

# BREWING WITH BRIESS

Volume 8, Issue 2

Availability | Selection | Consistency

Spring 2003



Availability,  
selection and  
consistency  
from Briess...

Base Malts

Wheat Malts

High Temp Kilned Malts

Caramel Malts

Special Processed Malts

Dark Roasted Malts

Cara-Pils® Malts

Rye Malt

Roasted Barley

Certified Organic Malts

Pure Malt Extracts

Flakes & Colorants

(920) 849-7711



## Wheat malt: quality through research

By David Kuske  
Director of Malting Operations

Brewing a beer with wheat has always been a challenge due to the potential for slow runoff, stuck mashes, and obtaining the correct amount of haze for the style. It is our belief that the age old philosophy of why wheat poses so many brewhouse performance issues lies much deeper than the simple fact that wheat does not have a husk and barley does.

Throughout history, a great deal of scientific and practical research has been conducted on malting barley to develop varieties that malt uniformly and thus minimize difficulties in the brewing process. Unfortunately, because wheat is used in much lower overall quantities in the brewing industry as a whole, there has been little or no drive to conduct similar research on wheat varieties.

Briess Malting Company recognized this deficiency as an opportunity. In the mid 1990's we began an extensive pilot malting and brewing research project to identify existing wheat varieties that not only perform well in the malting process but also carry the desirable characteristics of flavor, color development, consistent turbidity,

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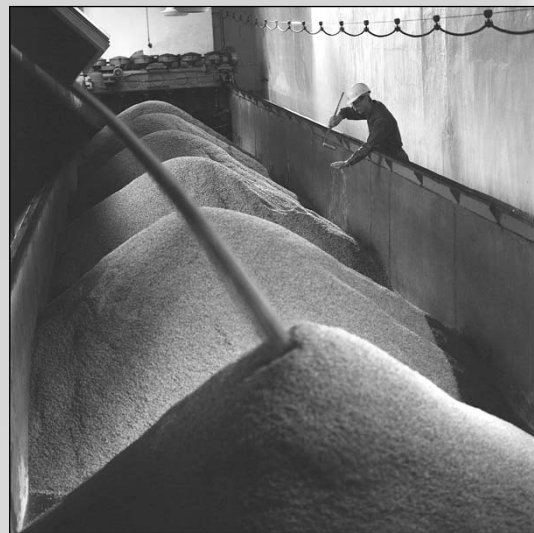
### Rye Malt makes a fresh, uniquely flavored Roggenbier

Rye Beer, or Roggenbier as the Germans call it, has a fresh, dry characteristic and golden to amber color. It is a unique option for your customers who prefer lighter flavored, lighter colored all malt beers.

Brewing rye beer, however, can be as challenging as brewing wheat beer because rye has no husk and can cause a sticky mash, slow runoff and filtration problems. Some brewers use rye flakes, which are pregelatinized so they can be added directly to the mash. Many excellent rye beers are being brewed using flakes.

Rye Malt, on the other hand, has a uniquely distinctive flavor. We recommend pilot brewing with 5% increments of Rye Malt until the desired flavor is obtained. Rye is quite strong flavored, so less than 20% of total grist may be all you'll need.

Call us at (920) 849-7711 if you would like help developing or reformulating your rye beer.



David Kuske inspects green malt as it is transferred into the germination compartment.

## Thank you, Mary Anne; Enjoy your retirement!

After 42 years of dedicated service to the malting and brewing industries, Mary Anne Gruber has traded in her sales and technical service hat for a fishing pole and retirement.

The Association of Brewers honored Mary Anne at the recent Craft Brewers Conference in New Orleans, presenting her with its AOB Advisory Board Recognition Award.

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Mary Anne holds the award presented to her by the Association of Brewers for her years of service to the brewing industry.

## Wheat malt . . . from page one

uniform enzymatic development, and maximum runoff potential into the brewing process. We found very substantial differences in malting and brewing performance among the many wheat varieties we investigated.

### Working with growers

Another very important discovery was made during our research and that has to do with the differences in raw material markets. When a grower decides to plant malting barley as a cash crop, he or she does this with identity preservation (IP) in mind from the very start. In order for barley to command a "malting grade" premium price, it not only has to meet stringent physical and chemical requirements, it has to be identity preserved from farm to market. To accomplish this, growers pay a premium for certified seed, which guarantees varietal purity of the barley. After harvest, this barley has to remain segregated by variety throughout a complicated system of movement from farm to malting company. If a mixture of varieties occurs at any point, the barley loses its value as "malting" and is sold to the feed market at a substantial loss. In the U.S. wheat market, this IP system does not exist.

Wheat is judged and graded solely on

Briss makes  
Red Wheat Malt and  
White Wheat Malt.  
Deciding which one  
to use often boils  
down to personal  
preference on the  
part of the brewer  
because of their  
similarities.

its physical and chemical makeup for requirements of various food applications.

Our challenge went beyond simply identifying the best variety or varieties of wheat into developing a network of growers and marketers who would commit themselves to this type of system. We're happy to report this

system has been firmly in place since 1995 and continues to serve us well.

Our commitment to supplying the highest quality wheat malt with the best brewhouse performance is never completely finished. Each and every fall, when a new crop of wheat becomes available, we start the pilot process over and evaluate how the growing conditions have affected the select varieties we have chosen in the past, and at the same time, evaluate new varieties. When the winner has been picked, our needs for the entire year are contracted and that wheat is held in segregation for us until we are ready to malt it.

### Quality pays off

Brewing with wheat malt will always be more challenging than brewing with barley malt. The goal of our past and ongoing research with identity preservation of wheat is to provide consistency for our customers. Once you have dialed in the adjustments to your process to brew with our wheat, it is our belief that you will notice the consistency from lot to lot and year to year.

We recognize that our wheat malts are not the least expensive wheat malts available to you, but we feel that the additional time, effort and expense spent up front obtaining a consistently superior raw material will pay back the dividends of time savings and consistency of your finished products.

## Robert Widmaier, Ph.D., joins the Briss sales & technical team

Robert Widmaier, Ph.D., has joined the staff at Briss Malting Company as Western Key Accounts Manager. Dr. Bob, as we call him here at Briss, works from his home office near Seattle, Washington in Woodinville.

Dr. Widmaier is working with existing customers in both sales and technical support. He is also an active member of the Briss Technical Team, which includes Key Accounts Manager Penny Pickart, Director of Malting Operations Dave Kuske, Manager of Technical Services Bob Hansen, Director of Quality and Safety Brad Rush, and Company President Gordon Lane.

Dr. Widmaier has been involved in the brewing and malting industries for years, having worked in technical and managerial capacities in several malting

companies prior to working in the food starch and sweetener business. Most recently he operated his own consulting business.

He has experience working closely with brewers and maltsters on a variety of technical and processing issues as well as working with growers and plant breeders in developing new barley varieties for us in brewing. Prior to that, Dr. Widmaier worked in research & developing for Kraft, Inc.

He received a Ph.D. from Purdue University in Pharmaceutical Chemistry and Natural Products, and a B.S. Degree from East Carolina University in Biochemistry.

Dr. Widmaier is a member of the Institute of Food Technologists, the American Association of Cereal

Chemists and the American Chemical Society. Most recently, he rejoined the Master Brewers Association of the Americas and the American Society of Brewing Chemists. He serves on the Washington State University Board of Visitors and the Washington Technology Center Biotechnology Advisory Committee.

Dr. Widmaier and his wife Cynthia have four children ranging in ages from 19 to 22. In their spare time Dr. Widmaier and his wife participate in camping, fishing, biking, hiking, gardening and paying for college.



Robert Widmaier, Ph.D.



**(Left photo)** The winners circle of the third annual Royal Oak Polar Beer Festival were (left to right): Mike Plesz, co-owner of Royal Oak Brewery and Rochester Mills Beer Co. holding the People's Choice Award with Eric Briggeman, lead brewer Big Buck Auburn Hills; Tim Selewski, brewer Royal Oak Brewery; Murf Murphy, lead brewer Arcadia Brewing Company who won the Monster Beer of the Show Award for his bourbon barrel aged Scotch ale; Pat Scanlon, lead brewer Rochester Mills Beer Co.; and Drew Ciora, co-owner of Royal Oak Brewery and Rochester Mills Beer Co. **(Right photo)** Big Buck Brewer Rockne VanMeter and Lead Brewer Eric Briggeman hold the People's Chocie Award.



**Mary Anne . . .** from page one

"Her influence has touched the entire brewing industry," the AOB stated in a post-event press release. She was also recognized with a standing ovation by her peers.

Two nights earlier in New Orleans, many of Mary Anne's friends in the brewing industry came to a retirement party hosted by Briess Malting Company. There, she was further presented a plaque of recognition by Monica Briess.

All of us at Briess Malting Company wish Mary Anne the best in her retirement...and happy fishing!



**Congratulations to Nick Funnell**, head brewer for Sweetwater Tavern (three locations in Virginia), who won a year's supply of Briess Malted Milk Balls during the 2003 Craft Brewers Conference.

**'Limited edition' Victory® Wheat Malt available**

Since its debut more than six years ago, Victory® Malt has been a hit with brewers who love the warm, toasted flavor and aroma this specialty malt imparts. Additional processing not only develops these characteristics, but a color of 25-30 °L which imparts deep golden to light brown colors as well.

If you haven't had the opportunity to use Victory® Malt, we invite you to call for a sample and product information. You'll think you're in a bakery when you're brewing with it, that's how good it smells!

So, we asked, what would happen if we used this same special malting process on wheat malt? The result, after making a "limited edition" production of it, is a specialty wheat malt with warm, toasty flavor notes and a wonderful aroma of fresh-baked bread.

This would be a distinctively unique

malt to use in a special summer or fall brew, or if you're in the mood for experimenting. Used in any style beer, Victory® Wheat Malt will impart mouthfeel and increased foam retention like other wheat malts do. In addition, its toasted characteristics will contribute unique flavor and aroma to finished beers.

Try it in a kolsch, pale ale, and cask-conditioned ales. You'll be able to maintain quite light color if you use Briess Pilsen Malt (very light colored!) as your base malt. Plus, Briess Pilsen Malt has such subtle maltiness, that the toasty wheat flavors and aroma of Victory® Wheat Malt will be more pronounced.

This is a "limited edition" malt, available only as whole kernel until existing stocks are depleted. Call us at (920) 849-7711 for a sample. Regular Victory® Malt is available year 'round.

**Seeing double at the Polar Beer Festival**

Double Brown Ale was the beer style chosen for a Single Recipe Tasting competition held at the annual Polar Beer Festival this past February in Michigan. Double Brown Ale is a a brown ale that is higher in alcohol and hops than traditional browns but not as extreme as American Browns, reported Rex Halfpenny. Rex and his wife Mary of the Michigan Beer Guide represented Briess Malting Company at the event.

Briess donated the malt for the Single Recipe Tasting, in which brewers make the same beer using the same malt and hops. All the beers are tasted and a People's Choice Award is presented. In third place was Kuhnhehn Brewery, in second place was Copper Canyon, and the People's Choice Award was presented to Big Buck Brewery of Auburn Hills.

In all, 50 beers made by 14 members of the Michigan Brewers Guild were sampled during the third annual Polar Beer Festival.

*(Photos courtesy of Rex Halfpenny.)*

**Crop year . . .** from page four

importantly is mash pH which is ideal at a 5.1-5.3 and allows for maximum extract out of the process. Foundation water pH should be at a 6.6 +/- 0.2 to achieve a 5.1-5.5 in the mash process which allows for maximum enzyme activity. Typically proteolytic enzymes perform the best at a pH of 4 - 6-5, but are required to perform at a mash pH of 5.1-5.5.

**Call for assistance**

These are a few of the critical variables that should be addressed by brewers at all times to evaluate the brewing process from the mill to the mash tun. Keep in mind if these variables are in the ideal ranges, extract and lautering efficiencies will increase.

The 2002 malting barley crop year has offered challenges not experienced in recent, good crop years. Working together toward the common goal of excellent beer, we will all gain more knowledge, experience and appreciation of our unique industry. Please call us with your questions.



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*Availability | Selection | Consistency*

*Hey Dave and Brad, tell me about malt from the 2002 barley crop year*



*David Kuske is Director of Malting Operations for Briess. David oversees all malting operations at Briess, including the production of more than 45 types of base and specialty malts. He is active in the American Malting*

*Barley Association and the MBAA, and is past president of ASBC Local 4 Milwaukee Chicago.*

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By now brewers are well aware of the poor condition of some of the 2002 malting barley crop. Higher protein, thin barley, pre-harvest sprouting and staining, loss of viability during storage, and short supply of quality malting barley has raised concerns for growers, maltsters and brewers alike.

Here at Briess, contracting for quality malting barley is an important, ongoing facet of our operations. Fortunately, we have longstanding relationships with multiple suppliers that have assured us an adequate supply of barley to malt.

Nonetheless, the condition of some of the crop has made it a challenge to malt. Thankfully, malting is more advanced than ever which means maltsters can get the best out of each lot of raw barley. Since the drought of 1988, barley crops have been very good and the analyses of finished malts have varied little from crop year to crop year.

However, because characteristics of the raw barley carry over into the finished malt, some malt from the 2002 barley crop year may be at the low or high end of their specs. Adjustments by the brewer can help compensate for this to achieve efficient brewhouse performance and consistent, high quality finished beer.

This makes it essential for the brewer to receive a Certificate of Analysis with every shipment of base malt received. The COA holds the key to some adjustments you may need to make in the brewhouse for efficient operation. If you are not receiving these but would like to, let your customer service representative know when placing your next order.

Some of the characteristics of malt from last year's crop, however, are not as apparent on an analysis. Irregular kernel size, in particular, will impact milling and mashing.

**Milling**

The challenge is to adequately crack the kernel to allow for conversion of the malted barley in the presence of enzymes, to fermentable extract. Milling is a critical step for brewers as you need to prepare the malted barley for the brewing process, but don't want to create problems by over grinding the material.

If no adjustment is made on the mill, smaller kernels will not crack. However, large kernels could be pulverized if mill settings are adjusted to crack the small



*Brad Rush is Manager of Quality & Safety at Briess Industries, Inc. Brad holds a Bachelor of Science Degree in environmental analysis and was a brewer and worked in research and operations at*

*Leinenkugel and Miller Brewing Companies prior to joining Briess.*

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kernels. That can cause stuck mash or slow runoff. Use of a filtering aid like rice hulls or malt hulls could help overcome that possibility in order to attain desired yield.

The European Brewing Congress (EBC) recommends the following breakdown of milled malted barley to maximize extract and brew house efficiency.

Screen	% on
#14	18-20
#18	6-10
#30	30-36
#60	15-20
#100	7-10
PAN	8-10

**Mashing**

In the mash process there are several things that can be done to assist in yields for the brewing process. Most

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