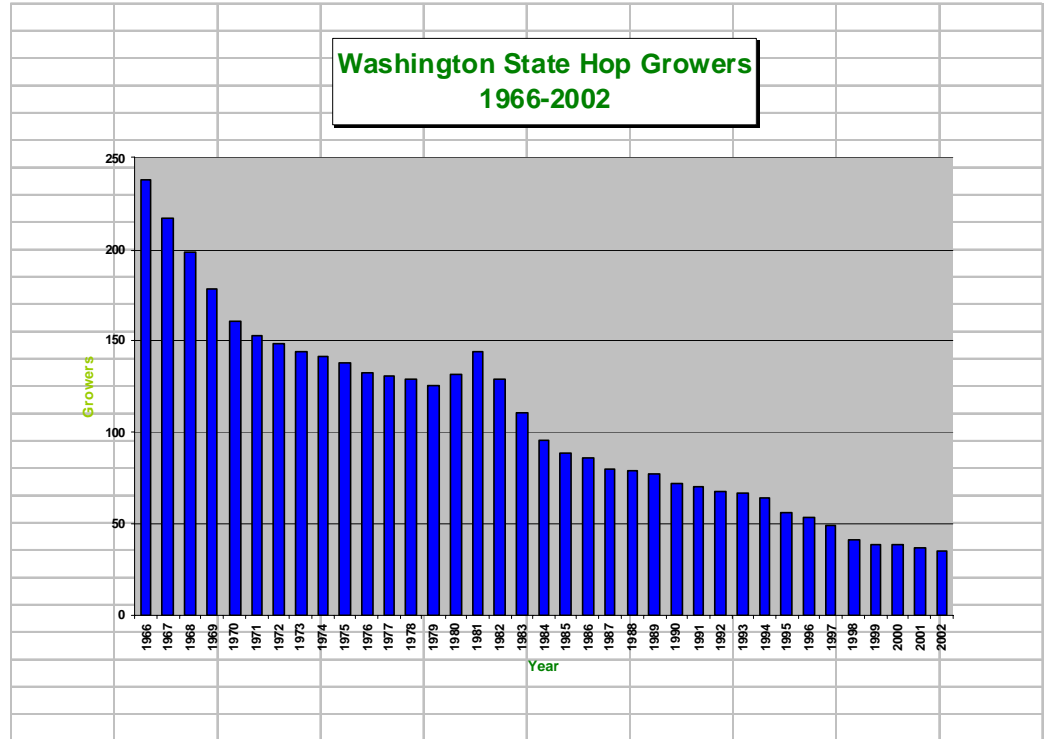
This shortage is aging me fast.

Hop shortage charts from Ralph Olson talk

Graphic #1

Graphic #1 shows the hop acreage world-wide. The diagram reflects the acreage and the lbs in Mil., with a UK graph (graphic #2) reflecting acres.

	1986	1992	1996	2006
Acres				
US	25,000	42,266	44,161	29,435
GDR	54,409	56,680	53,897	41,247
REST	136,187	137,121	105,480	42,735
TOTAL	215,596	236,067	203,538	113,417
LBS in. Mi	1986	1992	1996	2006
US	49,053	74,337	74,971	53,814
Germany	75,288	64,239	81,571	62,832
Rest	134,040	130,102	124,021	62,122
Total	258,381	268,678	280,563	178,768



Graphic #3

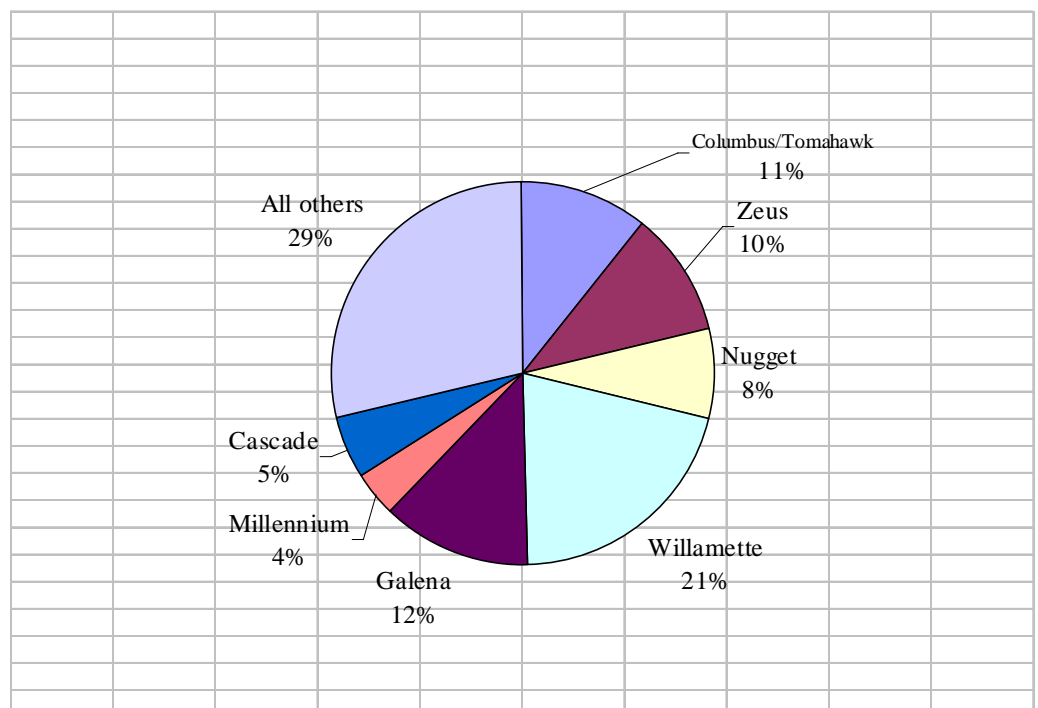
Graphic #3, above, shows the reduction of farmers in the hop industry.

Graphic #2

United Kingdom:					
Year	1850	1976	1986	1996	2007
Acres	53,500	17,000	12,000	7,700	2,400

Graphic #4

This graphic shows the seven most widely planted varieties in the USA and the percentage of total acreage they represent from 2006.



Changes in hop contracting for all breweries

By **Jessica Dickinson**

As many brewers are aware, every year you had the option of contracting hops just prior to the actual harvest, or to simply purchase hops "off the shelf" from most suppliers. However with the hop shortage in full effect, the ease of both of these options has now dwindled down to almost non-existent. Now, many breweries are requesting quotes for future crops before the current crop has even been fully harvested.

Here at Hopunion, we have been bogged down with constant quote requests from our faithful customers; however at this time we are not able to quote as we would like. This process is starting four months sooner than usual leaving the growers less able to estimate the poundage they may be able to deliver, as they are unable to take into account weather, water supply, and pest issues.

We wanted to apologize to everyone who has a request already in with us, for the slowness of speed with which we are required to address these requests. The great fear is that if we move to quickly, before getting pricing and availability nailed down with the growers, we could

end up doing more harm than good. It is far too easy now days for one simple error to cause major problems for many brewers. Though prices are still high, we want to ensure that our pricing is fair, and that the hops you contract with us, will be here in house once harvest has ended. We, of course, cannot account for a less-than-average crop year, natural disasters, or even hop fires.

The days of consistently being able to call in for "off the shelf" sales has sadly ended for now, though we hope for its return in the years to come. Contracting has and will always be with the industry and as a rule is a very smart way to ensure that you will have exactly the varieties you will need, when you need them. The biggest key to contracting is to contract for enough hops to see you from March to March every year, as there is no longer an excess of the previous year's hops to see folks through till the newest crop is ready to ship. The old way of contracting was to set the contracts up from September to September, however this can no longer be the case if you wish to have a constant supply of the hops you need. Brewers must keep this in mind when submitting their quote

requests. The poundage they will be asking for from the 2008 crop must be able to see them through till March of 2010 to ensure uninterrupted hop supply.

Here at Hopunion, we are pelletizing hops every year all the way through March, and varieties have to be done one at a time, making it a guessing game as to when a particular variety will be ready to ship. I believe that most breweries are unaware of this, and do not realize the amount of time that it takes to pelletize, and even to break down raw hop bales into smaller contracted sizes. This all takes a great deal of time to do, and a lot of man power to get it accomplished as quickly as we do every year. Patience with this process is sometimes hard to come by, but please know that it takes time to get it all accomplished and with crews running around the clock during harvest time, we will get there in the end.

Another issue that some of you are already acquainted with, is inventories needing to be paid in full sooner than in previous years. This is due to the changes in the market, and to keep competitive with foreign buyers/breweries that are willing

to pay up front for all of their hops at the time of harvest. By requiring payment from breweries sooner, we are then able give the growers a better turn around on their hops, and it increases the chance of the hops staying here in the US.

You will also see a stronger request for inventories to be shipped out as soon as possible as well. With the increase in shipping costs, it is actually beneficial for breweries to ship as much as possible with each shipment which will reduce shipping costs for most breweries. The reason behind this request is so that the hops are at your facilities, and freeing up room here, due to the immense demand for inventories, we are running out of space for all of them.

Sadly the old days of hop buying are long gone, and a new way of life has emerged, that for many will be hard to adjust to. Just know that we are in the struggle with you and are trying to do all that we can to ensure we have enough hops to meet demand, but please know that even the best laid plans can fall short of expectations.

Hopunion profile #1: Blake Cruzen

Blake was born in Anchorage, Alaska in 1973 and then moved to the Yakima Valley before he was a year old and has made his home here ever since.

He attended Naches Valley High School and then completed his college education at Central Washington University with a Bachelor of Science Degree in Accounting.

While in college, he had several jobs to help pay for his schooling from janitorial work for the college, forklift driver, Pepsi delivery driver, a long haul semi-truck driver for a hay company in Ellensburg and coaching high school baseball.

Following graduation, Blake's first accounting position was with the Yakima County Treasurer's office where he worked for a little over a year before obtaining his first financial position in the hop industry with Yakima Chief, Inc., where he started as the Assistant Controller and being promoted to Controller.

After more than five years with Yakima Chief, Inc., he decided that the daily 90 mile round trip commute to Sunnyside was

getting too expensive and tiresome so he took a position in Yakima with US Bank Business Lending as a Commercial Loan Officer.

But, he missed working in the hop industry so when he heard of the opening with Hopunion, LLC, he knew it was an opportunity he did not want to pass up.

He started with Hopunion July 2007 as their Chief Financial Officer/Controller and is very happy to be back doing accounting work and most of all being back in the hop industry.

Who doesn't like beer?

Other important aspects of Blake's life are that he is a volunteer fireman and EMT for his community fire department for the past 10 years and is a high school & college basketball referee for the past 14 years. Blake enjoys hunting & fishing, a fan of major league baseball, college basketball, football but most importantly spending time with his wife of 11 years, Kim and their two children, Corissa (8) and Mitchell (5).

Hopunion profile #2: Jesse Umbarger

Jesse was born and raised in Los Alamos, New Mexico and if you ask him he will tell you that he glows in the dark. At age 17 he learned how to homebrew from his uncle who took first place in a state fair brewing competition. From that point on his heart and mind were consumed with the desire to learn as much as possible about the art and science of making beer.

As he continued home brewing and pushing the envelope of creative possibilities, he realized that attaining a formal brewing education would be necessary if he were to turn his love for beer into a life time career. In 1996 Jesse received a diploma from the world renowned Siebel Institute of Brewing Technology in Chicago, Ill. Shortly after graduation he got his first head brewer job in Albuquerque, New Mexico where he learned many lessons in how not to operate a business. Over the next 10 years he was the Brewmaster for a number of breweries in New Mexico, Washington, and Oregon. (Rio Bravo Brewing Co, San Ysidro Restaurant and Brewery, Bavarian Lager Cellar, Wild Duck, West Brothers, Ice Harbor, and Steelhead Brewing company) He claims to have a PhD in restaurant/brewery operations. After experiencing firsthand the many obstacles and pressures that force small businesses to close their doors, he realized how important finance and accounting are to any business. Soon thereafter Jesse enrolled and graduated from the University of Oregon with a Bachelor of Science degree in Accounting. The day he turned in his last paper and took his last exam, he went home to drink a frothy brew in celebration. As he walked in the door, the phone rang. It was Ralph Olson from Hopunion...

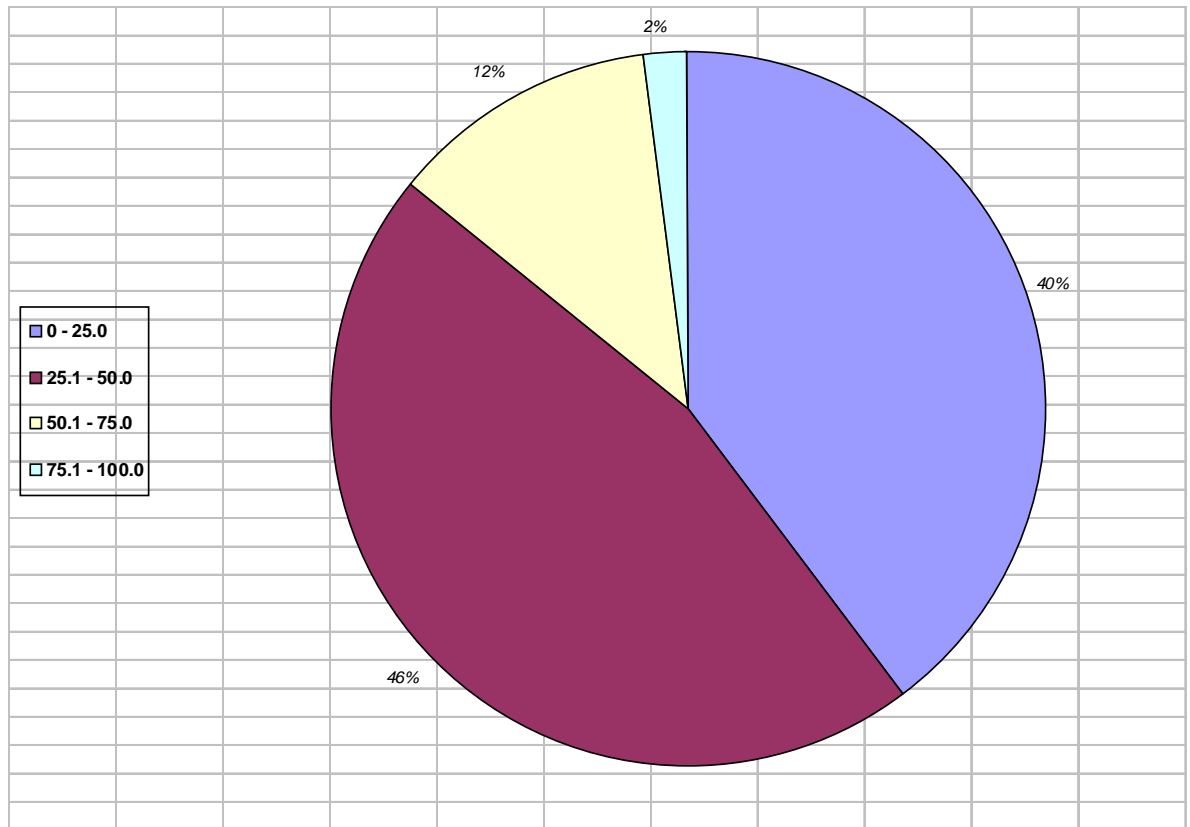
The rest of the story can only be told by father time.

Big QC Day results: Data varies significantly by region

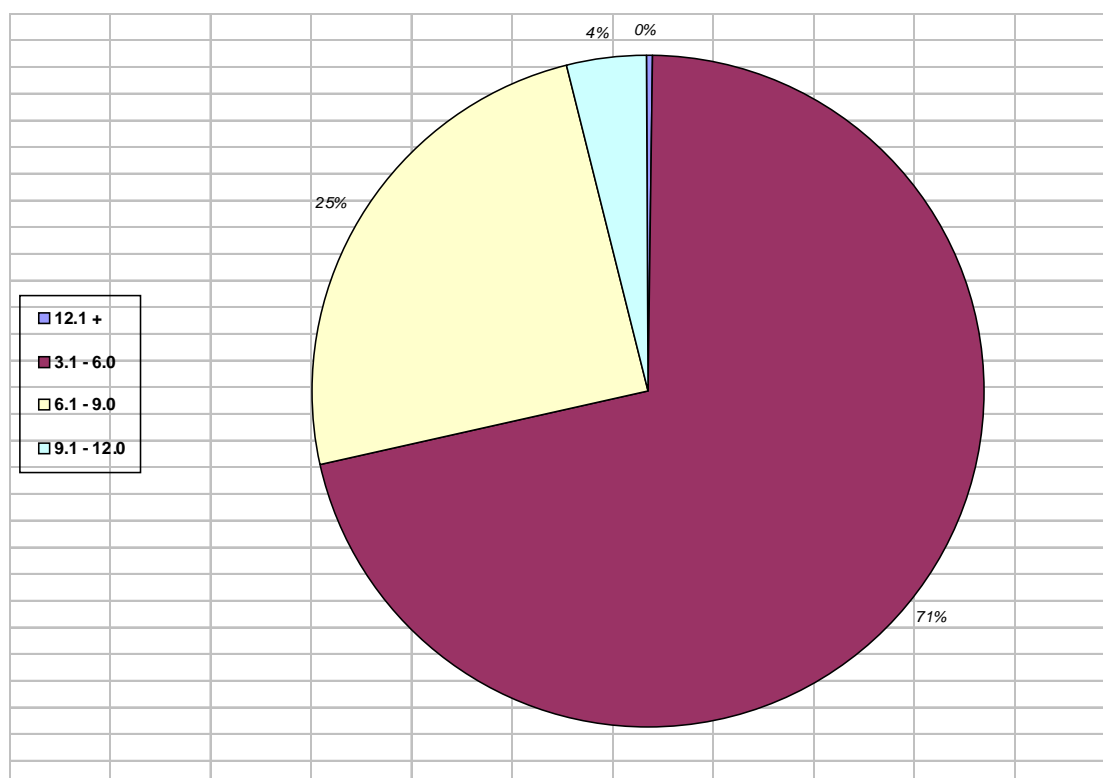
Editor's Note: Over the next few issues, Craft Beer Quarterly we will take a closer look at some of the results of Big QC Day, a White Labs Inc. beer testing marathon that took place in February and March. The tests collected information on beer from all over North America. In this issue we focus on IBUs and alcohol. Full results are available on the White Labs website, www.whitelabs.com. Read Page 1 and Page 2 for more information on Big QC Day.

IBUs (at right)

The graphic is self explanatory about the bitterness ranges of beers entered into Big QC Day. But there is a lot more beneath the surface. When broken down by regions, the Northwest had the most aggressive beers, with 23 percent of the entries with IBUs of 50.1 or above, followed by the Southwest, 14 percent, the West and Midwest, 12 percent, the Northeast, 10 percent, and the South, 8 percent. By far, the Northwest also had the lowest number of entries with IBUs less than 25 (23 percent). The region with the largest number of entries under 25 was the Midwest, with 50 percent.



Big QC Day alcohol results vary by region



Alcohol (at left)

The graphic shows that the great number of beers had moderate alcohol levels of between 3.1 percent to 6 percent. This is consistent with regional results. However, when it comes to big beers, the Northwest again takes center stage as the home of aggressive beers. Forty-four percent of beers had alcohol levels between 6.1 percent to 12 percent. The Northwest was followed by the Southwest, 34 percent, the West, 33 percent, the Midwest, 28 percent, the Northeast, 22 percent, and the South, 20 percent.



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Attention brewer

Craft Beer Quarterly

The Back Page

New items available at Whitelabs.com

Title: "Studies on Fermentation"

In 1876, Louis Pasteur published his groundbreaking volume, *Études sur la Bière*, soon translated into English as *Studies On Fermentation*.

The book changed the course of brewing during the late 19th and early 20th centuries, representing a huge leap forward in the scientific understanding of the processes involved in beer-making.

Brewers around the globe put Pasteur's findings to work in their breweries, and thus plunged the industry headlong into the modern era.

In tribute to Pasteur's tremendous contributions to brewing science, *Studies On Fermentation* has been reprinted exactly as it appeared when first released in English, complete with all of Pasteur's illustrations. An original 1879 edition was digitally scanned, professionally enhanced and reproduced in a hard cover format.

Cost: \$34.95

Title: "Compendium of Brewing Research: Yeast"

This publication includes 277 articles published in the Journal of the American Society of Brewing Chemists from 1997-2005. The compendium covers a wide array of yeast-related topics including: yeast strain selection, yeast culture maintenance, yeast propagation, yeast vitality and viability, yeast production of key flavor compounds in beer, yeast handling practices, and more. This unique collection of yeast-related articles is available to the global brewing industry in the form of a CD searchable by any keyword(s) or topics of interest.

Cost: \$45.

Title: "The Alcohol Textbook"

This is the definitive work for those wanting to learn more about producing alcohol, and has been particularly popular with distillers.

This is the 4th Edition of the book.

Cost: \$200

Focus on the new Yeastman :

Yeastman, which could change the way many people procure yeast, is reaching a higher level of development.

The system tracks yeast through each stage of development. The benefits are many. This system allows us to provide greater customer service, as we can quickly review a culture's history when we field questions from customers. We also use the tracking system for testing purposes, such as during the recent Big QC Day (for more read the stories on Pages 1 and 2).

The benefits are more than an in-house tool. We want to offer customers instantaneous information on yeast availability and pricing, including for international customers, and this system will allow us to do so. However, those wishing to order as they have in the past, including by phone or fax or email, will of course continue to be able to operate in this way.

The system, which is still in development, will be shown to attendees at the Craft Brewers Conference in San Diego. The system will serve homebrew stores and professional brewers, although homebrew stores will begin using the system sooner as these customers generally have less customizing in their orders.

So come by the White Labs booth at the Craft Brewers Conference to learn more about this system and how it can help your brewing.

Style Matters

From Page 1

Yeast and Fermentation Notes: The spiciness and fruitiness of this style is going to come from the yeast strains. A couple of obvious choices are the Trappist or Abbey yeasts. The Abbey is going to be less fruity and a bit more earthy.

The trappist is the most popular, perhaps because people like the fruity aspects of this strain. Both are tolerant of high alcohol levels.

Alternatively, a few people have used our Belgian ale yeast, which is more phenolic but more versatile as well.

It can be used to make other styles such as a Saison or a Wit. These are high-gravity beers, so pitch a lot of yeast and aerate well. If you bottle condition, you will want to use fresh yeast.

— Chris White, White Labs