



Volume 9, Issue 3/Winter 2010-2011

As annual harvest arrives, green hops abound

**Melody Meyer
Hopunion LLC**

Each year, as August closes and September begins, craft brewers throughout the country eagerly wait to hear that harvest, and green hops, has begun.

Within 48 hours, green hops are harvested on the farm, hand packaged at Hopunion LLC, and shipped to each customer for immediate brewing. The process is furious and full of logistical compli-

Turn to pages 4-5 for more news on hops and Hopunion LLC.

cations, but the taste of each fresh hop beer is worth every hardship.

Green hops are an annual celebration of hops and a reminder of beer's agricul-

tural roots. They endow each harvest with a distinct flavor and produce fresh hop beers layered with wonderful bittering characteristics and vibrant aromatic qualities. For brewers, they are a reminder of beer's agricultural roots. Green hops are volatile and exciting nature, producing a host of brewing challenges.

When brewing with green hops, there are several considerations that must be made in order to achieve the right results.

First, brewers must find out what varieties are being offered and when. For recipes that require more than one variety, the timing of harvest and peak maturity of multiple hop varieties can prove to be a difficult obstacle. This year, over the course of two weeks, Hopunion offered its widest green hops selection, featuring 5 different varieties - Cascade, Centennial, Citra™, Simcoe®, and Chinook.

See "Green hops," page 4

Big QC Day returns with No. 5

New test and quality measures in place

The 5th Annual Big QC Day returns in 2011 with a new test and commitments to quality.

As many readers already know from past years, Big QC Day provides a great way to test your beers for a fraction of the regular cost. White Labs provides the testing at a reduced cost by conducting the tests on a large number of samples in the same time period, February. The bundle of tests normally would cost over \$500 for two samples; Big QC Day costs \$139.

In addition to determining such factors as diacetyl, IBUs, alcohol, calories, color, real and apparent attenuation, and microbiological contaminants, this year's test-

ing will include chill haze. This test measures turbidity of the samples via an alcoholizer, which can give brewers an

See "Big QC Day," page 2

2010 crop report for Hopunion

**Jennifer Stevens
Hopunion LLC**

As mentioned in our Fall newsletter, there was a continuation of variances with the weather throughout the summer up until harvest.

For the Yakima Valley the weather prior and during harvest consisted of some rainy days, mixed in with the hot, typical weather. The Lower Yakima Valley also experienced some problems with their irrigation system at the beginning of August causing some 15,000 acres, which included some hop farms, to be without water. We did see some higher alphas for some of the aroma varieties this year, but for the most part alphas appear to be in the average ranges. (See chart

See "Hops 2010," page 5

Style Matters: Tips for making Winter Warmers

In each issue, CBQ spotlights a particular beer style and provides tips from an ingredient and fermentation perspective. In this issue we examine Christmas/Winter Specialty Spiced Beers.

Hop Notes:

The Christmas/Winter Specialty Spiced Beer style in America stems from Europe where Germans, Belgians, and the English traditionally brewed malted, higher-alcohol beers to celebrate the holiday season

and to help stay warm during the winter months... a liquid jacket if you will. This beer is all about balancing hops with malt and spices. While the English and German styles do not typically use spices, American and Belgian styles traditionally use spices that resemble the holiday season. Spices can include, but are not limited to, cinnamon, nutmeg, coriander, citrus peel, ginger, allspice, clove, and various dried fruits. Molasses, brown sugar, and honey can also be used to help add mouth-feel to

the malted, sweet beer but it is important to make sure everything is in balance.

Christmas/Winter Warmers can range from dark amber to opaque black and can have many complex flavors and aromas. Notes of caramel, toasting, nuttiness, chocolate, and spice are typical. If fruits are used, these should come through as well. Alcohol

See "Styles," page 6

Building a QC program: sourcing contamination

5 Steps to a Quality Control Program at your brewery: Part II Sourcing Contamination—Where, When, and What to Swab

By **Ashley Paulsworth**
White Labs Inc.

Editor's note: This article is a continuation of the five-part series on how to setup a small QC program at your brewery. The last article was on sanitization and can be found in the archives of CBQ at www.whitelabs.com/news.html.

Contamination in the brewery is never welcome and often hard to determine. Hopefully, you've read our previous article on sanitizing your equipment and are employing a similar procedure to avoid contamination in the first place, but how do you get rid of it when you have it? The best way to eliminate contamination is to determine the source. To do that you'll have to swab several different production points in your brewery to establish where the contaminant first shows up.

Production points to test should be:

- Pre and post wort chiller;
- 24 hours after adding yeast to the fermentor;
- Post any subsequent transfer to another tank;
- Bottles and the bottling line equipment.

By taking samples at these points, you should be able to narrow down where the contamination is entering your process and work on eradicating it.

When sourcing for contamination you can usually use sterile cotton swabs to wipe over the area in question and brush those swabs onto a selective media plate. For liquid samples, you can use an analytical membrane filter to pass the sample through, then placing the filter directly onto the selective media plate. For anaerobic HLP tests you can simply add 1ml of your sample to a sterile 15ml tube and pour the liquid HLP into the tube, filling the tube all the way up before capping the sample

Media Name	Media Type	Organism Cultured	Common Brewery Organisms
Wallerstein Differential (WLD)	Aerobic (can be used anaerobically)	Wild yeast, bacteria, molds	Brettanomyces, Candida, Saccharomyces-type wild yeast, Lactobacillus, Acetobacter
Schwarz Differential Agar (SDA)	Aerobic (can be used anaerobically)	Bacteria	Acetic acid bacteria, Bacillus, Lactobacillus, Enterobacter
Hsu's Lactobacillus and Pediococcus (HLP)	Anaerobic	Bacteria	Lactobacillus and Pediococcus
Lin's Wild Yeast Medium (LWYM)	Aerobic	Wild yeast	Saccharomyces-type wild yeast
Lin's Cupric Sulfate Medium (LCSM)	Aerobic	Wild yeast	Non-Saccharomyces wild yeast

and incubating. All plates should be placed at or around 85°F as the contaminants will grow best at warmer temperatures.

Common contaminants found in breweries are listed in the accompanying chart; by using the corresponding selective medias, you can test for all of them.

While it is unusual to have contamination on the hot side of your brewing process, it is still possible and luckily there is a simple test you can do to make sure the hot side is clean. The test is called a forced wort test, not to be confused with a forced ferment.

For a forced wort test simply collect your wort post heat exchanger into a sterilized container and store in a

dark incubated area for 7 days. Check the sample daily to see if you notice bubbles or cloudiness, which are indicators of contamination. If your wort is still clear after 7 days, your process is clean! Great job and keep up the good work.

The next segment of this series will focus on Routine Testing in Your Brewery.

Ashley Paulsworth is Technical Sales & Marketing Coordinator for White Labs.

Big QC Day

From Page 1

idea of shelf life and stability.

This year, White Labs also has a renewed commitment to quality and accuracy issues. Last year we had problems with some of our IBU tests, so to prevent this in the future, we have instituted a more stringent quality control program for analysis in our laboratory. This includes validation of analysis equipment and process through the American Society of Brewing Chemists sample check services.

Another change this year: In an effort to "go green," all reports will be uploaded to an online account where you can view them and print them if necessary. Current customers already have accounts on the White Labs system, yeastman.com, regardless of whether they have logged in be-



The photos at left are beer samples as they are being testing as part of the 4th Annual Big QC Day. For weeks the lab space is dominated by the biggest little test in the world.

fore; new customers must first set up an account, which can be accomplished via the Yeastman system. Additionally, when customers receive the box full of the items they need for collecting their samples and sending them back to White Labs, they

will be asked to fill out a form on their Yeastman accounts. Having customers complete the information online will allow us to avoid problems in which handwriting is illegible, and will also allow us to ensure samples correspond to a set list-

ing of beer styles. Please sign up by February 4. Late sign ups and/or late returns of samples will be assessed late fees. Visit www.whitelabs.com and follow the links under news to Big QC Day for more information and results from past years.

Happy fermentations and more

A few months after a yeast book I wrote with Jamil Zainasheff was published by the Brewers Association, it seems like a good time to reflect on some of the interesting and amusing things that have transpired.

* I have been asked to sign a lot of books — hundreds for the Brewing Network, alone — and I still have yet to learn the best techniques for keeping your fingers nimble. You just have to take a lot of hand breaks, I guess.

* People have asked me to write some strange things as part of the autograph, but unless they tell me otherwise I write one of a few favorite lines. I have tried to use a variety of slogans but I rely on one the most, “Happy fermentations.” After all that is what *Yeast: The Practical Guide to Beer Fermentations*, is all about. Send your finger exercising tips my way.

* Kristi Switzer, publisher of Brewers Publications, sent me some interesting information a few months after the book was published. She noted that the book was ranked #2 in beer books and for a number of days it ranked in the top 100 of cooking books, a category dominated by names such as Anthony Bourdain. I don’t think a yeast television show is on the horizon, but the keen interest in the book is refreshing and frankly a bit of a



Letter from the President

Chris White

surprise for me. It is also a sign of how brewers take their hobby or their profession so seriously and how they strive to improve in every area possible. Some of the easiest and most effective fixes and improvements to beer can be made on the cold side of brewing, and I hope this is what the book will help promote.

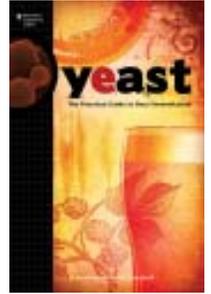
* The book has made its international appearance. Besides books ordered by overseas customers, I traveled to Australia recently for the Australian National Homebrewing Conference 2010 in Melbourne and had the opportunity to discuss the book with many participants. Every time I go back to Australia, I see greater sophistication and style among the craft brewers and

homebrewers, and what is interesting to note is that they are developing a unique style that is helped in part by the unique flavors of New Zealand hops. When the Brewers Association publishes its hop book (it is part of the series of books planned on ingredients; mine was the first in the series), I imagine it will find many readers amongst the burgeoning Australian brewing scene.

* I enjoy when people tell me they are reading the book, but I must admit that while I enjoy the presentation, I have not read more than a few lines. It is strange to read one’s own words in print. Additionally, my first reaction when opening it up was, the book was a quick read. All I could think about was how long each of those paragraphs took to create. I wish it was as easy to create as people tell me it is to read.

* Happy fermentations!

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 hosts distilling workshop in Davis, Calif.

On October 2nd 2010, White Labs hosted a One-Day Yeast and Fermentation Fundamentals Workshop in Davis, Calif.

The workshop featured seminars from Dr. Christopher White, fermentation specialist Clayton Cone, White Labs’ Lab Manager Neva Parker, and others.

The goal of the workshop was to give craft distillers a broader and deeper understanding of yeast inoculation rates, yeast strain selection, and appropriate enzymes and nutrients to improve fermentation with various sugar sources.

Providing a one-of-a-kind informational session on yeast and fermentation, White Labs brought their longtime experience to a new, burgeoning industry, providing support for the growing craft distilling community.

Attendees ranged from start-ups to



large long standing operations.

Keynote Speaker Yuseff Cherney (pictured) of Ballast Point Brewing and Spirits was a crowd favorite, addressing distillers’ practical questions and explaining how

to navigate legalities and licensing obstructions.

Cherney had the chance to discuss the state of the industry, likening the beginning of the craft distilling movement to the early days of microbreweries. If the craft beer movement is any preview to the craft distilling movement, we can expect to see a lot more from boutique spirit producers in the coming years.

Participants were also happy to meet other distillers to network and share advice with each other.

White Labs plans to host another fermentation workshop for distillers next

year. Stay updated by visiting www.whitelabs.com for more.

Craft Beer Quarterly

The purpose of CBQ is to provide information and tips about brewing from an ingredient perspective — malt, hops and yeast. CBQ is sent each quarter to thousands of professional brewers. CBQ is sponsored by Cargill Malt, Hopunion LLC and White Labs Inc.

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From the Lab

White Labs is constantly looking out for new and unique yeast strains to expand the brewing world and we are excited to announce three new strains for 2011.

Look out for WLP815 Belgian Lager coming out early 2011. The strain originates from a very old brewery in West Bel-

gium.

If you’re more into aged funk, we’ve got two new blends of yeast and bacteria to put a zing in your brew. WLP630 Berliner Weisse is a blend of a traditional German Weizen yeast and *Lactobacillus* to create a subtle, tart, drinkable beer.

WLP670 American Farmhouse Blend

is inspired by local American brewers crafting semi-traditional Belgian-style ales. This blend creates a complex flavor profile with a moderate level of sourness. It consists of a traditional farmhouse yeast strain and *Brettanomyces*. Yum!

Try them out and feel free to give us your feedback on the website.

Jeff Bagby is the new Alpha King

Congratulations to Jeff Bagby of Pizza Port Carlsbad, Calif., who was crowned this year's Alpha King at Falling Rock Tap House in Denver, Colo., on Sept. 17, 2010. Bagby's "Poor Man's IPA," an Imperial IPA, was deemed fit for a King, conquering 96 other hop-forward beers.

In unprecedented fashion, Jeff also received second place honors for his "Welcome Back Wipeout" Imperial IPA. It is important to note, Pizza Port Carlsbad's Ignacio Cervantes helped Bagby brew the

top two finishers. Third place was given to Jeff Horner of Cisco Brewers in Nantucket, Mass., for "XV", a surprising wheat-based Double IPA.

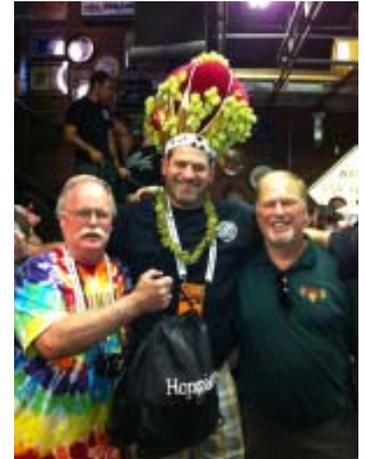
With zealous, artisan recipes, brewers from around the country vied for the coveted Alpha King crown. More than 60 breweries from around the country submitted 96 entries, all competing to be the biggest, hoppiest beer in the land. A team of 20 judges, including brewers and beer writers, selected the top entries through a blind tasting based on overall quality and

balance of flavor.

The Alpha King Challenge is an annual event, held during the Great American Beer Festival. The contest is sponsored by Hopunion LLC, Brewing News, and Three Floyds Brewing Co., and takes its name from Three Floyds' Alpha King Pale

See "Alpha King," page 5

From left to right, Ralph Woodall, Jeff Bagby and Ralph Olson at the Alpha King Challenge. Bagby took top honors.



Green hops

From Page 1

Quantity is another challenge. Due to moisture retention, green hop recipes require a minimum of five to seven times more hops than traditional whole hops or pellets. This means that every year, there is always a small element of guessing involved throughout every stage of the brewing process. Unfortunately, this is only the beginning as the logistics of overnight shipping and immediate brewing must also be considered.

Although green hops present a plethora of challenges, brewers across the country all agree that the end result is entirely worth the extra time and effort. For Great Divide Brewing Co. in Colorado, green hops allow for the production of *Fresh Hop*, a popular Pale Ale with incredible aroma and fresh, grassy, floral characteristics. Pizza Port in California also enjoys the advantages with *Rip Tide* and *Plant to Pint*, two American Strong Pale Ales that bring

exciting flavors described as fresh, alive, and almost exotic in nature, when compared to regular kiln dried hops. While most fresh hop beers are released in early Fall, some breweries, such as Boulevard Brewing Co. in Missouri, opt to feature green hops in other seasonal beer styles. *Nutcracker*, Boulevard's green hopped strong ale, revives the green hop flavor, bringing a crisp pine characteristic to the cold winter months.

Regardless of the brewery, style, or season, green hops

offer a unique brewing experience. They are the expression of every craft brewer's creativity and celebrated at numerous fresh hop festivals around the country. Whether they are featured as the sole hop in a refreshing beer or combined with traditional hop products for extra bittering and flavor, green hops are mysterious and unique, keeping the brewers excited and the customers wanting more.



The first batch of fresh hops arrive at Hopunion LLC.



The hops are weighed and packed, ready for shipping.



Fresh Centennial hops arrive at Great Divide Brewing Co. in Denver, Colo.



Boulevard Brewing Co. of Kansas City, MO prepares their fresh Chinook hops.



Boulevard Brewing Co. add Chinook hops to the kettle.

Falconer's Flight honors spirited brewer

By Scott Bryant

In 2002, the untimely passing of Glen Hay Falconer, a great personality and innovative Northwest brewer, devastated the hearts of many close friends and members of the brewing industry alike.

After spending much time as a home-brewer, involved with the Cascade Brewers Society, Glen Hay Falconer took the next step with his passion and pursued a professional brewing career at Steelhead Brewery in Eugene, Oregon. He completed the Siebel Concise Course in Brewing Technology in 1994 and shortly thereafter, moved to Newport, Ore. where he refined his skills at Rogue Ales. In 1996, Glen began working at the Wild Duck Brewery in Eugene where he served as head brewer until his passing. As a brewer, Falconer accumulated many awards and accolades, but his finest accomplishment was earning back-to-back Gold Medals in 2002 and 2003 for his Auld Gnarly Head Barley Wine from the Great

This issue's featured hop

American Beer Festival.

To celebrate and honor the spirited life and edgy brewing styles of Glen, Hopunion LLC has crafted a revolutionary blend of hop pellets, containing many of the most unique and aromatic hops available. Perfect for any IPA or Double IPA, the new proprietary blend, Falconer's Flight, has been fashioned with an array of Northwest grown hops, exploding with a tropical and citrusy aromatic character and an immense hop complexity directly out of the box.

Hopunion LLC will be contributing a generous portion of the proceeds from every Falconer's Flight purchase to the Glen Hay Falconer Foundation. The Glen Hay Falconer Foundation is a non-profit organization created to commemorate and celebrate the life, in-

terests, and good works of a well-loved and leading Northwest brewer. The mission of the Foundation is to contribute to the Northwest craft brewing community by providing opportunities for professional and aspiring brewers to further their knowledge and expertise. To date, the Foundation has granted a total of fifteen scholarships over the past seven years.

Please join Hopunion LLC in celebrating the ever evolving craft beer industry and honoring the life of a dedicated, adventurous and beloved Northwest craft brewer.



Alpha King

From Page 4

Ale. Entries from around the country were welcomed, however, all beer must be available for purchases and feature a minimum 60 IBU's.

With the overwhelming success of this year's challenge, special thanks go to Linda Norton from Brewing News, the MVP on-site organizer, the Hopunion staff

for stewarding, to all the judges, and to Chris Black and the staff from Falling Rock Tap House, for their generosity in hosting the event.

Hops 2010

From Page 1

#1).

There were colder temperatures and some wetter weather during the transition into August which definitely affected yields of some varieties. Yields in Washington State are estimated to have decreased by 13% from 2009 crop to 2010 crop.

This is in direct contrast to the increase from 2008 crop to 2009 crop of 17%. Overall quality, oils and aroma of the 2010 crop appears to be better than the 2009 crop. There shouldn't be any major shortages but some particular, specialty varieties could be tight availability-wise.

As far as the UK crop is concerned, it is looking similar to last year in regards to yields. There are some farms that have experienced lower yields as a result of a decrease in the anticipated rain during the summer months but this should not affect their ability to fulfill existing contracts as well as allowing for some spot hops to still be available. Alphas appear to be similar to last year as well, which are in the average range. (See chart #2).

In regards to the German crop, alphas and yields are fairly average with some varieties such as Perle and Tradition above previous averages. Germany experienced some similar weather to the US with cool, rainy weather which caused some downy mildew damage for some crops. Estimates on German crop yields are 12% above last year. There are some disappointments in

VARIETY	AVERAGE	AVERAGE	AVERAGE
	ALPHA 2008	ALPHA 2009	ALPHA 2010
Amarillo® VGXP01	9.10%	8.60%	10.50%
Cascade	8.20%	6.40%	7.10%
Crystal	4.60%	3.10%	5.90%
Mt. Hood	7.00%	5.30%	6.70%

Chart #1

regards to the alphas for Czech Saaz which were lower than normal. (See chart #3).

Currently there are still carry-over hop inventories for both customers and hop dealers resulting from the previous year's higher hop yields and the increased acreage that had been planted.

From the hop growers, to the dealers onto the customers, everyone is looking at ways to work together to realign their production with the actual needs of the industry.

Hopunion L.L.C. has led the craft industry by working in partnership with their customers to help realign their customer's contracts that were established during the hop shortage a few years ago from both a varietal and a price perspective.

It has become even more apparent within the beer industry that brewers want

to have more of a relationship with their hop growers. Brewers want to know and understand the complexities of what it takes a hop grower to provide them with their quality hops.

In turn brewers want to expand their communication with hop growers to get the brewer's requests met as well.

Part of establishing that relationship is for brewers to determine their hop needs via contracting which will provide hop growers and dealers with sufficient infor-

VARIETY	AVERAGE	AVERAGE	AVERAGE
	ALPHA 2008	ALPHA 2009	ALPHA 2010
East Kent Golding	4.50%	5.80%	5-6%
Fuggle	4.00%	4.60%	4-5%
Target	9.70%	11.30%	10-12%

Chart #2

VARIETY	AVERAGE	AVERAGE	AVERAGE
	ALPHA 2008	ALPHA 2009	ALPHA 2010
Czech Saaz	3.40%	3.90%	2.80%
Hallertau Hersbruck	2.90%	3.40%	3.40%
Hallertau Perle	8.50%	9.20%	7.70%

Chart #3

mation to plan according to varietal requirements. Hopunion L.L.C. looks forward to assisting their customers during this time and welcomes the opportunity to participate in these relationships.



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Attention brewer

Craft Beer Quarterly

The Back Page

CRAFT BEER QUARTERLY is brought to you by:



Styles

From Page 1

content for these brews can range from 5.5%-9%. This style has subtle hop flavor and aroma which are purposely held back to not interfere with the spices and special ingredients used.

Although most beers in this style are minimally hopped, some examples do show aggressive hopping and IBUs can range from 22-60. Hop varieties like UK Goldings, Fuggle, German Hallertau, Tettnang, American Willamette, Mt. Hood, Cascade, or Centennial make good choices for adding to this beer.

Some commercial examples include: Anchor Brewing Christmas Ale, Goose Island Mild Winter, Great Lakes Christmas Ale, Sweetwater Festive Ale, Full Sail Wassail, and Moylan White Christmas Lager.

— Will Harrison, Hopunion LLC

Yeast and Fermentation Notes:

Common yeast choices for Winter Warmers are strains such as WLP002 English Ale Yeast, WLP013 London Ale Yeast, WLP570 Belgian Golden Ale Yeast,

WLP545 Belgian Strong Ale Yeast, or a more neutral yeast such as WLP001 California Ale Yeast. For dark strong lagers brewers have enjoyed success with such strains as WLP833 German Bock Lager Yeast and WLP885 Zurich Lager Yeast. Because of the higher alcohol, particularly if additional fermentables are used, such as honey or molasses, you will want to follow the advice we give for similar types of beers, such as extra aeration, nutrient additions at higher than normal levels (double the normal dose is generally recommended), and higher pitch rates.

— White Labs

Malt Notes:

Winter Warmers are perhaps the most diverse beer style seen today. With alcohol ranging from mild to 'put me to bed', color from light amber to pitch black, these beers offer a wide range of experimentation and fun for the brewer. When developing the grain bill we would suggest asking some basic questions: Is your goal to have a malt based Winter Warmer? Will

you be using any spices or flavor hops? If the spices or flavor hops are being used, how perceptible do you wish these flavors to be? From the thoughts on these questions many different options, and combinations of options, are available. This is truly a complex and varied style.

For a malt based Warmer, a blend of several specialty malts is a good option. This provides the complexity of flavors often seen in the style, without having one particular malt dominating the beer. As an example the use of Gambrinus Honey, Pauls Chocolate, and Cargill White Wheat would produce a full bodied beer with hints of citrus, dark forest fruit, and chocolate - perfect for those cold winter nights. On the amber side of the spectrum using Warminster Maris Otter, Pauls Dark Crystal, and Dingemans Aromatic would create a beer with depth of flavor, hints of prune and plum, and a breadly backdrop.

If putting together a spice based beer is your goal, we would suggest using malts

on the subtle side and allowing the spice flavors to step forward and shine. With this in mind Cargill Kilned Caramel malts are a good place to start. They provide a light caramel toasty flavor, but without the astringent notes often present with roasted caramel malts. For deeper color, and again steering away from burnt flavors, Dingemans De-bittered Black Malt or De-husked Roasted Barley, are good candidates. Both provide the dark malt flavors customary with black malt and roasted barley, but in a way which does not mask the flavors of the spices or hops.

In both cases the inclusion of a Munich or Vienna malt will deepen the profile and add a bit of warmth. We are partial to Cargill Munich or Meusssdoerffer Vienna in this case.

Of course with the freedom the Winter Warmer category provides these are only suggestions. Feel free to mix, match, and explore as your creativity takes you. And above all enjoy! Happy Brewing!

— Cargill Malt