

Craft Beer Quarterly
P.O. Box 12636
Pleasanton, CA 94588
cbqmag@aol.com



"A resource for
craft brewers and
homebrew shops"

Sponsored by Cargill Malt, Hopunion CBS and White Labs

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The malting barley crop report for 2003

By W. J. Ladish

Overall US

The USDA National Agricultural Statistics Service released its estimate of barley production on September 30, reflecting conditions as of September 1. Total US barley production is estimated at 276 million bushels, or 6.13 million metric tons. This is down 2% from the previous estimate, but represents a pleasing 22% increase from the troubled 2002 crop (226 million bushels). Average yield was estimated at 58.9 bushels per acre, up a

Find more news about the world of
malt and Cargill on pages 2-3.

significant 4.0 bushels per acre from 2002. The acres harvested was down 4% from the previous report, due mainly to dry conditions in the Western states, but still up 14% from last year. Barley stocks in all positions as of September 1 totaled 239 million bushels, up 7% from a

year ago.

Upper Midwest

The Midwest produced a fine crop in 2003. North Dakota production is estimated at 118.8 million bushels as compared to 57 million bushels in 2002. Bushel per acre yields are projected at 60 as compared to 46 last year. North Dakota will have a higher than average selection rate due to an excellent growing season. Precipitation came much earlier in the crop development cycle in North

See "Malt barley crop report," page 6

Craft Brewers Conference approaches in San Diego

White Labs, Siebel host yeast seminar

The Siebel Institute of Technology and White Labs Inc. will present the Yeast Management Workshop at the 2004 Craft Brewers Conference in San Diego.

Designed and conducted by Lyn Kruger and Chris White, this 4-hour presentation will address critical issues in yeast selection, propagation and management in the commercial brewing environment. A wide range of topics will be covered including:

Yeast propagation; yeast cropping / harvesting; yeast storage - options and variables; yeast pitching techniques; basic media plating; aseptic sampling; and yeast mutations and changes

in performance.

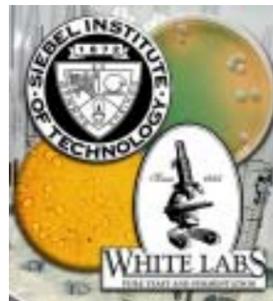
This is an excellent seminar for any brewer dealing with yeast and fermentation. Comprehensive workbooks

will accompany this presentation, and attendees will have the opportunity to participate in an extensive question and answer with these two yeast management experts.

The Yeast Management Workshop will be held on Wednesday, April 14 from 9 a.m. until

For more CBC news, turn to the back page. Pages 4-5 feature more news about yeast and White Labs.

See "Yeast workshop," page 5



More on the Craft Brewers Conference:

— *Craft Beer Quarterly* is helping to sponsor the 2004 Craft Brewers Conference in San Diego. Page 8.

— Also at the show, White Labs will have a special open house at their facility at 7564 Trade Street on Saturday, April 17. Page 8.

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— The Redsell family resume. Page 7.

A Hopunion special: Growing your own hops

By Lisa Olson
RNV Enterprises, L.L.C.

Spring is the time of year when everyone starts to think, "I gotta get a hold of Lisa and get my hop rhizomes." Some of you may be wondering, What are hop rhizomes?

Hop rhizomes are little roots from a hop plant. And a hop plant is a perennial plant that produces little cones or flowers called hops, which are one of the main ingre-

dients in brewing beer. In the springtime, everyone is rushing to get their new roots planted, because the spring into the early summer is when the vine of the plant starts to grow rapidly. Sometimes up to 12 inches a day under ideal conditions, but most grow approximately 2 feet per week.

The sidearms, which grow off from the vine, bear the hop cones. When this happens it is known as flowering. In order for flowering to occur, the weather must be

Turn to pages 6-7 for more news
about Hopunion.

frost free for about 120 days, the plant must have ample moisture, and there must be plenty of long length sun-

See "Growing your own hops," page 7

Malting barley crop report

From Page 1

Dakota this year than last. The majority of the significant rains occurred from May 4th to June 1st with timely and welcome rains thereafter. Dramatically less rain fell in August. Harvest conditions were dry. The southwest corner of the state will see average to below average selection rates due to late season high temperatures. Sixty bushels per acre is close to 1992's record of 65 bushels per acre statewide. We have heard reports of 80 to 100 bushels per acre at some locations.

For the three-state area of North Dakota, Minnesota, and South Dakota production is estimated at 134 million bushels as compared to only 65 million bushels in 2002. Thus production approximately doubled. Estimates presented at this year's MBAA convention in Milwaukee indicated that, for the 3-state area, the production of malting barley as a fraction of total barley increased from 28% in 2002 to 75% in 2003.

North Dakota State University conducts an annual barley quality survey. A summary table is presented below. The 2-row is predominantly Conlon.

Row Type	2-row	2-row	6-row	6-row
Crop Year	2002	2003	2002	2003
On 6/64	93.2	93.7	79.6	80.2
Moisture	12.7	11.4	13.0	12.5
Protein	12.7	12.4	13.1	12.6
DON	0.0	0.0	0.3	0.3
Test Weight	47.9	49.3	45.9	48.2

Western States

Total barley production for the seven Western states, as estimated by USDA-NASS on September 30th, was 117 million bushels as compared to 133 million bushels in 2002. Note that this is a decrease, in marked contrast to the Upper Midwest. The primary cause was hot and dry conditions in Montana and Idaho in July and August. Production in the Western states as a fraction of total production was 51% in 2001, 59% in 2002, but dropping to 43% in 2003.

Information was presented at the recent MBAA convention in Milwaukee as to the forecasted production of malting barley varieties in the West and the likely selection percentage. These are private estimates, not government estimates. Estimated selection rates ranged from 40% in California and Montana to 76% in Idaho and Wyoming, and 80% in Oregon. The overall estimated selection rate was 64%, resulting in an estimated availability of acceptable malting barley in the West of 43.75 million bushels. This is just above estimated demand.

Unfortunately, there are no publicly available quality surveys for the Western states as there is for North Dakota. However, it is known that dryland production in both Montana and Idaho was affected by the hot and

dry conditions during the growing season. Obviously, irrigated acreage was not affected as much, particularly in Idaho. Our careful selections of Idaho irrigated barley reflect quite good quality to-date.

USDA-NASS estimated total barley production in Idaho to be 47.52 million bushels as compared to 53.96 million bushels in 2002, a reduction of 12%. Bushel per acre yields in Idaho were estimated at 66 as compared to 76 in 2002.

Similarly, estimated total barley production in Montana was 31.59 million bushels as compared to 39.90 last year, a reduction of 21%. Yields declined from 42 to 39. Montana was hard hit.

For both the Upper Midwest and the West, post-harvest sprout damage was virtually non-existent in 2003, a welcome change from 2002.

Canada

Total barley production was estimated at 12.00 million metric tons by Statistics Canada. This is quite close to the 10-year average, and represents a dramatic

improvement from the disastrous 2002 crop of only 6.70 million metric tons. The rains at harvest in 2002 caused quality losses last year, but also recharged soil moistures, thereby providing a foundation for good quality and yields in 2003. Additional recharging rains were received across the Canadian Prairies in March of 2003. Dry conditions in June were good for crop development. However, continued dryness and record high temperatures in July stressed crops during the critical period when kernels were filling. Harvest conditions in 2003 were thankfully dry. Welcome post-harvest rains were received in September.

Nonetheless, soil moisture conditions are low across the entire northern tier, including North Dakota, Montana, Idaho, Saskatchewan and Alberta. Additional rain and or snow will be required throughout in order to ensure a good harvest in 2004.

With the 2003 crop the variety Metcalfe established itself as the dominant 2-row variety in Canada, replacing Harrington. The variety Kendall is also popular. The 2003 Canadian crop is bright and almost devoid of DON and post-harvest sprout damage. Of note, extracts are down slightly, likely because of a reduction in the percentage of large kernels. The percentage of kernels greater than 3.0 mm in width is at 50% of average levels. This has resulted in a narrowing of the difference of amounts on the top two screens.

Europe

In France and Germany production of winter barley was affected by winterkill and a subsequent dry period from January through April. Winter barley production, including the variety Esterel in France, was down.

Overall barley production in the 15 nations comprising the European Union is currently estimated at 46.067 million metric tons, a reduction of 4% from 2002. The area planted to barley declined 1%, from

US Crop Barley & Malt Quality Overview

Variety	% Protein	Plump
Conlon	12.7	91.0
Harrington	12.5	85.0
Robust (6-Row)	12.9	76.0

Source: Industry average data

- Barley is bright, DON non-detectable levels
- Selection averages above do not reflect rejections for poor plumps and high protein.
- Future selections will likely be similar.

Malt Factors

- Observing lower extract levels.
- Assortment slightly lower than normal.
- Beta glucan, easily modified, more uniform.
- D.P. slightly higher.
- Alpha's slightly higher.



10.522 to 10.450 million hectares. Production declines are forecast in Belgium, Denmark, France, Greece, Ireland, Italy, Finland, Sweden, and the United Kingdom. The largest volume reductions were in France. Estimated production in France is down 654,000 metric tons, or 6%, to 10.034 million metric tons.

While late summer drought conditions in Continental Europe were well reported by the media, they do not seem to have materially affected barley production. Scotland enjoyed its best barley crop in 15 years, with production up 17%, but on a base smaller than that of Germany or France.

The production of barley of malting quality in the major European barley-growing nations was forecast as follows by Mautner, in millions of metric tons.

	2002	2003	% Change
UK	1.23	2.04	+65.9%
Germany	1.44	1.90	+32.1%
France	1.73	1.90	+9.9%
Denmark	1.55	1.45	-6.3%

The estimates of malting barley production in Germany have been quite variable over the growing season. The most recent information is the following, from the E-malt.com newsletter of October 16th: "German farmers planted more malting barley varieties this year. The higher spring barley area was partly encouraged by favorable market prices, but mainly in response to an unusually high percentage of winterkill (about 9% of the winter barley area, 6% of winter rapeseed, and 4% of winter wheat).

The total spring barley crop is now estimated at 3.6 million metric tons as compared to 3.0 million metric tons last year. Of this, 1.9 million metric tons is estimated to be of malting quality, nearly 500,000 metric tons above last year's output. Maltsters should have better supplies of malting barley this season, since a good malting barley crop has been harvested in Germany, HGCA said on October 13th."

[Sources: E-malt.com newsletters; USDA-NASS releases; John Zietz barley wires; MBAA panel discussion PowerPoint presentations by Heisel, Caekaert, and Ringo; and Malt Eurasia PowerPoint presentation of May 2003 forwarded by Gonzalo Petschen].

Malt Specials

Cargill Malt is proud to distribute the fine line of malt from Mouteri Dingemans the *exclusive* Belgian producer of specialty malts (caramel and roasted). Many have tried the Dingemans malts and find it to be irreplaceable in their Belgian-Style beers.

We want you to have an opportunity to try these malts from the delicate Pilsen to the dark caramel malt with the raisin-like flavors of Special B to the unique softness of the De-Bittered Black.

Now through June 2004, mention CBQ and receive our 32,000# pricing on any of the Dingemans Malts.

Pilsen (1.4° - 1.8° L)

Light in color and low in protein, Dingemans Pilsen is produced from the finest European two-row barley. This malt is well modified and can easily be mashed with a single-temperature infusion.

Pale Ale (2.7° - 3.8° L)

Dingemans Pale Ale malt is fully modified and is easily converted by a single-temperature mash. This is the preferred malt for ales of all types. This malt is interchangeable with British pale ale malt.

Pale Wheat (1.2° - 2.0° L)

Dingemans Pale Wheat may be used in amounts ranging from 30 - 70% of the total grist to create many styles of wheat beer and in smaller amounts to aid in head retention.

Munich (4° - 7° L)

Dingemans Munich malt undergoes higher kilning temperatures than pale malt. The resulting malt will lend a full, malty flavor and aroma, and an orange-amber color. This malt can make up to 100% of the grain bill, but low diastatic power makes this malt unsuitable for use with adjuncts.

Aromatic (Amber 50) (17° - 21° L)

Dingemans Aromatic is a mildly kilned malt that will add a strong malt aroma and deep color when used as a specialty malt. This malt can make up to 100% of the grain bill, but it is fairly low in surplus diastatic enzymes.

Cara 8 (6° - 9° L)

Dingemans Cara 8 is a very light crystal malt made by drying barley malt at low temperatures. The result is a malt that will lend body, smoother mouthfeel, and foam stability. This malt must be mashed with other kilned malts due to the lack of enzymes.

Cara 20 (19° - 27° L)

Dingemans Cara 20 is a light crystal malt used by Belgian breweries in producing Abbey or Trappist style ales and is appropriate for any recipe that calls for crystal malt.

Cara 45 (40° - 54° L)

Dingemans Cara 45 is a medium-amber crystal malt that will impart a rich, caramel-sweet aroma and full flavor, as well as intense color.

Special B (140° - 155° L)

The darkest of the Belgian crystal malts, Dingemans Special B will impart a heavy caramel taste and is often credited with the raisin-like flavors of some Belgian Abbey ales. Larger percentages (greater than 5%) will contribute a dark brown-black color and fuller body.

Roasted Wheat (Tarwe Mout Roost 27) (10° - 14° L)

Dingemans Roasted Wheat is a slightly roasted wheat that will lend nutty, bread-like flavors.

Biscuit (Mout Roost 50) (18° - 27° L)

This toasted malt will provide a warm bread or biscuit flavor and aroma and will lend a garnet-brown color. Use 5-15% maximum. No enzymes. Must be mashed with malts having surplus diastatic power.

Chocolate (Mout Roost 900) (300° - 380° L)

Dingemans Chocolate malt is a high-nitrogen malt that is roasted at temperatures up to 450°F and then rapidly cooled when the desired color is achieved. "Chocolate" refers primarily to the malt's color, not its flavor. This malt will lend various levels of aroma, a deep red color, and a nutty / roasted taste, depending on the amount used.

De-Bittered Black Malt (Mout Roost 1400) (500° - 600° L)

Using an unique evaporative process, Dingemans De-Bittered Black Malt will contribute the same color characteristics as Black malt with a less astringent flavor.

Cargill Malt news

2003 IdaPils Crop

The first batches of the IdaPils from the 2003 Crop have been malted and are ready for shipping. True to his promise, farmer Kirk Sargent of Lindeman Farms (see CBQ Volume 2, Issue 3, for his profile) has grown a high quality barley worthy of our IdaPils brand. The result is a

malt that is plump, bright and flavorful. (Avg. results of our early production. Color 1.5oL, Protein 11.5, plump of 95)

If you have not already brewed with IdaPils, now is a great time to give it a try. (Send us the tag from your bag of IdaPils and receive an exclusive gift. One per customer.)

2004 Malt Offerings

Cargill 2row: Canadian barley varieties Kendall and Metcalfe have been selected for the Cargill 2row. The selection was based on the superior malting qualities and brewhouse performance of these varieties. In recent years Metcalfe as

emerged as the leading Canadian malting variety replacing Harrington the historical leader.

Metcalfe's moderate protein levels, lower beta glucans and better husk adherence makes the Cargill 2row an ideal base malt for any of your beers.

Cargill customer news

International visitor to Lakefront

Deputy prime minister reviews urban projects

Lakefront Brewing Co., Milwaukee, WI was recently honored with a very special visitor. They hosted a luncheon for the Deputy Prime Minister of Great Britain, John Prescott (equivalent to the U.S. Vice President). The Deputy Prime Minister was in Milwaukee to look at urban renewal projects in the neighborhood. The Lakefront Brewery's banquet room was chosen for their luncheon.

Lakefront owner, Russell Klisch, gave Deputy Prime Minister Prescott a tour of



John Prescott visits the Lakefront Brewery Co. in Milwaukee.

the brewery and shared some of his fine English Ales.

1st of its kind

Two continents. Two brewers. One unprecedented blend.

In a never-ending quest to create new beers and defy category, New Belgium and Bouwerij Boon of Belgium release **Transatlantique Kriek** — a spontaneously fermented lambic ale made with Polish cherries and blended with an original New Belgium brew.

The kriek beer began life in the oaken vessels at Frank Boon's brewery in the Lembeek region of Belgium. After more than two years aging, Boon's offering shipped across the Atlantic and found its

way to the intuitive palate of New Belgium Brewmaster, Peter Bouckaert. After much sampling and internal consultation, Peter and our brew staff created a full-bodied golden ale to round out the light-bodied kriek.

The resulting beer weighs in at 6.3% alcohol by volume. The cherry nose gives way to a pleasingly sour flash across the palate that rolls gently into a slightly sweet finish.

Crisp, effervescent carbonation keeps the mouth feel bright and delightfully tingly. **Transatlantique Kriek** will be available in four-packs throughout New Belgium's area of distribution this fall.

White labs offers liquid malolactic culture

Yeast company also opens new bacteria laboratory

White Labs Inc., Pure Yeast & Fermentation now offers liquid malolactic culture for the home winemaker.

This new bacteria product is the first produced in the company's new bacteria laboratory.

"We set about building a bacteria laboratory due to customer demand. Malolactic Bacteria is our first bacteria project, and soon we will be producing a wide range of bacteria to meet the needs of vintners and brewers," said Chris White, president of White Labs.

This new product complements White Labs line of

yeast wine strains will be available in pitchable vials ready to inoculate 5 gallons of juice. A complete list of wine products available can be found at www.whitelabs.com.

Since 1995, White Labs has specialized in, and has been producing, certified pure liquid yeast for brewers, distillers, and vintners.

Their full service laboratory provides product and microbial analysis, proprietary yeast banking, lab media, lab supplies as well as easy to use quality control test kits and brewing accessories. White Labs' corporate office is

located in San Diego with our sales staff operating out of Colorado.

"Our new laboratory will allow us to develop new bacteria products for both the wine and beer markets," said JoAnne Carilli-Stevenson of White Labs, Inc. "We are excited about expanding our capabilities into other areas of fermentation."

White Labs, which opened in 1995, is a full service lab, specializing in pitchable, certified pure, liquid brewers, distillers and wine yeast, laboratory equipment, testing services and easy to use, Quality Control Test Kits. The company services both the professional and home brewing industries.

At Great Fermentations, 'We know everyone's story'

Customer profile

Name: Anita Johnson

Company: Great Fermentations of Indiana

Title: President

Email: anita@greatfermentations.com

What is in your fridge? A homebrewed kolsch, Kalamazoo Stout and New Glarus Red.

Describe your company

Great Fermentations is a retail homebrew shop located in Indianapolis. Since the first of the year we have had a small web presence but hope to grow that part of our business.

What is your role with Great Fermentations?

At Great Fermentations, "President" is a fancy title for someone who has the opportunity to do every job in the company. From computer issues, to marketing



and advertising to cleaning, I get to do it all. However, my favorite aspect of owning the company is helping customers.

What is your best-selling product?

Besides beer ingredients, probably the best-selling item in the store is Fermtech's Auto-Siphon. This is a simple, well-designed, well-priced gadget that solves siphoning problems for both the beer and wine maker.

What product do you wish would sell better?

We sell a lot of keggling systems, but I wish we sold even more. The pain of cleaning, sanitizing, filling and capping bottles drives many people out of the hobby. I

like to say that keggling makes the hobby fun again.

What do you like about your job?

I really love the customers. We are very "high touch" at our store and get to know customers pretty well. Great Fermentations is kind of like Cheers, we know everybody's name and story.

Why did you decide to enter the beer business?

I have always loved good, flavorful beer, even in college, before the craft beer revolution. Back then I was enjoying Augsberger Dark from Wisconsin. About 10 years ago a friend of mine invited my husband and I over to sample his homebrew. When I tasted that first pint, I was hooked. Brewing became my passion.

What kinds of jobs have you had in the past?

I sold medical diagnostic tests and lab

equipment in a territory that covered all of South America and the Caribbean.

What do you like about the brewing world?

I really enjoy the camaraderie. The passion for good beer and brewing seems to unite the community.

What is your educational background?

I have a bachelor's in business management from the Indiana University School of Business and a minor in Portuguese.

What do you think about the state of the industry?

The focus of the homebrew market is migrating from beer to wine kits. Our store went from a product mix of 95% beer sales to 60%. I also see that the remaining shops are stronger, better-run businesses and are more regional, rather than local, in scope.

White Labs news: changes in Colorado, birthdays

Maya White, pictured at right, celebrated her first birthday on Nov. 13, 2003. Maya is the daughter of Justin and Monica White. Justin serves as White Labs' sales and technical support coordinator and works in the company's Colorado sales office. Justin is the person to contact for international



sales, customer service and technical questions.

Happy birthday Maya!

Many changes in Colorado

JoAnne Carilli-Stevenson, White Labs' Brewery Products Manager, is now enjoying motherhood and is

only in the office on Tuesdays and Thursdays. To reach her at other times, contact her cell phone at (720) 635-8511 or joanne@whitelabs.com

Besides JoAnne's new schedule, other changes are in the works at White Labs' Colorado sales office.

White Labs recently expanded their staff in Colorado to better meet customer needs.

Kerri Gillies joins fellow customer service representative Susan Smith, whose background in the industry includes time

at the Association of Brewers.

Susan works mornings and Kerri works afternoons. For more on Kerri, turn to a profile on page 5.

"We are excited to have a dedicated Customer Service staff," said JoAnne Carilli-Stevenson, Brewery Products Manager.

"This will allow us to continue to meet the needs of our customers and potential customers with superior service."

Useful tips for storing and maintaining yeast

Brewers carry out lots of fermentations, and each fermentation needs yeast, of course. They reuse that yeast many times. We will look at some of the best ways to reuse yeast, as healthy yeast results in better fermentation profiles and better flavors.

Yeast is a living organism, and is most happy and healthy when feeding on wort sugars. When fermentation is complete, they flocculate to the bottom of the fermentor. They then go into a resting state. Yeast under beer is fairly stable, and most brewers agree that the best place to store yeast is under beer. But two crucial factors are temperature and time.

The yeast cake at the bottom of a conical fermentor can rise in temperature. Yeast is an excellent insulator, and heat can build up in the middle of the slurry, 10-15 degrees F above the beer temperature, for very flocculent strains. When yeast heats up, its life span plummets. If the cone is not chilled, effects are even more significant. For this reason, brewers try to remove yeast slurry shortly after fermentation is complete, and the beer is chilled.

Once yeast is removed, you ideally want to use the yeast as soon as possible (within 8 hours). This allows little time for yeast to deteriorate and die. But this is not often possible, as you may not brew another beer until the next week. The most common way to store yeast for brew pubs is to put it into 5-gallon, stainless steel soda kegs. These work well, and additionally the lid can be modified to your desire. But the two problems with these kegs are the many small parts and gaskets that can harbor bacteria, and the fact that they do not vent pressure unless modified in some fashion. Carbon dioxide can build up quickly in yeast slurry, and if kept under pressure, will cross the cell walls and kill yeast cells. Pressures over 35 PSI can be toxic to yeast, and soda kegs are rated over 100 PSI. So if you use these kegs, shake and vent pressure on a regular basis, at least once per day.

Other vessels can be used for yeast stor-

age. Brewers often shun plastic, because it scratches easy and scratches can harbor bacteria and wild yeast. But it can actually be a good choice. Be sure to use a high grade (and food grade) plastic (polyethylene, polypropylene), and be sure the buckets are used exclusively for yeast storage. The advantage of plastic is the fact that the yeast slurry is visible, so you can evaluate the condition and quantity of yeast by sight. For example, if you pull off yeast slurry and it is very runny, without counting with a microscope you will be unsure of how much yeast to use in the next batch. By using a plastic bucket to store yeast, you can see how much yeast settles out, and pitch accordingly. Plastic buckets also need to be vented occasionally.

How long can yeast be stored? The best-case scenario is to use the yeast within 1-3 days. Again, this is often not possible, especially if multiple strains are being used in the brewery. The magic number seems to be two weeks. If less than two weeks, brewers will usually have no problem re-using yeast. Over two weeks, you may have problems. After four weeks, the viability of yeast slurry is usually 50% or lower. Also remember that lager yeast does not store as well. The same applies to unhealthy yeast.

As yeast sit in storage, they consume their glycogen reserves. Glycogen deprivation weakens their cell walls, and makes them more susceptible to rupture. Cold temperatures retard this process, but you want to avoid freezing yeast, as ice crystals will also rupture cells. The ideal storage temperatures range is between 33-38°F. When yeast rupture, they release their contents into the liquid phase. Bacteria can feed off the nitrogen released, and multiply rapidly. So the yeast slurry needs to be as contamination free as possible when stored. Cold temperatures will also help retard bacterial growth.

To be confident, brewers should test yeast after storage, and before use. Check it for viability and for possible contami-



Technical
advise

Chris White

nation. Ideally you want to use yeast that is over 95% viable, but most brewers just compensate for lower viability by using more slurry. This can be successful, but can also lead to problem fermentations. The overall health of the yeast may be low, so the slurry may not produce the expected range of flavor and aroma compounds, and may not attenuate correctly. To check for viability, a brewer needs a microscope. Always keep extra, unused yeast on hand in case a problem is encountered with the yeast you intend to use.

To test for contamination, the slurry needs to be plated out on to specialized media 3-5 days before use. You should check the yeast slurry for aerobic bacteria, anaerobic bacteria, and wild yeast. Of the three, anaerobic bacteria is the most common bacteria found in brewers yeast slurry, and is also the hardest for a brewer to irradiate. The most common anaerobic bacteria are the lactic acid bacteria, *Lactobacillus* and *Pediococcus*. A 10 ml sample of yeast slurry should be removed, diluted 1:100 with sterile water, and 0.1ml to 1.0 ml plated on suitable media. The types and procedures for this would take up an entire article, but if bacteria counts are over 1 per ml, and wild yeast is over 1 per 0.1ml, the yeast slurry should not be used.

The best thing to do for yeast after it has been stored for two weeks – if it tests clean – is to add some fresh wort before using. This helps to restore yeast strength, and ensures a successful fermentation. Simply pour off beer that has separated from

flocculated yeast, add fresh wort at 9-12 Plato, and let it sit at room temperature for 10-20 hours. Assuming yeast activity was evident in this “starter” or “activator,” pitch into fresh wort as usual.

Brewers have always reused yeast in brewing, long before they knew yeast was responsible for beer production. In fact, the continual reuse of yeast has led to the impressive genetic variety of brewing strains, and to their suitability for brewing. For most of history, yeast has been skimmed from the top of fermentations, and reused. Today we usually use conical bottom fermentors that aid in cleaning and yeast collection. While these vessels help in yeast collection, the quality of yeast that is collected is not as good as from top cropping. Top cropped yeast rises at a particular time in the fermentation, has a high viability, and is relatively free from trub. When yeast is forced to the bottom of a conical fermentor, it mixes with dead yeast, trub, and bacteria. This means we have to be careful when collecting yeast, store it for short times, and test it before reusing. With careful attention to these parameters, a brewer should get 5 to 10 generations of high quality yeast.

Chris White is President of White Labs Inc. and is a chemistry and biochemistry lecturer at the University of California, San Diego. He has a Ph.D in biochemistry.

Yeast Workshop

Continued from Page 1

1 p.m. in the Royal Palm Salon #1 at the San Diego Town and Country Resort. You can register for the Yeast Management Workshop by contacting Lupe Zepeda by e-mail at lzpeda@siebelinstitute.com or by phone at (312) 255-0705, ext 118. The cost of this seminar is \$100, and you can reserve your space with payment by Visa or MasterCard. For more information, please contact the Siebel Institute of Technology at the following address:

Siebel Institute of Technology,
1777 North Clybourn Ave., Suite
2F, Chicago, IL. 60614-5520
U.S.A. Phone 312-255-0705 Fax
312-255-1312.

Web: www.siebelinstitute.com,
E-Mail: info@siebelinstitute.com.

Gillies joins White Labs' Colorado sales office

Kelli Gillies has joined White Labs as a customer service representative.

Here she is in her own words:

“I started with White Labs on February 12th, 2004. For the past nine years I have worked in the International Customer Service division for two major medical companies. Before Colorado I lived in

the UK for fifteen years. I moved to the UK when I was fourteen. My Dad had a five-year contract with a computer company there. My Mom loved it so much we stayed for fifteen years. During my time there I worked for Johnson & Johnson Medical in their International Customer Service division. I miss the food but not

the weather.

On Feb. 27, I attended the Rocky Mountain Microbrewing Symposium. I was able to meet some of our customers, which was great. I'm really enjoying learning about the brewing industry and the variety of yeast strains within the industry.”

Maier goes from homebrewer of the year to master craft brewer

By Ralph Woodall
Hopunion CBS, LLC

This issue's customer profile features John "More Hops" Maier, Masterbrewer of the Rogue Ale Brewery in Newport, Oregon. In a recent phone interview I was able to question John on his brewing background and some of the things he likes about the craft brewing world.

What is your educational background?

After graduation from high school I attended and graduated from the electronics college of DeVry Institute in Phoenix, AZ. I then started working for Hughes Aircraft in 1975 and worked there for eleven years until the brewing world called to me.

How did you first get into home brewing?

While working in California in 1981 I was driving by a homebrew shop every day and eventually went in and signed up for a brewing class. I was intrigued by Anchor Steam beer in those days and wanted to see why it tasted so good and why it was so much better than the other beers I was drinking. I didn't realize at the time this would eventually be the ticket back to Oregon that I had been looking for.

What year and at what event did you receive the Homebrewer of the Year award?

It was in 1988 that I received the AHA Homebrewer of the Year award from the American Home Brewers Association during the GABF week in Denver, CO. The Barleywine I entered was brewed in 1986 before I became a professional brewer, thus allowing me to compete.

When did you start brewing professionally and was it with Rogue?

I first started brewing professionally in 1987 for Alaskan Brewing Co. in Juneau, AK. I was there for two years before being interviewed by Jack Joyce of Rogue Ale Brewery for the head brewer's position and stated brewing there in 1989 so it has been about 15 years. The brewery started in 1988 and has received 15 GABF medals in their 15 years of operations.

What are your favorite hops?

"I am lucky to have the freedom to brew 'hoppy' beers."

— John Maier

They have changed from time to time over the years but now I like Crystal, Chinook, Amarillo and Sterling. The 2004 crop Sterling's are especially nice.

What are your favorite Rogue beers?

Shakespeare Stout & Mocha Porter.

What is your best selling beer?

It is Dead Guy Ale which became a huge success for us. It was originally brewed for a Portland Mexican restaurant to celebrate the "Day of The Dead" and when we got the logo we changed the beer to Maierbock and it became a standard for the Dead Heads who followed Jerry Garcia and company. When he died it became even more synonymous with the Grateful Dead group and their followers.

How many off-sight locations does Rogue now have and in what cities?

We now have four other locations besides the pub at the brewery. They are located in Newport, OR; Issaquah, WA; Portland, OR; and San Francisco, CA.

What is the strongest IBU beer you have ever brewed?

Old Crustacean. The analysis run by the Seibel Institute was at 120 IBU's.

I know there is a special someone in your life so what is her name and where did you meet?

Her name is Stacey Wacker and was a chef in Newport when we met and we have now been going out for two years. She works for us now and her nickname is "Hop Girl Friday." I am a lucky man to have her come into my life.

Any hints on what made you such an icon in the industry?

I took homebrewing to a professional level and brewed with aggressive flavors and always pushed the



John "More Hops" Maier, Masterbrewer at Rogue Ale Brewery in Newport, Oregon, says he enjoys making up recipes for new beers.

envelope.

What are your favorite beers other than Rogue?

I like smoke beers like Schlenkerla Rauchbier Martzen, Hansen Lambics like Gueuze or flavored like the Krick or Framboise. I always like to try Sierra Nevada's Celebration Ale and Anchor's Xmas Ale every year.

What is the best part about your job?

The hands on brewing process like mashing in, adding hops, moving the wort around. Also, work on the research and development of recipes for new beers. I am lucky to have the freedom to brew "hoppy" beers. We would rather raise the price then compromise the quality of the beer we brew.

You can find out more about John and the Rogue Ale Brewery by visiting their website at: www.rogue.com or key word *rogue ales*.

Good news on the shipping front

By Cindy Pitts
Hopunion CBS, LLC

We have good news for our customers on the East Coast.

UPS has put into effect a faster ground time in transit, meaning shipping via UPS Ground should no longer take up to 6 business days to be delivered. This major upgrade by UPS means they've reduced time in transit to approximately 4 business days, without any change in customer rates or pickup and delivery time.

UPS Ground does not have a guaranteed day delivery, but they do still offer expedited services like UPS Next Day Air Early AM (By 8:00 or 8:30 AM), UPS Next Day Air (By 10:30 AM), Next Day Saver (By

3:00 PM), UPS 2nd Day AM (By Noon), UPS 2nd Day and UPS 3 Day Select, for those who need their product on an exact day.

Hopunion strives to get as many orders as possible out to our customer's the same day the order is placed, so they can have their product as soon as possible. We would like to extend our thanks to all our customers and their support throughout the years. We hope to meet all of your hop needs in the future.

To place an order or if you have any questions, please feel free to contact our Toll Free order line at 800-952-4873 or by Toll Free fax at 800-952-4874.



For more news from Hopunion, log on to their Web page at www.hopunion.com

The Redsell family resume

Christopher R. Daws
Hop Services Manager
Botanix

The Redsell family has been growing hops in Kent since the nineteenth century. For the past sixty years or so the business has been based in East Kent. The hops, mainly the traditional English varieties, East Kent Golding and Fuggles, are grown at Parsonage Farm, Boughton-under Blean; Mockbeggar Farm, Teynham; China Farm, Harbledown; Homestall Farm, Faversham; and Vine Farm, Boughton-under-Blean.

All of the Redsell farms are on or adjacent to the A2 London to Dover road in an area with a long history of growing fine quality aroma hops. The proximity to the Thames Estuary and the North Sea means that the hops are exposed to the cold, salt-laden, northeasterly winds in the spring; this is reputed to influence the unique aroma associated with hops grown in East Kent.

The varieties grown are East Kent Goldings (Cobbs, Early Birds, Canterbury Goldings, Eastwell Goldings), Fuggles, Northdown and Challenger.

Several drying systems are used, with a bin dryer, installed in 1984, at Parsonage Farm, a continuous dryer at China Farm, built in 1998, and a traditional oast at Mockbeggar.

Machinery is regularly updated, and the picking machines, although of old design, are modified to give cleanly picked hops, free from extraneous matter.

Hops grown under the Redsell name have an enviable reputation among UK brewers and the various farms figure regularly among the prizewinners at the English Hop Competition.

The emphasis is on producing good crops of high quality. To achieve this, there is an ongoing investment program. Some 80% of the growth can be irrigated either by trickle or overhead spray. The water is provided by borehole, of which there are two, or from a 6 million gallon reservoir.

Integrated crop management is practised. The hop gardens are inspected on a weekly basis and are closely monitored for signs of pest or disease. A weather station gives advance warning of the likelihood of a fungal attack. Crop protection sprays are kept to a minimum needed for a clean sample of hops. Harvest intervals for the various chemicals are strictly observed.

Protection of the environment is a high priority. Several areas of woodland have been planted in recent years, and beneficial insects are encouraged by sowing headlands with host plants.

All crops grown, including lavender, apples, pears, cherries, cereals and vegetables, are grown under Farm Assurance schemes. Complete traceability systems are in place.

Growing your own hops

From Page 1

light.

The first year you plant your rhizomes, it is wise to plant 2 rhizomes of the same variety together. This gives your plant a better chance of surviving. Create an area that is free of weeds. And make sure you have a support system next to where you plant, so the vine can grow up it, such as a fence.

Plant the rhizomes vertical with the buds pointing upwards. If you can't tell which way the buds are pointing, you can place them horizontally. You will need to plant so that 1 inch of soil is covering the top of the rhizome whichever way you do plant it. If you are planting multiple plants, you can space them anywhere from 3 to 7 feet apart on each side.

Keep the new plant watered and if you choose to, you can apply a compost or fertilizer when they are first growing. Midway through the season, fertilize your hop plant again. Remember hop plants grow quickly, so be prepared. When your plant reaches a height of 1 to 2 feet, you will need to begin training the vine on some kind of a coarse cord like baling twine. The vine will grow upward and clockwise as it grabs onto the cord.

As your hop plant grows taller, the sidearms also known as shoots will begin to *shoot* out. Make sure though that you are keeping these shoots from tangling. The shoots will begin to produce hop cones when the plant reaches the top of the trellis.

The plant at this time could vary in size anywhere from 13 to 18 feet high. At this time, clear away foliage and branches from the bottom 4 feet of the plant. This will reduce the chance of disease and will improve air circulation for the plant. As the hop cones are getting bigger, keep a close eye to their color and texture. They should be a yellowish to light green and should feel light and dry when they are ready for picking. Also, compress some of the hop cones in your hands. The lupulin, which is the yellow powder in the center of the cone, will cause your hands to feel sticky. But if your hops are ready, your hands will take up the

“Now for you brewers, not only can you brew the beer you drink, but you can grow the hops you brew with for the beer you drink. Hops can also make great decorations and can add a lot to your outdoor space.”

— Lisa Olson

aroma from the lupulin. If the hops are not yet ready to be harvested, the cones will appear too green and will feel damp in your hand. But keep watch, because harvesting too early or too late will affect the quality of your hops. You may notice that the first year that the plant may look a little thin, but the next year it will be fuller, as the plant will have a more developed root system.

Also remember that upon receiving, if you are not yet ready to plant your rhizomes, keep them in a plastic bag and keep them refrigerated. Don't freeze them. Try to plant them, however, no later than May. Keep in mind also that different varieties of hops grow better in different climates. If you want to know which plant would do the best where you live, you can call and ask for recommendations. Now for you brewers, not only can you brew the beer you drink, but you can grow the hops you brew with for the beer you drink. Hops also make great decorations and can add a lot to your outdoor space.

If you are interested in planting rhizomes this spring, contact Lisa Olson at (509) 574-5130 or email me at lisa.olson@hopunion.com. Rhizomes will become available mid March. Hope to hear from ya!

Follow up to New Zealand story

Craft Beer Quarterly would like to make a correction to the story titled “Hopunion sells hops from New Zealand,” which appeared in Summer 2003. The author of the story, Fin Knudsen, should have been identified as the President of American Region, NZHMB. The story reported that the New Zealand Hop Marketers and Hopunion CBS LLC have agreed that Hopunion, starting with the 2004 harvest, will store sufficient amounts of New Zealand Hops in Hopunion CBS's refrigerated warehouse for sales to North American brewers.



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Attention brewer

CRAFT BEER QUARTERLY is brought to you by the following sponsors:



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Hop news,
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Malt news,
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Craft Beer Quarterly

The Back Page

CBC comes to San Diego, CA

Sponsorship

Craft Beer Quarterly is helping to sponsor the 2004 Craft Brewers Conference in San Diego.

When you are in San Diego look for the CBQ water bottles and stop by our hospitality suite located in the Stratford room.

Hospitality hours are 3-10 p.m. on Thursday and Friday. Food and beer will be provided as well as lively conversation with your favorite CBQ representatives from Cargill Malt, Hopunion and White

Turn to page 1 for a preview to a special yeast seminar at the Craft Brewers Conference.

Labs.

And on Friday evening, CBQ along with Celebrator Beer News and Boelter present "Splashin' in San Diego," a pool party with the a beach theme. The party

will feature food, beer and music. There will be a special Celebrator swim suit cover photo at 7:30 with a swimsuit contest to follow. Don't miss this party and don't forget your Speedo!

Open house

Also at the show, White Labs will have a special open house at their facility at 7564 Trade Street on Saturday, April 17 from 11:30 a.m. to 2:30 p.m. Come by for a BBQ, beer and the chance to view parts of the facility.

The differences between red and white wheat malt

Ask the Maltster

Q: What is the difference between red and white wheat malt in terms of flavor impact, and performance in the brewhouse especially lautering?

A: There is very little difference between red and white wheat in terms of performance in the brewhouse. If you are

concerned about runoff issues the primary thing to look at will be Beta Glucan levels. If the BG levels are similar for the particular batches of red and white wheat malt you are looking at the runoff differences should be insignificant. As far as flavor goes, some suggest that red wheat contributes a more round, fuller flavor to beer than white wheat malt. At least that's what

the customers that preferentially purchase red wheat tell us. Flavor is however subjective as we all know. We would recommend a brewing trial and a side by side blind tasting to determine which product is most suitable for you and your customers.

For more malt news, turn to pages 2 and 3.

Craft Beer Quarterly

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Editorial:

Mike White, cbqmag@aol.com

Advertising:

JoAnne Carilli-Stevenson,
joanne@whitelabs.com
1-888-5-Yeast-5

Production:

Cold Creek Publishing Co.
coldcreekpub@aol.com

For all other inquires, contact:

CBQ, P.O. Box 12636
Pleasanton, CA, 94588
Fax: (253) 981-7534
coldcreekpub@aol.com