

BREAD Lines



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WheatStalk 2012

The Bread Bakers Guild of America is very excited to announce WheatStalk 2012! This national bread conference will be held June 28 to June 30, 2012, and is the keystone of our Cereal Series of 2012. The event will feature three educationally packed days with hands-on classes, demos, lectures and oven building taught by industry leaders and old friends.

WheatStalk will be a joining together of member bakers, millers and growers to learn and improve techniques, share ideas and build community. WheatStalk will create an inclusive and fun-filled atmosphere, while maximizing an educationally intensive opportunity.

Kendall College in Chicago has graciously agreed to host WheatStalk. Located in the heart of the Heartland, this venue will be easily accessible for many Guild members who might not otherwise be able to attend. We will supply a list of recommended hotels later this year.

We have started our preparations but have a mountain of work ahead of us. We invite you to join a committee and contribute to the planning effort. Please contact Melina Nelson at ecomplex@mac.com and watch upcoming issues of *Bread Lines* for details on registration.

We look forward to baking with you in the Windy City.

– *The WheatStalk Committee*



PHOTO: LOURDES M. ALVES

ASHEVILLE BREAD FESTIVAL

Multigrain and sourdough breads from City Bakery, Asheville, NC

My husband and I opened our bakery on March 21, and I've been wracking my brain, trying to see something larger than the work on the bench in front of me, something that's relevant to the membership and something to help me remember there's a big wide world outside of the work I'm doing right now. Don't get me wrong; the work is fantastic, more satisfying than I could have imagined, but putting together coherent thoughts and actual sentences is hard for my savagely sleep-deprived brain.

One thing I've been thinking about is the journey from bench worker to bakery owner – a path many of you have taken, a path many hope to take, and a path many have decided to forego for all sorts of very wise reasons. I've met and tried to hire many people who swear to me all they want to do is bake bread – they go on about the passion, the love, the complete satisfaction of pulling well-crafted loaves out of the oven. And then I say, "Great! Meet me here at 1 a.m.!" and their faces fall, and they say, "Oh, no, I can't get up that early!" and go on their way.

I don't have to tell this esteemed membership about this disconnect between a would-be bread baker and an actual baker, since our doorsteps see many of the ones-who-won't-wake-up. But if there are readers out there thinking of making the intrepid jump to professional baking, please open your hearts and minds to the fact that this is wonderful work, the hours are early, and there's something really great about transforming your life to realize your goals.

When I started baking, we lived in a world free of the idea of famous everyone and

everything. The word "cheflebrity" didn't exist, there wasn't a televised challenge for every item in a kitchen, cupcakes were just those little cakes, and we all just did our work. While our profession has achieved some elevated status, thanks to this obsession with food, and our options have expanded due to our customers' heightened interests in cool foods, some of the workers attracted to this profession have a slightly skewed sense of what's expected and what's possible.

I implore every would-be baker to accept all challenges, and to focus on the here-and-now. Goals are good, but thinking "I'm going to be a rock star" is a complete distraction from the work at hand. Embrace the challenges of organizing your life around quasi-abnormal hours, the idea of repeatedly doing great and precise work, and the wonderful fact that you're joining the ranks of some very awesome and interesting individuals. We urgently need good bakers; all Guild bakeries have hit some point where they can't find good help. Training is great, staging is fun, studying is fantastic – but until someone stands at the bench doing the same thing over and over and is able to see the joy in that, none of those other things matters.

I don't plan for this to be an advice column, but this is what's on my mind these days. I guess I'm a little bewildered by people who have spent so much time and money on school, or spent so many agonized hours deciding to change careers, and then when faced with the actual thing they've been striving for, can't manage to take the next step. I really don't know how to account for it. Since *The Guild* is a group of educators and learners, I



PHOTO: COURTESY OF SOLVEIG TOFTE

trust that we will continue to make the connections between dreams and realities for both sides of the bakery equation.

Hopefully, between now and the next installment, I'll manage to find a baker with a loud alarm clock, so I can find a bit of time to get back in touch with the wonderful world at large. I'm told that everyone is doing cool stuff - it's festival season, the farmers markets are firing up in these northern climes, interesting grains are getting harvested and milled and you guys are turning them into fascinating loaves. . . But for now I've got to get back to it - these preferments aren't going to mix themselves.

SOLVEIG TOFTE
Board Chair and
Owner of Sun Street Breads
Minneapolis, MN

On July 1, Solveig Tofte resigned as Chair of the Board of Directors to devote her full attention to her new bakery and café, Sun Street Breads in Minneapolis. She will remain a member of the Board. The new Chair, Jeff Yankellow, will outline his vision for *The Guild* in the fall issue of *Bread Lines*.

F R O M T H E E D I T O R

Everything needs to grow and get better: your business, your baking knowledge, your garden and yes, even your *Bread Lines*. Anyone who has been a member of *The Guild* for at least a few years has witnessed the gradual evolution of *Bread Lines*. I'm not the longest serving member by any stretch, but I've been getting

Bread Lines since the late 1990s. It's really cool to lay an issue from that time period next to its current iteration.

What's truly marvelous is that most of the information contained in those early issues is still completely relevant today. And, as confirmation of that, all this year and next, as we approach *The Guild's*

20th anniversary, we will be reprinting technical articles from the first 18 years of *Bread Lines*. Didier Rosada's original article (reprinted in this issue), "Mixing and Mixing Techniques," appeared in 2002 and still can serve as a primer to any new baker and as a refresher course for those who have been in the bakery a long time.

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The Bread Bakers Guild of America gratefully recognizes its 2010-2012 fundraising partners for their generosity.



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Sandwich Isle Bread Company
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The goal of each article is to provide you with informational and practical content that will be useful to you. The write-ups on the regional events should give you enough information from the workshop that you will be able to apply some of the techniques presented, even if you weren't able to attend. The feature articles offer a "deeper dive" into a particular theme or topic relevant to baking.

Perhaps the greatest resource The Guild has is the vast and varied collective knowledge and experience of its membership. No one author can write the definitive article on a subject, no matter how narrow the focus. Our hope is that the articles themselves can serve as a starting point for a "conversation" which allows for a fuller examination of a particular topic. In this issue, for example, we are printing a response to an article that appeared in the previous issue (Volume 19, Issue 1) because two of our members felt that some clarification and further discussion on the topic was warranted. From there the discussion can move online to The Guild's eGroup for further debate.

Also in this issue, we are starting a new feature: "Hot Topics." We will select a subject that some might view as controversial and will find two knowledgeable people to present opposite viewpoints. Again, we envision this as a starting point for enlightening discussions among our members.

And finally, this really is your *Bread Lines*. Please let me or Laverne Dicker know what you like, and what you'd like to see changed. And if you have any ideas for making it a better resource, please let us know that as well.

TOD BRAMBLE

Bread Lines Co-Editor and
Guild Board Member

LEAVING THE BOARD

— Ann Burgunder

By **ABE FABER** Guild Board Member and Co-Owner of Clear Flour Bread, Brookline, MA

Ann Burgunder's term on the Guild Board of Directors expired at the end of 2010. She served on the Board for six years, and every one of those years was packed with accomplishments.

If I referred to Craig Ponsford March issue of *Bread Lines* as setting lofty standards to achieve, Ann would be my example of a Board member who then wholeheartedly took on the nuts and bolts of making it happen. She joined the Board at the start of planning for Camp Bread 2005, and I was lucky enough to get her to agree to work with me on the project.

Ann is a woman who feels strongly that things should look good and that everything should have some bright red in it! When she arrived, everything The Guild did was in black and white, with very few photos. By the time she left the Board, *Bread Lines* was all in color, with plenty of graphics and pictures. A large part of that is her legacy: creating places for us to experience baking as a visual craft.

She dove right into the challenge of designing the look and feel of the Camp Bread event. We were committed to creating something really special that enveloped attendees in a sensory world different from anything The Guild had ever done before. Ann worked with artists, designers and teachers to create imagery for printed materials, banners, a science fair, meals, posters, etc., to create and communicate the visual experience of Camp Bread.

The Guild had always done a great job presenting educational opportunities for the membership, but Camp Bread set a new standard for creating a more comprehensive experience wrapped in a fun, modern package. Ann saw right away that while we couldn't put on a camp every year, we could do a much better job with our regional events, which up until

that time had no underlying theme tying them together.

She proposed that we create a comprehensive theme each year to focus our educational efforts.

What she saw was that although we created quality classes, they benefited only the attendees.

By planning a year's worth of events all at once and arranging to have photographers and writers at each event, we could share concepts and formulas from every event in *Bread Lines*.

For 2008, the debut year of this new concept, Ann created a series of 12 events under the banner "Women of the Guild."

Ann has told me that one of her goals in joining the Board was to encourage women bakers to join The Guild and hone their craft. She is enormously proud of shining a spotlight on the talented Women of the Guild who taught these classes and who served as models and inspiration especially for the women in our membership.

By creating Women of the Guild and the regional events template we still use, Ann has contributed hugely to the educational mission of The Guild.

The following year she served on committees that produced "The Draft for Team USA," which recognized the 10th anniversary of the first Bread Bakers Guild Team USA gold medal at the Coupe du Monde de la Boulangerie and featured a series of 12 master classes taught by Team USA members, coaches and managers. In 2010 it was "The World's Fair of Bread," featuring international baking traditions. This year we have rolled out an exploration of uniquely American baking traditions, "Breadville USA."



Ann Burgunder with Christian Vabret, president of EFBA (l'Ecole Française de Boulangerie d'Aurillac) and founder of the Coupe du Monde de la Boulangerie, at the 2008 Coupe du Monde, where she presented him with a Women of The Guild T-shirt. Ann was the coordinator of Women of The Guild, The Guild's 2008 regional event series.

Ann believed that *Bread Lines* was one of the most important, yet undeveloped, elements of the educational mission of The Guild: unlike hands-on events, *Bread Lines* reaches every member. She worked tirelessly with the Newsletter Committee and staff to improve the technical and educational content of the articles. She worked with a designer to give the newsletter its current graphic look and feel, and she created the Camp Bread 2007 and Women of the Guild special issues.

I recently asked Ann her thoughts about her time on the Board, and she wrote back, "I found it sometimes frustrating, often challenging, I learned and grew a lot from the long distance working together with other Board members." She went on to say she "really enjoyed working with a group of talented, knowledgeable and query colleagues." Obviously, the word "query" was a typo, and I would like to think she meant to say "quirky." But who knows. Maybe she meant querulous? The Board is certainly that at times, as we seek to carry out the mission of The Guild. Ann was always someone who cared much more about quality and standards than just getting the job done, whether it meant a little quarrel or not. We have all enjoyed and appreciated the amazing amount of time, dedication and energy that she has put into developing the look and feel of what The Bread Bakers Guild of America is today. ☀

LEAVING THE BOARD

— Frank Carollo

By **TOD BRAMBLE** *Bread Lines* Co-Editor and
Guild Board Member

At the end of December 2010, Frank Carollo of Zingerman's Bakehouse in Ann Arbor, Michigan, stepped down after a three-year term as a member of The Guild's Board of Directors. In recognition of the time he spent on the Board, I spoke with him on the phone and asked if he could reflect on his evolution as a baker and The Guild's role in it.

Frank was a founding partner at Zingerman's Bakehouse in 1992. He remembers that time as one where artisan bakers were truly on their own to develop the craft, largely through experimentation. Unlike today, there weren't many books written on the subject.

Then, in 1993, just a year after the start of Zingerman's, the newly formed Bread Bakers Guild of America was holding its first educational event at the International Baking Industry Exposition (IBIE) in Las Vegas. Frank said it was a watershed event for him. Suddenly, he met bakers from around the country who were engaged in the same thing and working from the same basic, on-the-job experimental knowledge.

In some cases, he encountered "professional" bakers who lacked a great deal of knowledge. When Frank, with his signature open and disarming manner, confessed to making yeasted and naturally leavened breads in the same bakery, a zealous professional informed him that "You can't do that!"

Frank replied cheerfully, "Well, we are, and have been doing it quite successfully."

This first Guild event at IBIE was what helped him begin to develop a network of baking colleagues: bakers who were doing what he was doing, whom he could call on to share their experiences, discuss business issues and to lend help and support.

Frank drew an interesting parallel between The Guild and television's Food Network. He pointed out that the Food Network has been hugely successful in creating celebrity in an industry that, up until several years ago, was largely staffed by people doing very hard but anonymous work in kitchens around the world. Frank's view is that The Guild has been successful in drawing attention to great artisan bakers in the U.S. and abroad and making many of them familiar to the membership of The Guild. In contrast to many chef-celebrities, however, he finds most artisan baking superstars to be humble and connected to the history of what they are doing. He finds it refreshing to be a part of an industry filled with such people.

Frank kept returning to this idea of people and baking. Zingerman's couldn't have become the business that it has without all the people who contributed along the way. He recalled that in the early days of the Bakehouse, he had a mere 10 days of baking experience when he hired his first crew. And Frank had more experience than anyone else! But they figured it out together. The Bakehouse today is making a much higher volume of quality breads and pastries than in their first days, but although it is a big operation, it is a bakery full of people, not overrun by machines.

Another theme close to Frank is the role of baking in the home. Frank credits The Guild and its members with pushing baking back into the home. He points out that this runs counter to other industries, in which businesses find a better way of doing something that people always did for themselves, and more cheaply. So people stop doing whatever it was they always had and went outside the home for it. Frank sees much of the work of



Frank Carollo at Zingerman's Bakehouse in Ann Arbor, Michigan

The Guild and its professional members as making great baking a reality for the serious home baker. As a result, along with the flourishing of great bakeries around the nation, more of us are now baking at home and employing many of the techniques of the professionals.

Until Frank was on The Guild's Board of Directors and became involved in all aspects of the membership, he wasn't aware of how large a role the serious home baker played within the organization. In fact, Frank feels he has learned as much from the serious home bakers as the professionals in the Guild's Yahoo eGroup. He recognizes the importance of leveraging the knowledge of the serious home baker and feels that The Guild needs to continue to work on connecting the needs and experiences of this group of members effectively.

When Frank looks back on The Guild's efforts, he sees it having a major impact on the creative and educational opportunities available to bakers. And going forward, he hopes to see The Guild continue to provide education for home bakers and professionals alike, so that they can all learn from their greatest resource: each other.

During the past 19 years, Frank Carollo has seen the development of some unbelievably educated bakers. His feeling is that whereas in the beginning we had to look to Europe for baking knowledge and training, we can now look to our own, and for this we all owe The Guild a huge debt of gratitude. ✨

women

BAKE BREAD

By **TOD BRAMBLE** *Bread Lines Co-Editor and Guild Board Member*

Imagine yourself arriving in a new country. You don't speak the language; you have left behind everything you know. Immediately upon arrival, you need to find shelter. Then you need to find work, so you can feed yourself and your family and start to meet some of your daily needs.

This scene, scarcely imaginable for most us, plays itself out daily and has done so ever since people began coming to North America looking for a better life. Immigrants continue to arrive today in great numbers, bringing with them highly refined skills. The baking industry in the United States especially reflects this, with immigrants contributing greatly to the regional "flavor" of baking wherever they settle.

The reality facing many of today's immigrants is that while there is no shortage of work, much of it is unskilled, low-wage, and often dangerous. The situation is especially acute for immigrant women arriving in New York. Many of them find employment in the garment industries, food service, and as domestic staff in hotels.

Hot Bread Kitchen (HBK), a Guild member bakery located under the Metro North Railroad tracks at 114th Street in Harlem, sees the great potential these women bring with them in the form of their baking skills and work ethic. HBK provides English language instruction

and employment, and the women provide years of baking experience with products indigenous to their countries: tortillas, chapati, lavash. The combination makes great social and business sense.

In addition to being an ethnic product bakery, HBK acts as an incubator for small-scale baking businesses looking for a commercial space in which to develop, test and launch their products. This is an enormous head start, as many of these businesses were started in people's homes but haven't attained sufficient scale where they can afford to rent a space. HBK offers a much-needed bridge between a home-based baking business and a full scale commercial bakery.

On May 14, I attended a fundraising event for HBK in New York. Organized by Sarah Black of Fairway Market and supported in part by King Arthur Flour and Fairway Markets, Women Bake Bread gathered together a group of women bakers – many of whom are Guild members -- who have shaped baking in New York.

This was not a charity event in which you donate cash to your favorite non-profit organization and get only a coffee mug in return. The 65 people who registered were taught by Amy Scherber of Amy's Bread, Monica Calderon of Grandaisy, Rhonda Crosson of The French Culinary Institute, Sharon Burns-Leader of Bread

Amy Scherber giving a demonstration on sourdough bread.



Alone, Sarah Black of Fairway Market, Karen Bornarth of Le Pain Quotidien, and Jessamyn W. Rodriguez of the Hot Bread Kitchen.

The event ran all day, starting at 8:30 am with opening words of introduction by Jessamyn W. Rodriguez, founder and Director of HBK. Next came two simultaneous classes: Jessamyn and some of her staff teaching a primer on international breads, and Amy Scherber giving an introductory lesson on sourdough bread. In the second session Sarah Black gave a demonstration on how to use one dough to make three breads: ciabatta, fougasse, and focaccia, and Monica Calderon and her bakers demonstrated the art and technique of Roman-style pizza.

By 1:00 pm everyone was ready for lunch. Instead of taking a break, however, we gathered in the large production room where a panel discussion of all the women instructors was moderated by Charlotte Druckman.

After lunch, Karen Bornarth held a class featuring the Classic French Baguette. This was a true hands-on session with all the participants taking turns shaping, using various techniques. And for the final sessions of the day, Rhonda Crosson gave a demonstration on hand-shaping techniques for bagels and pretzels, and Sharon Burns-Leader gave a lesson on flatbreads and crackers.



The instructors at the Hot Bread Kitchen fund raising event (from left to right): Sarah Black, Karen Bornarth, Rhonda Crosson, Monica Calderon, Sharon Burns-Leader, and Jessamyn W. Rodriguez

PHOTOS: MOLLY CROSSIN

COUNTRY SOURDOUGH BOULE

Contributed by **AMY SCHERBER**



Country Sourdough Boule baked by Amy Scherber during her demonstration at the Hot Bread Kitchen.

PREFERMENT

- Mix preferment 1 day before you plan to use it. Let rise for 4 hours at room temp, then chill until ready to use.

FINAL DOUGH

- Place water, starter and yeast in the bowl of a spiral mixer. Mix on 1st speed to break up the starter, 1 minute.
- Add flours and salt and mix for 4 more minutes on 1st speed, or until dough has come together and flour is fully hydrated. Dough should feel wet and sticky. If too dry, add cool water and mix to incorporate.
- Let rest 15 to 20 minutes.
- Mix again on 1st speed for 1 minute, then 2nd speed for 3-5 minutes until dough is stretchy and elastic. Desired temp, 78°F.
- Place in oiled tub to rise at cool room temp.
- After 1 hour, fold and turn.
- After 45-60 minutes divide dough into pieces at 525 gr. or 750 gr. and pre-shape into balls.

SHAPE & BAKE

- After 15 minutes shape into loaves (boules, batards, etc.)
- Let rise in cloth-lined basket or on boards lined with couche for 1-2 hours.
- Score and bake with steam in preheated 475°F deck oven until dark brown and crusty.
- Cool, then enjoy. ✨

PROCESS - Country Sourdough Boule Preferment

Mixing	Type of mixer	Spiral
First fermentation	Length of time	4 hours at room temp, place in cooler until needed
	Dough temp	78°F
Final Dough		
Mixing	Type of mixer	Spiral
	1st speed	5 mins
	Autolyse	20 mins
	1st speed	1 min
	2nd speed	3 - 5 mins
	Dough temp	78°F
First fermentation	Length of time	2 hours
	Number of folds	1
	Timing for folds	After first hour
Shaping	Divide	.525 or .750 kg
	Preshape	Round
	Resting time	15 mins
	Shape	Varied
	Proofing device	Couche, basket, board
Proof & Bake	Final proof time	1 - 2 hrs @ 75°F
	Oven type	Deck
	Steam	20 secs
	Total bake	Until dark brown
	Temperature	475°F
	Damper open	N/A

The generosity of the women leading the demonstrations was enormous, and their willingness to pass on their baking knowledge led to the event being a success for those in attendance. Karen Bornarth summed it up perfectly when she said, "For me it was a terrific day—we raised money for a worthy organization, and I got to hang out in the company of people who love to bake bread, which is always fun."

The event raised over \$7,000 dollars for Hot Bread Kitchen.

During the late afternoon, while the last demonstrations were still underway, the women bakers of HBK began to arrive for the start of their production shifts. The energy of the place started to shift from a wonderful day of baking instruction to one of production, all fueled by a passion for the craft of baking and a commitment to making lives better. ✨

For more information on HBK, visit <http://hotbreadkitchen.org>.

COUNTRY SOURDOUGH BOULE

Total Dough Weight (TDW)		10.000 kg		Total Flour Prefermented	10.80%	
Ingredients	TOTAL FORMULA		LEVAIN		FINAL DOUGH	
	%	kilograms	%	kilograms	Ingredients	kilograms
Total Flour	100.00%	5.450 kg	100.00%	1.457 kg	Total Flour	4.860 kg
Unbleached Bread Flour	97.10%	4.670 kg	100.00%	0.590 kg	Unbleached Bread Flour	4.080 kg
Pumpernickel Flour	2.90%	0.780 kg			Pumpernickel Flour	0.780 kg
Fresh Yeast	0.60%	0.035 kg			Fresh Yeast	0.035 kg
Kosher Salt	2.00%	0.108 kg			Kosher Salt	0.108 kg
Sourdough Starter*	4.20%	0.231 kg	39.20%	0.231 kg		
Water (75°-78°F)	76.60%	4.176 kg	39.20%	0.231 kg	Water (75°-78°F)	3.945 kg
					Levain	1.052 kg
Totals	183.40%	10.000 kg	178.40%	1.052 kg		10.000kg

*Sourdough Starter is Active White or Rye

The Asheville Bread Festival APRIL 2-3 2011 ASHEVILLE, NC

Hundreds of attendees converged in downtown Asheville once again to celebrate the region's vibrant artisan bakery scene at the seventh Asheville Bread Festival. Crowds packed the fair all morning, where fifteen local artisan bakeries showcased handmade bread, pastries and pretzels. Workshops included world-class baking instruction by Lionel Vatinet and Didier Rosada as well as lectures by Jenn Lapidus (NC Organic Bread Flour Project), Dave Bauer (Farm & Sparrow Bakery), ovenbuilder Antoine Guerlain (Old Stone Heat) and others. Peter Reinhart and Joe Lindley (Lindley Mills) presented interesting baking performance and nutritional information about sprouted wheat flour. The festival was sponsored by the local bakeries, the Bread Bakers Guild of America, Greenlife Grocery, Slow Food Asheville, Lindley Mills, and the Appalachian Sustainable Agriculture Project. Proceeds this year went to the newly-formed Carolina Ground, L3C, a mill dedicated to grains grown and ground on Carolina ground. ☀



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7

- 1 An artistically scored Apple Walnut Buckwheat loaf.
- 2 Patra Bonham Rule of Hillside Bakery, Knoxville, TN.
- 3 Didier Rosada taught two workshops: "Functional Breads At Home: Baking With Non-Wheat Flours" and "Delicious Sweet Breads At Home."
- 4 Peter Reinhart in the demo kitchen, teaching a class to 150 attendees on the use of sprouted wheat flour.
- 5 Peter Reinhart with sprouted whole wheat bread coming out of the oven.
- 6 Joe Ritota of Annie's Naturally by the Carolina Ground mill exhibit.
- 7 Various types of artisan breads were available for sampling.

PHOTO CREDITS:

- 1 LOURDES M. ALVES
- 2 KATHY KEYES
- 3 PETER REINHART
- 4-6 COURTESY OF PETER REINHART
- 7 LOURDES M. ALVES

Awake Through Years: Ethnic Baking in Chicago

BY HEIDI HEDEKER

*Guild Member and Instructor
Kendall College, Chicago, IL*

*“Things men have made with wakened hands, and put soft life into are awake through years with transferred touch, and go on glowing for long years.
And for this reason, some old things are lovely warm still with the life of forgotten men who made them.”*

– D.H. Lawrence

We bakers who love the feel of flour on our hands can testify to the longing to recreate certain sensations and flavors that we cannot forget . . . and the role of food in our memory.

Desiring the taste of bread, this country’s original immigrants, the colonists of 1609, struggled with their cultivation of wheat. To the end of the 19th century, wheat was still scarce and costly. Fittingly, across the Atlantic in 1875, the English poet Robert Browning wrote, “If thou tastest a crust of bread, thou tastest all the stars and all the heavens.”

Wheat brought from England failed to thrive in this country, with its more austere climate. But, as is the American way, two lucrative twins, longing and prospect, made a marriage, and forged opportunity. The Sante Fe Railroad endeavored to market land all along their railroad lines to customers who would use—and pay for—the railroad as it was being built. Many were enticed to move westward. Russian immigrant farmers, newly transplanted to the U.S. from even harder ways of life, in a sense carried their fields with them, cultivating a type of wheat which had survived the harsh, dry winters of the steppes. The Mennonite farmers came around 1875, from the Ukraine, to escape conscription into the Tsar’s army, setting up shop in the vicinity of Harvey County, Kansas. By the turn of the century, the wheat they planted and harvested began its rapid migration over railroad lines, newly laid to Chicago, New York, and Philadelphia.

Their hard wheat – known as turkey red winter wheat*– transformed the Midwest and Great Plains into the nation’s breadbasket. Today, their wheat lives on in over 200 varietal descendants.

By then, America already promised stockyards full of meat, landscapes which were swayed by a relentless, rebellious wind, and roads which wandered beneath an endlessly blue horizon. The cramped towns of Europe were left behind, where the relationship between labor and food seemed harsher, with greater class separations.

Many waves of immigrants soon came – filling the Midwestern pantry with ingredients from thrifty farmers, and shaping a cuisine of skilled craftsmen. More immigrants passed through Chicago then have stayed. Close to four million people immigrated through Chicago – in the years between 1910 and 1940, at least 25%, and usually closer to 35%, of Chicago’s population were direct immigrants. Today, the city has under three million inhabitants.

Just before the time of the Russian farmers, formation of the Austrian-Hungarian Empire in 1867 forced an exodus from that region. Czechs from Bohemia entered Chicago in the decades

Kolaczki are cookies which are made all year round. In the Czech Republic where they originated, kolaczki are round and filled with cheese, jams and fruit.

that followed. The Lower West Side neighborhood they settled, Pilsen, took its name from the Bohemian capital founded by King Wenceslas II, best known as the home of pilsner beer. Czech settlers, or “Bohemians” as they were called, fanned through Chicago, many of them eventually settling in Nebraska and the Dakotas beginning in the 1870s. They enjoyed savory and sweet dumplings of all kinds, and especially loved coffeecakes and pastries like kolache. In the Great Plains, where robust sheaves of golden wheat prickled over the landscape, Eastern European specialties abounded in small towns – from the Croatian povitica to the Czech kolache to Polish kolacz.

Many Russian immigrants were Jews who fled persecutions, known as pogroms, which were prevalent in Russia following the assassination of Czar Nicholas II in 1881. In Chicago, a large population settled around Devon Avenue in East Rogers Park, filling storefronts with challah and rugulach.

Italian immigrants who came to Chicago in the early part of the 20th century were often men who planned to work in the U.S. for a number of years and then return to Italy. Those who ended up staying formed the largest ethnic group in the Near West Side neighborhoods by the 1920s. The area around Taylor Street is Chicago’s

Continued on next page

*See Thom Leonard’s article, “Heirloom Wheat,” *Bread Lines* vol. 18, issue 3.



PHOTO: COURTESY OF DOBRA BIELINSKI

Awake Through Years: Ethnic Baking in Chicago

Dobra Bielinski and her mother, Stasia Hawryszczuk, in the doorway of Delightful Pastries, Chicago. Dobra is holding a tray of Marbled Poundcakes.



Continued from previous page

Little Italy. Saul Alinsky, Chicago’s famous community organizer, noted in 1946 the importance of good food to Italians, “Welfare workers would get very upset because our Italian families insisted on buying very good olive oil to cook with...Italians have to have olive oil.”

But by far the largest group of immigrants coming through Chicago has always been from Poland – the land of babka, kolacz, sekacz, chrusciki (angel’s wings), paczki and mazurek.

In Poland, the start of the pre-Lenten preparation before Easter is known as Tłusty Czwartek (Fat Thursday). In Russia, this time is known as Butter Week. In America, the Polish custom has been adapted to the Tuesday before Ash Wednesday, also known as Mardi Gras in French, or Fat Tuesday. All of the lard, sugar and fruit in the household had to be used up during this week, as they were forbidden during Lent. This is Paczki Day, when bakeries and pastry shops all over Chicago and the Midwest sell fruit- and custard-laden donuts by the bakers’ dozen. Not for the weak-of-heart, this splurge precedes Lenten fasts.

To Eastern Europeans, fine pastries and breads are still a luxury and a special-occasion treat. Dobra Bielinski, owner of Delightful Pastries in the Laramie-Belmont Polish district of Chicago, points out that European food is very rich in

comparison to American cuisine. “The butter, eggs, dark chocolate, and nuts make quite a difference to flavor and satisfaction,” she says, and observes that customers feel a need to balance that luxury with their interest in health. “I find that my customers seek relief if they buy a sweet pastry – they make up for it in a healthy bread. Adding whole grains or seeds to a cookie improves marketability, whether for wholesale or retail. For example, oatmeal or sunflower seed cookies fly out the door – the pleasure without the guilt, so to speak.”

Dobra thinks the movement towards sustainability and high quality go hand-in-hand. “Organic is not a new concept to Europeans; it’s part of how they view the world – as part of a larger cycle. As my very wise friend once told me, ‘What is the point of training people to make European pastries when there is no market for it?’ Just as the industry created a market for dark chocolate, we should create a market for high quality and sustainably made pastries and breads.”

Today, Chicago’s population is still diverse: one in eight of Chicago’s residents is foreign-born. Waves of migration through the past century have left behind a bazaar of food shops, and new immigrants continue their trek along Chicago’s elevated sidewalks, clutching bags full of memories, longing and reassurance from bakeries, groceries and cafes. ☀

POPPY SEED WALNUT TORTE

TOTAL FORMULA		
Ingredients	%	kilograms
Poppy Seeds, cooked and ground	100.00%	3.000 kg
Egg Yolks	20.41%	0.612 kg
Eggs	16.35%	0.490 kg
Sugar, powdered	33.33%	1.000 kg
Walnuts, coarsely chopped	20.00%	0.600 kg
Cake Crumbs, dried	12.00%	0.360 kg
Candied Orange Peel, chopped	20.00%	0.600 kg
Raisins	20.00%	0.600 kg
Baking Powder	1.00%	0.030 kg
Egg Whites	44.98%	1.349 kg
Totals	288.07%	8.641 kg

FOR ASSEMBLY	
Ingredients	quantity
Simple Syrup	500 ml
Vodka	750 ml
Buttercream Frosting, coffee flavor	as needed
Vodka	to taste

MAKES TWO SHEET PANS

- 13 kg poppy seed, cooked and put through a grinder or Robot Coupe
- 140 yolks
- 110 eggs
- 11 kg powdered sugar
- 1600 grams walnuts
- 1360 grams dried cake crumbs (from sponge cake or smashed butter cookies)
- 140 egg whites
- 1600 grams candied orange peel, chopped
- 1600 grams raisins
- 130 grams of baking powder

Paczki dough. Dobra’s bakery normally makes 200 paczki a day but during Mardi Gras produces them in the thousands. Delightful Pastries was featured on “Best of Chicago” for its paczki.



PHOTOS: COURTESY OF DOBRA BIELINSKI

BAKERY TOUR OF CHICAGO

By Melina Kelson-Podolsky, Guild Board Member and Chef Instructor, Kendall College, Chicago, IL

Chicago is the adoptive homeland of more nationalities than you can name. These immigrants settle in enclaves, many of them supporting their local bakeries as they seek out familiar flavors. Although the city is sprawling, many of these communities are near one another.

A famous street that represents many cultures is Devon Street, on the north side of the city. Busy storefronts on the east side offer Pakistani items. As one crosses Western Avenue, they venture into the Indian part of town. High quality in-house flatbreads from fermented grains and legumes are offerings at most restaurants and snack shops, but bakeries as we think of them are unusual. Heading west, the signs change from Hindi to Cyrillic, and the community becomes densely eastern European. At the end of that street is the Jewish community.

Argo Georgian Bakery

2812 West Devon Avenue 773-764-6322

The large electric tandoor in the center of the room invites the curious baker and customer. Cheese-stuffed hachapuri in a flaky, puff pastry dough and chewy lavash bread are signature items.

Tel Aviv Kosher Bakery

2944 West Devon Avenue 773-764-8877

Continuing west on Devon, one enters the Jewish portion of this strip. Tel Aviv Kosher Bakery has been a landmark on this street for generations, selling traditional items such as challah and rugelach.

Mekato's Colombian Bakery

5423 North Lincoln Avenue 773-784-5181

A family-operated bakery with displays filled with laminated pastries and savory baked goods. Traditional items include buñuelos and Danish-like pastries stuffed with guyaba and cheese.

Pan Hellenic Pastry Shop

322 South Halsted Street 312-454-1886

This family-run bakery features classic and lesser-known Greek pastries, made with care.

Pleasant House

964 West 31st Street 773-523-7437

Buttery and flaky crusts offset richly flavored, savory fillings at this British pasties shop.

Middle Eastern Bakery

1512 West Foster Avenue 773-561-2224

This small storefront bakery and grocery features sesame-crusted barbari and savory pies in a flaky crust. Their multigrain pita, pocked with seeds and with a traditional chewy texture, is unlike pita most Americans have experienced.

Dokil Korean Bakery

3844 West Lawrence 773-539-3551

Doughnut-like cream bread is permeated with silky pastry cream, with an array of flavors to choose from.

Note: There are several Guild member bakeries in the Chicago area that bake ethnic specialties. Please be sure to consult the membership directory on the Guild website, www.bbga.org, before setting out on your tour.

Poppy Seed Walnut Torte { Makowo Orzechowy Torte }

By DOBRA BIELINSKI Owner, Delightful Pastries, Chicago, IL

PREPARATION

- Cook the poppy seeds in water till soft. Drain and process in a grinder or Robot Coupe. Measure out 3 kg for use in the torte.

MIXING

- Whip the egg yolks, eggs, and powdered sugar to the ribbon stage.
- Fold in everything else, except the egg whites, syrup, and vodka.
- In a separate bowl, whip egg whites to soft peak stage.
- Fold into the poppy seed mixture in three stages. Line two full sheet pans with parchment paper and evenly divide batter into pans.

BAKING

- Bake at 350°F for 60 minutes. (The baking time is lengthy due to the moisture from the poppy seeds.)

FINAL PREPARATION

- Dust the sheet cakes with some crumbs to keep them from sticking and flip over onto cardboard sheet boards. Peel parchment papers away from the cakes. Make sure that you can slide them off the boards easily to construct the cake.
- Combine syrup with vodka. Soak the poppy seed layers. Put one layer soaked side up on a plastic sheet pan.

FROSTING AND ASSEMBLY

- Make coffee buttercream frosting and flavor with more vodka – it has to be

- fairly strong to stand up to the poppy seed. You have to judge how much frosting depending on your clientele. I would have about ½ inch of filling in the middle and ½ inch on top.
- Put half of the buttercream on one layer of the torte. Top with the remaining layer, soaked side up. Cover with remaining buttercream. Decorate as desired.

REFRIGERATION & SERVING

- Let the cake sit in the refrigerator for at least two days; four is better as the cake absorbs everything and mellows out.
- Cut the cake into 8-inch squares or bars for a classic European presentation. ☀

AMERICAN BAKING IN THE HEARTLAND

By Nancy Carey

Guild Member and Baking and Culinary Instructor,
College of Dupage, Glen Ellyn, IL

As a born and raised Chicagoan and baker, I consider it a privilege and joy to be able to participate in a Midwest regional baking class taught by our own profoundly talented Jory Downer. “American Baking in the Heartland” was the third class of 14 in The Guild’s Breadville USA series, when 16 students and five assistants gathered together in a bakeshop at Kendall College in Chicago. Attendees came from all over the country: Washington, D.C., upstate New York, San Francisco, Washington state and Michigan. The motives of the students were many: to learn to make pretzels and products remembered from childhood, to complement current product line, to expand baking knowledge and skills, and to bake more products from the Midwest.

Jory, the consummate educator and friend of all bakers, began the weekend with an introduction and the history of his bakery, Bennison’s. It gave us a point of reference for the evolution of products and baking culture in the Midwest. The items he chose to cover during this class were Strudel, Kolachky, Bienenstich, Paczki, Brown Bag Apple Pie, and Pretzels.

Pretzels, with their ever-increasing cachet and market presence, were a much-anticipated product for all the students. Jory began the pretzel demo with a discussion of ingredients that are associated specifically with pretzels. The first ingredient of discussion was lye, also known as sodium hydroxide or corrosive alkaline. Lye serves a very specific function in the production of pretzels; it is what gives them their distinctive crunch, light nuttiness and mahogany color. As Jory explained, lye provides the alkalinity which increases the Maillard reaction. He uses a lye solution of 100 oz of water to 4 oz of lye. After the dough is mixed, shaped and retarded, the raw pretzels are dipped in the solution for about 30 seconds.

A controversial but frequently used ingredient in Germany is S500. This ingredient, because of its frequency of use, needed some explaining. S500 is a dough enhancer, a no time dough conditioner that essentially decreases the presence of gas in the structure and allows for quick scaling and benching of the dough. S500 is also responsible for the oven spring achieved in the bake. An alternative for

artisan bakers would be to use a high percentage of a preferment, paired with the elimination of commercial yeast. This would accomplish a similar effect in the dough, although there could be a loss in oven spring.

Pretzels are mixed using an improved mix, with attention being paid to the finished dough temperature of 76-77 degrees. Coming off the mixer, the dough should feel like a croissant dough. Once mixed, the dough is bench rested for 15 minutes. You subsequently scale the dough at 114 grams, round loosely and then immediately roll into a log about five inches long. Place the logs on an unfloured board and allow to rest another 10 minutes. When shaping on the table, wipe the flour off and if necessary use a spray bottle of water to achieve a good surface for rolling.

The final shaping begins by rolling out the log to, as Jory says, “the longest width your arms can go” and then tapering the ends. Achieving the final shape requires practice; hold both ends of the piece, and with a snap of your wrists and a twist, the dough falls into the classic pretzel shape.

PHOTOS: ERIC FULTRAN



Jory Downer mixes the lye solution for the pretzels.



Snaking out (shaping) the pretzel dough.



Jory adjusts the shape of a pretzel.



Dipping pretzels in lye solution.



Guild members at the American Baking in the Heartland class. Left: Jean Kriger of Manassas, VA. Center: Siddharth Mangalore and Belinda Brooks, chef instructors at Kendall College. Right: Bob Blaske of Bellevue, MI.

March 26-27
AMERICAN BAKING IN THE HEARTLAND

Hosted by
 Kendall College
 Chicago, IL
 Heidi Hedeker - Liaison

Instructor
 Jory Downer

This is a shaping technique that is most successful when done quickly. Place the shaped pretzels on a board, uncovered, and then retard. Eighteen to 24 hours later, dip the pretzels in the lye solution for about 30 seconds, sprinkle with pretzel salt and mark deeply.

We had the advantage and ease of using a German pretzel-dipping station that Jory acquired in Germany in 2009. It is a very clever tool because it minimizes any contact you might have with the lye and lye-dipped pretzels. You place the retarded pretzels into a perforated tray in a shallow pool of lye solution, and with a small handle, gently lower the pretzels and flip them over onto a silpain sheet. You then transfer the silpain sheet onto a

cooling screen, which has a plastic sheet underneath to protect your bench surface. The silpain sheet proved to be a solution that several of the students were seeking; pretzels sticking to the parchment paper was a shared frustration. When we baked the pretzels on the silpain, we were able to achieve both the right crust and a quick, clean release.

The pretzels were baked in a dry deck oven at 435°F. For the first six to eight minutes, they were baked on the screens and the silpain. To finish the bake, the screen was removed, and the silpain was placed directly on the deck. As the pretzels came out of the oven, they possessed the characteristic rich mahogany exterior color.

The class included an abundance of discussions about methods, ingredients, products and ease of production. It was a phenomenal experience to be in a bake-shop with so many dedicated craftspeople, all of whom possessed the common goals of increasing their skills and knowledge, paired with their willingness to share all that they have experienced and learned through their years of baking. ✨



Sprinkling salt on the pretzel.



Shawna Sloan and Lauren Peterson of Zingerman's Bakehouse in Ann Arbor, MI.



Top: Proofed pretzels
 Bottom: Loading the pretzels into the oven.

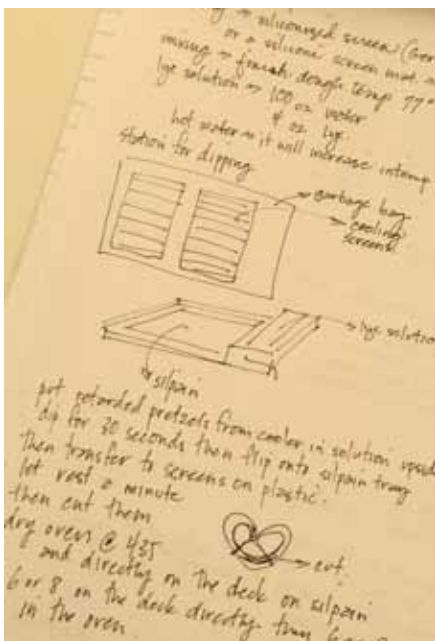


Finished pretzels, showing the characteristic deep mahogany color.

PRETZEL DOUGH with PREFERMENTED DOUGH *Contributed by Jory Downer*

Jory Downer's pretzels have the characteristic knotted shape, nutty flavor, and deep brown color of traditional German pretzels.

PHOTOS: ERIC FULTRAN



MIXING METHOD AND FINAL DOUGH

- Mix using an "Improved Mix."
- Final dough temperature: 76-77°F.
- The dough should rest on the bench for 15 minutes.

SHAPING AND PROOFING

- Scale the dough at 114g.
- Round loosely and immediately roll each piece into a log about 5 inches long.
- Place logs on floured board and allow to rest 10 minutes.
- Wipe off flour to ensure a good surface for shaping.
- Please see Nancy Carey's article, "American Baking in the Heartland," for a thorough description of the final shaping method.
- After the pretzels are shaped, place them on a board, uncovered and retard for 18-24 hours.

BAKING

- Prior to baking carefully dip the pretzels in a lye solution.
- The pretzels are baked in a dry deck oven at 435°F.
- For the first 6-8 minutes the pretzels are baked on screens.
- After this they are placed directly on the deck. ☀

PROCESS - Pretzel Dough Preferment

Mixing	Type of mixer	Spiral
First fermentation	Length of time	1 hour @ room temp, then place in cooler 12 - 36 hours
	Dough temp	76°F

Final Dough

Mixing	Type of mixer	Spiral
	Mix style	Improved
	1st speed	3 - 5 mins
	2nd speed	2 - 3 mins
	Dough temp	76°F

First fermentation	Length of time	15 mins
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Shaping	Divide	114 kg
	Preshape	5 inch log
	Resting time	10 mins
	Shape	Pretzel
	Proofing device	Wooden board

Proof & Bake	Final proof time	18 hrs @ 38°F
	Oven type	Deck
	Steam	No
	Total bake	12 - 15 mins
	Temperature	435°F

PRETZEL DOUGH WITH PREFERMENTED DOUGH

Total Dough Weight (TDW)		Total Flour Prefermented				
10.000 kg		24.50%				
Ingredients	TOTAL FORMULA %	kilograms	PREFERMENTED DOUGH %	kilograms	FINAL DOUGH Ingredients	kilograms
Total Flour	100.00%	5.947 kg	100.00%	1.457 kg	Total Flour	4.490 kg
Bread Flour*	100.00%	5.947 kg	100.00%	1.457 kg	Bread Flour	4.490 kg
Water	28.00%	1.665 kg	66.00%	0.962 kg	Water	0.704 kg
Milk	28.00%	1.665 kg			Milk	1.665 kg
Salt	2.00%	0.119 kg	2.00%	0.029 kg	Salt	0.090 kg
Yeast, fresh	0.40%	0.024 kg	1.00%	0.015 kg	Yeast	0.009 kg
Butter, unsalted	5.00%	0.297 kg			Butter, unsalted	0.297 kg
Sugar	2.00%	0.119 kg			Sugar	0.119 kg
Dough Conditioner	2.00%	0.119 kg			Baking Agent	0.119 kg
Diastatic Malt	0.50%	0.030 kg			Diastatic Malt	0.030 kg
Baking Powder	0.25%	0.015 kg			Baking Powder	0.015 kg
					Prefermented Dough	2.462 kg
Totals	168.15%	10.000 kg	169.00%	2.462 kg		10.000 kg

*Bread Flour is Hard Winter Wheat (11.7%-11.9% protein)

TOP: Pretzels produced in the Guild class, American Baking in the Heartland. BOTTOM: Students in the class took detailed notes.

PACZKI

Contributed by Jory Downer

Paczki (pronounced poonch-KEE), are fried, doughnut-like Polish pastries with sweet fillings. In Polish-American homes, they are often made on Shrove Tuesday. This was originally done to use up the sugar, fat, eggs, and fruit in the house before Lent began.



Strawberry paczki

PROCESS

- Mix all except butter and shortening, for 3 minutes in low, with hook.
- Add fats and mix until clean up.
- Ferment 1 hour, and divide into 60g pieces.
- Round, proof and fry.
- Split fried paczki in half lengthwise and fill with with desired filling, e.g. whipped cream and strawberries, chocolate mousse, custard.
- Dust with confectioner's sugar or add icing, depending upon filling. ✨

PROCESS - Paczki Dough Preferment

Mixing	Type of mixer	Spiral or vertical planetary
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First fermentation	Length of time	1 hour @ room temp, then place in cooler 12 - 36 hours
	Dough temp	76°F

Final Dough

Mixing	Type of mixer	Spiral or vertical planetary
	Mix style	Intensive

First fermentation	Length of time	1 hour
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Shaping	Divide	60g pieces
	Preshape	Round
	Resting time	None
	Shape	Round

Proof & Bake	Final proof time	1 hour
	Oven type	Fryer
	Temperature	350°F

Fillings for paczki range from the ordinary (apple) to the exotic (rosehip jam). Bennison's Bakery also fills paczki with strawberries, raspberries, prunes, chocolate mousse, custard, and sweet cheese.



Chocolate mousse paczki



Cheese paczki



Apple paczki



Apricot paczki



Custard paczki



Prune paczki

PHOTOS: COURTESY OF JORY DOWNER

PACZKI						
TOTAL FORMULA		PREFERMENTED DOUGH		FINAL DOUGH		
Ingredients	%	kilograms	%	kilograms	Ingredients	kilograms
Total Dough Weight (TDW)		19.102 kg	Total Flour Prefermented	6.40%		
Total Flour	100.00%	10.022 kg	100.00%	0.642 kg	Total Flour	9.381 kg
Bread Flour*	78.35%	7.852 kg	100.00%	0.642 kg	Bread Flour	7.211 kg
Pastry Flour	21.65%	2.170 kg			Pastry Flour	2.170 kg
Water	4.22%	0.423 kg	66.00%	0.423 kg		
Salt	1.50%	0.150 kg	2.00%	0.013 kg	Salt	0.137 kg
Yeast, fresh	5.46%	0.547 kg	1.00%	0.006 kg	Yeast	0.541 kg
Milk	46.01%	4.611 kg			Milk	4.611 kg
Sugar	10.83%	1.085 kg			Sugar	1.085 kg
Eggs	5.41%	0.542 kg			Eggs	0.542 kg
Egg Yolks	5.41%	0.542 kg			Egg Yolks	0.542 kg
Baking Powder	1.35%	0.135 kg			Baking Powder	0.135 kg
Butter	5.00%	0.501 kg			Butter	0.501 kg
Vegetable Shortening	5.41%	0.542 kg			Vegetable Shortening	0.542 kg
					Prefermented Dough	1.084 kg
Totals	190.60%	19.101 kg	169.00%	1.084 kg		19.101 kg

*Bread Flour is Hard Winter Wheat (11.7%-11.9% protein)

SOUTHWESTERN BREADS

By **JEFFREY KLOPATEK** Guild Member and Senior Scientist in Sustainability,
Arizona State University

When one mentions breads of the Southwest, visions of corn bread and chillies come to mind. However, corn bread has origins in eastern North America, and the early cowboys of the Southwest were known more for their sourdough flatbreads and pancakes. In truth, the Southwest has a long and occasionally painful baking history. Native Americans had been eating corn flatbreads for more than 3,000 years before the Spanish arrived. Their grain of choice was maize or corn, what the Zuni called Tâ'a, the "seed of seeds." It was virtually the essence of their identity. The men raised it and the women cooked it, primarily as flatbreads or tortillas, still a common practice today.

One of the most fundamental cultural clashes between Native Americans and Spaniards in the colonial period revolved around the staple grains of corn and wheat. The Spanish introduced wheat to the Native Americans, rather forcefully. Men were conscripted into both the farming of the wheat and the baking of the bread, and Mexico City market women sold wheat flour-based bread to the Spanish by 1550. The Spanish missionaries introduced wheat to the Native Americans, in what would become the United States Southwest, in the mid-1600s. Wheat harvest of up to 50,000 bushels per year was reported in the late 1700s in the San Diego area. However, flour was still produced by Native American women, who ground the dried grains by hand on their metates.

The wheat first grown in Mexico that found its way to the Southwest was a hard white wheat, now referred to as Sonora wheat. It was grown in the Southwest continuously until about 1960, and it was revived from USDA seed stock beginning in the 1990s by Monica Spiller of the Whole Grain Connection. (Currently, in Arizona the principal wheat crop is durum, primarily for pasta mills.)

I was able to acquire some of the flour from Monica (www.sustainablegrains.org) and try it out. It is easy to see why this was used extensively for flatbreads, as its dough is extremely extensible and not very elastic. Stone ground by Giusto's Mill of San Francisco, it runs between 12 and 13% protein, and as a whole wheat flour has an ash content of 1.7%. Baked goods have a pleasing light lemon yellow color when finished. I have been successful using it for English muffins. They have a nice cell structure with 30% of the flour coming from a bread flour levain.

Similar to many other peoples of the world, Native American cultures such as the Hohokam, now vanished, prepared much of their food in family or communal roasting pits or hornos (Spanish for ovens). They used then, as they do today, seeds from flowering plants (chia, amaranth, sunflowers, piñon "nuts," pumpkin seeds, etc.) or grains that were naturally available. Some of these seeds and grains were pounded into flours to produce flatbreads.

A native product that is still in use today is mesquite flour. Mesquite trees are members of the legume family, and their beans and pods are dried and ground up to make a high protein mesquite "flour." Early explorers wrote about how the Indians of New Mexico and Arizona made a bread of the ground-up mesquite pods. It has a distinctive sweet, slightly nutty flavor. Today, artisan breads use only about 10% of mesquite flour by weight, because of its strong flavor. The flour has occasionally gone by the name of "pinole." Pinole is actually a meal made of ground corn or wheat and mesquite bean, sugar (honey), and spices. Often this was rolled into a ball and used as "energy food."

The pueblo-dwelling Native Americans eventually took wheat flour and baked bread into their culture, and it is now a mainstay in their diets, although



PHOTOS: ANNETTE BROWN



Hornos on the Santa Ana Pueblo Ranchito, New Mexico

the taste of corn flour was and is still preferred by many. Baking is often done in communal beehive ovens or hornos (photos above). Recipes for the use of wheat flour are often approximate. For example, a recipe for pueblo or adobe bread (Söhövösvölaviki) taken from the Hopi Recipe CD is as follows:

- Fill a small saucepan half full of warm water and dissolve 6 packages of active dry yeast in it. Set aside.
- Meanwhile, empty $\frac{3}{4}$ of a 25 lb. bag of flour into a washtub; add salt to taste, and mix well with hands. Now add the yeast and enough additional warm water to make stiff dough. (Test water on your wrist to make sure it is lukewarm.) Work dough with your hands until all lumps are dissolved. Cover and set aside in a warm place to rise. Punch down with hands and knead until elastic. Form dough into loaves, let rise again and bake.

The pueblo women measure the temperature in the horno by throwing a corn husk into it. If it blackens, the temperature is too hot, probably over 400°F. If it browns and holds some color, it's 350°F.

The recipe made about 25 one-pound rounded loaves or coronas of six individual balls of dough. The Hopi women who own beehive-type ovens large enough to bake this quantity shared this convenience with relatives and friends in exchange for one or two loaves of the bread.

Some pueblo women made their own leaveners by cooking cornmeal, potatoes, and sugar together to make a stiff dough.

SONORA WHOLE WHITE WHEAT ENGLISH MUFFINS

PHOTO: JEFFREY KLOPATEK



Contributed by
JEFFREY KLOPATEK

MIXING METHOD

FINAL DOUGH

- : Mix Levain, water and Sonora flour for 2 minutes.
- : Autolyse for 30 minutes.
- : Add remaining ingredients and mix.

SHAPING AND PROOFING

- : After fermentation and dough doubles in size, stretch out dough on bench to 3/4" thickness.
- : Using a well-floured 3 1/2 inch circular cutter, cut out muffins.
- : Dip both sides of each piece in a tray of corn meal.

BAKING

- : Place pieces on a 325°F griddle. Grill for 4-5 minutes per side.
- : Finish in a 350°F oven for 10-12 minutes.
- : Cool on rack. ☀

PROCESS – Sonora Whole White Wheat English Muffins

Preferment – Liquid Levain

Mixing	Type of mixer	By hand or mixer
First fermentation	Length of time	12-15 hours
	Temperature	74°F

Final Dough

Mixing	Type of mixer	Spiral
	Mix style	Improved
	1st speed	2 mins
	Autolyse	30 mins
	1st speed	5 mins
	2nd speed	2 mins
	Dough temp	78°F

Bulk fermentation	Length of time	1 hr 30 mins
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SONORA WHOLE WHITE WHEAT ENGLISH MUFFINS

Total Dough Weight (TDW)		1.913 kg		Total Flour Prefermented		30.00%	
Ingredients	TOTAL FORMULA %	kilograms	LEVAIN %	kilograms	FINAL DOUGH Ingredients	kilograms	
Total Flour	100.00%	1.000 kg	100.00%	0.300 kg	Total Flour	0.700 kg	
Bread Flour*	30.00%	0.300 kg	100.00%	0.300 kg			
Sonora Whole White Wheat Flour	70.00%	0.700 kg			Sonora Flour	0.700 kg	
Water	75.00%	0.750 kg	100.00%	0.300 kg	Water	0.450 kg	
Salt	1.80%	0.018 kg			Salt	0.018 kg	
Non-Fat Dry Milk Solids	2.50%	0.025 kg			Non-Fat Dry Milk Solids	0.025 kg	
Honey	2.00%	0.020 kg			Honey	0.020 kg	
Butter, soft	2.50%	0.025 kg			Butter, soft	0.025 kg	
Sour Mother	7.50%	0.075 kg	25.00%	0.075 kg	Levain	0.674 kg	
Totals	19 1.30%	1.913 kg	225.00%	0.675 kg		1.912 kg	

*Bread Flour is Hard Winter Wheat (11.7%-11.9% protein)

They then pressed it and cut it into two-inch squares that were dried and stored. One square provided enough leavening for four loaves of bread. They also used pâte fermentée that was rolled thin and dried. The dried leftovers were ground, soaked in water and added to make the new dough.

Discussion of Southwestern baking always comes back to corn and chillies. Barbara Fenzyl, the noted Southwestern cookbook author and regional cooking maven, stresses the use of native and locally grown chillies and corn in recipes. Guild member Jeff Yankellow, in his recent Guild class, “Artisan Breads:

Flavors of the Southwest,” stated that “corn and chillies work so well together in breads.” The native use of corn in breads is often accompanied by the use of culinary ashes. Culinary ashes use is widespread throughout Arizona and New Mexico, and sources vary from tribe to tribe. The Hopi use the ash of four-wing saltbush (chamisa), while Navajos use the ash of juniper branches. The chamisa has a high nutritional value and is added to water to make an ash broth that is strained and then added to blue corn meal. It also unbinds the niacin in the corn so it provides a more complete protein. Its high alkalinity acts to enhance the blue color. One of the

corn breads made with ashes is piki bread, a delicacy of pueblo dwellers that is a paper-thin cracker bread, often rolled. It is made from ash water and cornmeal (often blue corn) on a glass-smooth piki stone over an open fire. Bone marrow fat or deer brain fat are used to lubricate the stone. (I guess for vegetarians, some other lubricant would be needed.) The crepe-like dough is spread with the hand onto the hot stone until done.

The recent artisan revival has brought in a melding of Native American influences into the bread world: green chili-jack cheese potato bread, buttermilk cornmeal

Continued on page 26

ARTISAN BREADS: FLAVORS OF THE SOUTHWEST

By Zach Langenkamp

Guild Member and Director of Product Development, Blue Baker

As a native Texan and a Bread Bakers Guild of America member, I was seriously excited when I heard that we were having the first-ever Guild class in Texas, taught by none other than Jeff Yankellow. I'm fortunate enough to have taken several classes from Jeff when he was instructing at the San Francisco Baking Institute; the chance to take another class from him, inspired by new, bold flavors from the Southwest, was too good to pass up. The one day, nine hour class was hosted by the newly opened third campus of the Culinary Institute of America located in San Antonio, Texas. The campus is set among restored buildings of what used to be the Pearl Brewery near downtown San Antonio, and the CIA graciously hosted the class in their brand-new facilities, which was a real treat.

Jeff spent a few minutes at the beginning of the day to explain his vision for the class. He had moved to Arizona over five years ago to open an artisan bakery and was introduced to many ingredients exclusive to the cuisine of the Southwest region, some of which we used in the class to create very interesting, unique flavor profiles. In fact, all the breads we ended up making that day were original recipes Jeff created specifically for the class, and he crafted them in order to showcase not only different flavors but different techniques used in traditional artisan bread baking.

The Southwest Corn and Chili Fougasse incorporated a sponge, along with sweet corn kernels and chopped jalapeño and fresno chilies, and was actually finished in a lye bath for a traditional pretzel finish.

The mild heat from the chilies contrasted perfectly with the sweetness of the fresh corn, and the crust made from baking

after the lye bath was incomparably delicious. The New Mexico Green Chili and Jack batards used a liquid levain, baked potatoes, roasted green chilies (or hatch chilies), roasted garlic, and Monterey jack cheese to pack a serious flavor punch. The potatoes added an incredible soft, moist texture to the final product. Jeff used his Chipotle Garlic Ciabatta not only to highlight the flavors of roasted garlic and chipotle pepper, but also to demonstrate the technique to make a traditional Ciabatta. He explained that for reasons still not completely understood, garlic has a tendency to break down the gluten structure in bread – generally it's safe to use it in amounts of up to 10% in the total formula. To combat this effect, he used a small amount of liquid levain as well as the more traditional poolish to reinforce the strength of the bread.

These three breads all used very interesting ingredients to create great flavor combinations, but the most interesting regional, unique ingredient

had to be the mesquite flour used in the Pecan Mesquite Filones. Mesquite flour (actually more of a meal in texture) is made from grinding the dried seed pods of the mesquite tree which thrives

LEFT: Some of the vibrant ingredients used in the breads that day (jalapeño and fresno chilies, fresh sweet corn)
RIGHT: Closeup of the pecan mesquite filones



TOP LEFT: The breads ready to eat at the end of the day (front to back: Pecan Mesquite Filone, New Mexico Chili and Jack batard, Southwest Corn and Chili fougasse)
BOTTOM LEFT: Jeff Yankellow demonstrates a proper fold during bulk fermentation
RIGHT: Jeff Yankellow demonstrates the do's and don'ts of using a lye bath.

March 19

**ARTISAN BREADS:
FLAVORS OF THE
SOUTHWEST**

Hosted by

The Culinary Institute
of America, San Antonio
San Antonio, TX
Alain Dubernard - Liaison

Instructor

Jeff Yankellow



throughout the Southwest. This flour was an important part of the diet of native North American Indians for centuries, and lends a completely unique flavor and aroma. It also has a very low glycemic index, making it wonderful for diabetics, and is high in protein and low in fat. Jeff fermented all the mesquite flour in the bread in a poolish to bring out the full range of aromas - when I smelled the fully fermented poolish, I was amazed at the rich mix of spices: cocoa, cinnamon, and its own, indescribably exotic scent. The recipe paired this flour with candied orange and roasted pecans, ingredients also found commonly in the Southwest. Because mesquite flour detracts from the overall strength of the final dough,

we added a liquid levain to the mix and incorporated one fold during the bulk fermentation.

It had been a good five years since I had taken a class from Jeff, but I was quickly reminded why he is so well-regarded as a teacher; Jeff possesses that rare ability not only to excel as a master of his craft, but also to convey his considerable knowledge and skill to others in a way that is totally accessible and easy to understand. The flyer for the class labeled the skill level as "intermediate," but the makeup of the class varied from enthusiastic home bakers to veteran professional

bakers, and Jeff smoothly switched gears between explaining the basics of traditional pre-ferments and discussing the subtle nuances of using different levels of levain to influence final dough characteristics. I'm sure that no matter what their skill level, all the students that day walked away with a new appreciation for pairing unusual regional ingredients with traditional artisan techniques to create delicious new breads. ☀

Formula on next page



ABOVE: Abby Thomas practices scoring while Christine Goldsmith looks on TOP RIGHT: Jeff Yankellow answers a question for George Blanford while Phyllis Enloe looks on BOTTOM RIGHT: Pecan Mesquite Bread uses a mesquite poolish and liquid levain, and contains pecan pieces and candied orange peel

PHOTO: PHYLLIS ENLOE

PECAN MESQUITE *Contributed by Jeff Yankellow*

PROCESS – Pecan Mesquite

Preferments – Liquid Levain and Mesquite Poolish

Mixing **Type of mixer** hand or mixer

First fermentation **Length of time** 12-15 hours
 Temperature 74°F

Final Dough

Mixing **Type of mixer** Spiral
 Mix style Improved
 1st speed 2 mins
 Autolyse 20 mins
 1st speed 5 mins
 2nd speed 3 mins
 Dough temp 75°F

First fermentation **Length of time** 2 hours
 Number of folds 1
 Timing for folds At 1 hour

Shaping **Divide** .750 kg
 Preshape Cylinder
 Resting time 20 mins
 Shape Filone
 Proofing device Floured linen - seam up

Proof & Bake **Final proof time** 1.5-2 hours
 Oven type Deck
 Steam Yes
 Total bake 25-30 mins
 Temperature 480°F

This bread showcases three ingredients that grow very close to each other in the Southwest: oranges, pecans, and mesquite. Mesquite meal was an important food source to the Native Americans in the Southwest and offers a sweet, smoky flavor with hints of cinnamon and chocolate.

POOLISH & LEVAIN

- Place all dry ingredients and starters in bowl.
- Adjust the water temperature for a final temperature of 74°F.
- Mix until well incorporated and smooth.
- Cover and ferment at 75°F for approximately 12-15 hours.

FINAL DOUGH

- In the bowl of a spiral or vertical planetary mixer with hook attachment, place the poolish, levain and bread flour.
- Adjust the water temperature for a final dough temperature of 73°-75°F. Add the water and mix for 2 minutes to incorporate and hydrate the ingredients.
- Allow the dough to rest for 20 minutes for an autolyse.
- Add the yeast and salt. Mix on speed 1 to incorporate the ingredients.
- Mix in speed 2 to develop the dough to



PHOTO: ZACH LANGENKAMP

a medium stage or improved mix. The dough should be soft as the pecans will absorb moisture.

- Let the dough ferment in a covered container at 73°-75°F.
- Give 1 fold at 1 hour.
- After 2 hours total, divide the dough into 750g pieces. Pre-shape as cylinders, cover and rest for 20 minutes.

SHAPING & PROOFING

- Shape as filone or short baguettes with pointed ends. Place on linen that has been dusted with flour, seam up.
- Proof at 75°F for about 90 minutes.

BAKING

- Transfer loaves to loader or peel.
- Score with one cut or with 3 cuts in the style of a baguette and bake at 480°F with steam for approximately 25-30 minutes. ✨

PECAN MESQUITE

Ingredients	TOTAL FORMULA		LIQUID LEVAIN		MESQUITE POOLISH		FINAL DOUGH	
	%	kilograms	%	kilograms	%	kilograms	Ingredients	kilograms
Total Flour	100.00%	4.809 kg	100.00%	0.721 kg	100.00%	0.827 kg	Total Flour	3.261 kg
Bread Flour	92.00%	4.424 kg	100.00%	0.721 kg	53.49%	0.442 kg	Bread Flour	3.261 kg
Mesquite Flour	8.00%	0.385 kg			46.51%	0.385 kg		
Water	71.00%	3.414 kg	100.00%	0.721 kg	100.00%	0.827 kg	Water	1.866 kg
Salt	2.00%	0.096 kg					Salt	0.096 kg
Instant Yeast	0.20%	0.010 kg			0.10%	0.001 kg	Instant Yeast	0.009 kg
Pecan Pieces, toasted	25.00%	1.202 kg					Pecan Pieces, toasted	1.202 kg
Candied Orange, diced	6.00%	0.289 kg					Candied Orange, diced	0.289 kg
Sour Seed	3.75%	0.180 kg	25.00%	0.180				
							Liquid Levain	1.623 kg
							Mesquite Poolish	1.655 kg
Totals	207.95%	10.000 kg	225.00%	1.622 kg	200.10%	1.655 kg		10.000 kg

*Bread Flour is Hard Winter Wheat (11.7%-11.9% protein)



Mixing and Techniques – Part I

By Didier Rosada

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Many bakers consider mixing the most important step in baking. As seen before in a precedent article (Newsletter Volume 6 Issue 3), all steps of the baking process are connected and all of them are important. However, knowing that mixing is the first mandatory step to produce bread, a lot of attention must be given to this stage of the baking process.

Numerous functional and crucial dough characteristics, such as consistency, gluten development, and dough temperature will be determined during mixing. The goal of this two-part article will be to present in a very detailed way what is really happening when we mix dough. More precisely, the following topics will be covered:

- Steps to follow in order to successfully mix a dough to the dough-
- What is happening during the mixing of the dough
- Precautions to take when mixing extra ingredients into the dough
- Different mixing techniques -and their applications
- How to determine mixing time
- Factors affecting mixing time
- What technique to choose in a production environment

STEPS TO FOLLOW IN ORDER TO SUCCESSFULLY MIX A DOUGH

Mixing is a procedure that could be divided in four important steps. If all those steps are carefully achieved, the result will be properly mixed dough and a very consistent final product.

① Preparation before mixing

This first step might sound very simple, but it is definitely an important one. Before mixing, it is important to scale all the

ingredients precisely. I know that sometimes baking is not considered a very precise science, unfortunately, but having all the ingredients scaled properly will insure a well-balanced formula and at the same time a very consistent end product.

The second important thing is to calculate the water temperature. As seen in the preceding article by Marsha de Angelis (*Bread Lines* Volume 10 Issue 1), water temperature will depend on a lot of factors including temperature of the bakery, temperature of the preferment, mixing time, etc. Taking all of these variables into consideration, the baker must define the adequate water temperature to use in order to get the desired dough temperature at the end of the mixing. This desired dough temperature could be different depending on the type of bread produced. In general, it is between 73°F and 78°F. Next, and once again this might seem very logical, it is necessary to make sure that the mixer bowl and hook are clean. It only takes a few seconds to clean scraps of dried dough still stuck to the bowl. If they are left there, they might not dissolve properly into the next dough and will be found, hard as a rock, in the final product to the probable disappointment of the customer.

The last thing is to try to put the flour first in the bowl and then add the other liquids and water. The idea is to avoid changing the weight of the flour. In general, formulas are designed using baker's percent where all the ingredients are based on the total weight of the flour. For example, if the water is added first, then the flour, and the baker realizes that the dough is too soft, more flour will have

to be added. But, all the other ingredients were calculated on the original weight of the flour, not including the added flour. The result will be an imbalance in the formula if the quantity of added flour is fairly large.

A special note related to dough mixed in vertical mixer or mixer without a bowl-reverse option: if flour is placed first in the bowl, it might be possible that some of it will get stuck in the bottom without being incorporated into the dough. One way to prevent this problem is to add half of the water first, then all of the flour and the rest of the water, until the dough consistency is achieved.

② Ingredient Incorporation

When the ingredients are scaled and water temperature determined, flour and water are placed in the bowl. The mixer is then turned on in first speed. During the next three to four minutes flour and water will be combined together by the mechanical action of the mixer's dough hook. During this time, the baker must watch the consistency of the dough carefully. If more water is needed, this is the best time to add it to the dough.

If preferments are used, they should be incorporated into the dough at this stage. Depending on the type of preferment (high or low hydration), the consistency of the dough might be changed, and some water adjustments might be necessary.

When the consistency is achieved, two options are possible. One is to continue mixing and incorporate the other ingredients of the dough like yeast and then salt, or the baker "autolyses" the dough.

Continued on next page

Mixing and Techniques – Part I

Continued from previous page

The autolyse is a process, developed by Professor Raymond Calvel, when the flour and water are allowed to rest for a minimum of fifteen to twenty minutes. During this time two important reactions will happen in the dough. The first one is a better hydration of the proteins of the flour, leading to a better gluten quality. The second one is a natural action of the protease, an enzyme naturally present in the flour. When allowed enough time to work, the proteases of the flour will react on the protein and degrade some of the gluten bonds. As a result, the dough will become more extensible and its machinability will be improved.

No salt is used in the autolyse. Its natural action of slowing down the chemical reaction would also slow down the action of the proteases of the flour.

No yeast is added at this time. Yeast generates fermentation, fermentation generates acidity and acidity increases the strength of the dough.

And, in general, autolyse is done to increase dough extensibility, therefore decreasing the strength of the dough.

After the autolyse, yeast and salt are added to the dough.

Notes:

When using Dried Instant Yeast, it is better to incorporate the yeast with the flour for one minute at the beginning of the mixing time. Because of their low water content, cells of Dried Instant Yeast will need more time to re-hydrate. A late incorporation could result in yeast not completely dissolved into the dough and a fermentation activity affected.

The same principle could be applied for an autolyse. Because mixing time is reduced when an autolyse is done, it is better to incorporate the Dry Instant Yeast just before the autolyse. The time they will get dissolve into the dough, the autolyse time will be almost over and the fermentation of the dough still minimum.

When using liquid preferments like poolish or liquid levain, their incorporation must happen at the beginning of the mixing process, even if an autolyse is done. Their low yeast content won't really affect the strength of the dough. Stiffer preferment with more yeast, like pre-fermented dough, should be incorporated after the autolyse time.

Technically speaking, when no autolyse is made, flour, water, yeast and salt could be incorporated at the beginning of the mixing. Despite the common belief that salt will kill the yeast, no change would happen in the dough or bread characteristics. The salt and yeast will be in contact in the dough for the next 4 to 6 hours after mixing, so if something would happen, it would have plenty of time to happen.

However, in order to have better control over the ingredient incorporation and to make sure that no ingredients have been forgotten, it is better to follow a standard procedure in regards to the addition of ingredients into the dough. For example, if the baker always adds yeast, then the salt, before going into second speed, there is less chance of error or better odds of noticing a mistake.

③ *Dough development*

When all the ingredients are well incorporated and the dough consistency has been achieved, the baker will go to the next step: dough development.

This step, depending on the desired dough development, could be done in first speed or second speed.

The mixing time depends on the desired gluten development. A long mixing time in second speed is used for well-developed dough, and a short mixing time in first speed is used for under-developed dough. More precise guidelines will be presented later in the article.

The gluten structure development depends also on the characteristics that we are looking for in the final product. This will also be discussed later.

④ *After mixing*

Because fermentation activity is dependent on the temperature of the dough, it is important for the baker to check if the desired dough temperature

has been obtained or not. If the temperature is good, then the baker can follow his regular baking process. If the temperature of the dough is too cold or too warm, the first fermentation time will need to be adjusted: longer for cooler dough temperature, shorter for warmer dough temperature. The difference in temperature would have to be taken into consideration for troubleshooting the next batch of dough (increase or decrease of the water temperature).

A common mistake in many bakeries is to continue mixing if the temperature of the dough is too cold. For sure this process will warm up the dough due to the extra friction, but this extra mixing time will also continue to develop the gluten of the dough. As an end result we might get the desired dough temperature, but the dough is likely to be over-developed. So, adjusting the first fermentation time is a much safer and advised procedure.

Good precision and some attention during all of these steps should lead to the dough being properly mixed. Let's discuss now what is technically happening during the formation of the dough.

Two main types of changes are happening during the mixing of the dough: the physical changes and the chemical changes.

PHYSICAL CHANGES HAPPENING DURING FORMATION OF THE DOUGH

As soon as flour and water are in contact, the water will hydrate the flour components. The two main components of the flour are the starch and the protein.

Two main types of starch are found in the flour, the native starch and the damaged starch. The native starch absorbs water on the outside of the particle only, damaged starch absorbs close to its own weight in water.

Both starches will play the role of filling agent in a dough system.

Proteins, depending on their quality can absorb 200% to 250% of their weight in water. These proteins will inflate, and when inflated will have the natural property of being attracted to each other and will form chains of proteins called the gluten of the dough.

Once the gluten has been formed, the mechanical movement of the dough hook will work the gluten into an organized structure. If one looks carefully at the mixer's hook working in dough, two distinct movements can be observed. The first part of the movement stretches the chains of gluten and the second part folds the chains of gluten over onto themselves.

After a period of mixing, the chains of gluten become longer and longer, finer and finer, and more and more overlapped. This creates the three-dimensional gluten structure of the dough.

A long mix will generate a gluten structure that is well developed, and a shorter mix will generate a gluten structure that is under-developed. A mixing time that is too long will stretch the gluten chains to the point where they will break. This is what we call over-mixing the dough.

Due to the overlapping and better organization of the gluten chains, the structure of the gluten will get stronger. A noticeable change in the rheology of the dough can be observed. The dough is becoming less extensible, more elastic and able to trap gas. Visco-elastic properties are developed, or more simply the dough increases in strength and gas retention.

Note related to mixing time in first speed
Starch will absorb water faster than protein. Protein hydration is a little slower. To insure a good gluten quality, it is necessary to mix in first speed for at least five or even six minutes for a larger batch. If we switch the mixer too early to second speed, we might start to organize gluten that is barely created and therefore penalize the gluten development of the dough.

CHEMICAL CHANGES HAPPENING DURING FORMATION OF THE DOUGH

When water is introduced in the mix, it will start all the chemical reactions naturally happening in a dough system. The two main ones are fermentation activity and enzyme activity. It is interesting to know for the baker, that depending on the quantity of water, the rate of these reactions will be affected. For example, wet dough will generate faster fermentation activity, and, in order to be

able to keep a good control on his process, the baker will have to reduce the level of yeast in the formula.

Another important chemical change happening during mixing time is the oxidation of the dough. This reaction is due to the air naturally incorporated in the dough during mixing. The air contains oxygen, which will have some effects in the dough.

To a certain point, the effect of the oxygen will be positive. The oxygen will chemically react with the molecules of protein to form better gluten bounds. This will naturally reinforce the gluten structure and the tolerance of the dough.

Too much oxygen (long mixing time), will negatively affect some flour components called carotenoid pigments. The pigments are natural components of the kernel of wheat and are responsible for the creamy color of the flour and some aroma production. Too much oxygen will deteriorate these pigments and automatically lead to a final product with a white crumb color and a bland flavor.

Despite the negative effect of too much oxygen, some air is still necessary. During mixing, micro cells of air will be introduced into the dough system. These micro cells will play an important role in the baking process by forming the core of the crumb structure during fermentation, the gas produced by the yeast will accumulate in these micro cells and form the "alveoles" of the crumb.

Note related to the oxidation

To slow down the negative effect of the oxidation, one specific property of the salt can be used. Salt has a natural property of slowing down all the chemical reactions (this is why we used to use it to increase the shelf life of foods - cured meats or salted fish). By incorporating the salt into the dough at the beginning of the mixing time (while the mixer is still in first speed), the oxidation process will naturally, be slowed down.

On the other hand, if the baker wants to achieve a very white crumb structure, the incorporation of the salt must be delayed. As a side effect, flavor will also be penalized.

INCORPORATION OF OTHER INGREDIENTS INTO A DOUGH SYSTEM

It will be difficult to discuss every ingredient that is added to the dough in every bakery, but some observations about the main ones could be helpful.

① *Incorporation of fat*

A smaller percentage (2 to 4%) of solid fat, like butter or margarine, could be incorporated at the beginning of the mixing time with flour and water.

A larger percentage (5 to 15%) of solid fat should be incorporated when the dough is at 50% of development (in general in the middle of the second speed time). An earlier incorporation (at the beginning of the mixing time) would delay the development of the gluten and increases the mixing time. The fat would "lubricate" the chains of proteins, delaying the bounding of the gluten.

More than 15% solid fat should be incorporated when the gluten is almost fully developed. This will insure a strong dough structure able to support this massive incorporation of fat.

Liquid fats, like oil, are in general part of the hydration of the flour and should be incorporated into the dough at the beginning of the mixing time. If a large quantity of oil is used, it is also possible to incorporate it after the full gluten development (very slowly in first speed).

② *Incorporation of sugar*

A small amount of sugar (up to 12%) can be incorporated into the dough at the beginning of the mixing time.

Higher levels should be incorporated in several steps. Sugar being a hygroscopic ingredient, it will have the tendency to absorb a lot of water. If too much sugar is introduced to the dough at once, it might take some water away from the protein, disorganizing the whole gluten structure.

When levels of sugar are very high (20 to 30%), some bakers use the same technique as for high level of butter: sugar is left out of the dough and incorporated when the gluten is well developed.

Continued on next page

Remembering Bernard Clayton

By **ABE FABER** *Guild Board Member and
Co-Owner of Clear Flour Bread, Brookline, MA*

Bernard Clayton, Jr., passed away on March 28, 2011, in Bloomington, Indiana, at the age of 94. He had an illustrious career as a newspaper reporter and editor, but we at The Bread Bakers Guild of America remember him as an inspirational baker and groundbreaking author.

I have great memories of meeting Bernard at a special Guild dinner in 2001, when The Guild honored him for his contributions to baking education. At that event, I had the privilege of introducing him and presenting him with a Bread Bakers Guild ceramic miche.

At our bakery, the recipes and wonderful stories of small town French bakers in his book, *The Breads of France*, were momentous back in the days before resources that we now take for granted, such as The Guild, the San Francisco Baking Institute, the King Arthur Baking Education Center, or books on baking in English. That single book published in 1978, the result of Bernard's 7,000 mile research trip to the small town bakeries of France, was our original inspiration.

The final paragraph of my introduction of him at the time was:

"It is nice today to feel that many of us here in this room are coming into our own, engaging the craft of artisan baking in a way that is becoming uniquely 'American,' but I am very mindful of the enormous debt we owe to this [here I held up his book, *Breads of France* early research and communication of the techniques on which so many of us now base our daily work. Bernard Clayton has had a strong presence in my bakery for 20 years, through his clear and often inspiring stories, recipes and descriptions of technique. For many years this was the single 'textbook' which we issued to new bakers in an effort to bring them up to speed on the look and feel of the wonderful world of baking which they were about to enter. When I asked my wife, Christy, what to say in introducing Mr. Clayton, she said: "Please make sure to thank him. It is because of him that I'm a baker today." So, it is with particular pleasure that I now have the privilege of being able to thank Mr. Clayton in person, as I introduce him to you as The Bread Bakers Guild of America's guest of honor."

Now, 10 years later, I want to thank Bernard again; to offer a collective thank you on behalf of our entire artisan baking community for the enormous work and spirit and generosity of this man who did so much to document and pass

on the skills and knowledge of traditional breads and pastry from around the world. ✨

Abe Faber presents a ceramic miche to Bernard Clayton, Jr., at a Guild benefit dinner in Indianapolis, Indiana, in 2001. The event was called "Celebrating American Bread Traditions: A Culinary Salute to Bernard Clayton, Jr., and His Contributions to the Advancement of Bread Baking in America."



Mixing and Techniques—Part I

Continued from previous page

③ *Incorporation of eggs*

Eggs should be incorporated at the beginning of the mixing, as they will play a major role in the hydration of the flour. It is recommended, even though some formulas call for only eggs to hydrate the flour, to always add some water. Eggs don't have the same flour hydration characteristics compared to water. To insure a good gluten quality, at least 10% of water (in addition to the eggs) is necessary. The final product will have a lighter and moister crumb texture.

④ *Incorporation of dry ingredients*

Ingredients like malt or milk powder can be incorporated at the beginning of the mixing time with flour and water.

Incorporation of solid ingredients like nuts, dry fruits, chocolate chips... Any chunky ingredients that won't dissolve into the dough must be incorporated at the end of the mixing time. Once the gluten has been properly developed, the mixer is turned back in first speed and the ingredients are added to the dough. The dough is mixed until the ingredients are well distributed into the dough.

This gentle incorporation will have two positive effects for the dough and the bread. First, the ingredients will stay intact into the dough (the action of the hook in first speed in very gentle and won't crush the added ingredients). Then, incorporating those ingredients in a gentle way will reduce damage to the gluten structure. If second speed was used, the ingredients would react - like razor blades into the dough and cut all the gluten bonds that were formed during the mixing.

This was a general description of the mixing process. The next step is to understand how a thorough knowledge of mixing can be used. We will address this topic in the next issue. ✨



EDITOR'S NOTE

A HANDFUL OF GUILD MEMBERS NOTED THAT JOE ORTIZ' ARTICLE IN ISSUE OF 19.1, "LOCAL GRAIN, WHOLE GRAIN MILLING" APPEARED UNDER THE HEADING OF "TECHNICAL ARTICLE" YET THEY FELT THAT THE ARTICLE DID NOT ADDRESS THE SUBJECT IN A TECHNICAL MANNER. IN FACT, THEY WERE CORRECT. THE ORTIZ ARTICLE SHOULD HAVE APPEARED UNDER THE HEADING "REGIONAL BAKING," THE FIRST ARTICLE IN OUR REGIONAL BAKING SERIES THAT WILL CONTINUE THROUGHOUT THE YEAR. WE ARE SORRY IF THIS CAUSED ANY CONFUSION. IN ADDITION, TWO GUILD MEMBERS, UPON READING THE ARTICLE, FELT THAT SOME FURTHER CLARIFICATION WAS NEEDED REGARDING A NUMBER OF POINTS RAISED IN THE ARTICLE. THEIR RESPONSE TO THE ARTICLE IS EXCERPTED BELOW.

Defining Whole Wheat Flour

By THOM LEONARD & RANDY GEORGE

In the March issue of *Bread Lines*, the article entitled "Local Grain, Whole Grain Milling" by Joe Ortiz, some statements were made about "commercial-milled whole wheat flour" that we feel need to be clarified. The Community Grains website quotes the FDA definition of whole grains: "Cereal grains that consist of the intact, ground, cracked or flaked caryopsis, whose principal anatomical components - the starchy endosperm, germ and bran - are present in the same relative proportions as they exist in the intact caryopsis..."

Yet Joe Vanderliet of Certified Foods is quoted in the article as saying that the germ and aleurone layer are not present in industrial whole wheat flour and that only "some of the bran is blended back into the white milled flour." We assume that it was flour of this type that Craig Ponsford had tried in the past which led him to the conclusion that "commercial milled whole wheat flour tastes dead." We have heard the same thing over the years about the germ being removed from flour that is sold as "whole wheat," but given that the FDA requires that "whole wheat flour" contains all constituents of the whole wheat kernel in the same proportions as they naturally occur, we contacted Gen-

eral Mills about how they mill their whole wheat. Our contact confirmed that they produce whole wheat flour on the same roller mills that they use to make white flour but that they do put all the separated parts back together to arrive at a 100% extraction flour. Indeed, the General Mills spokesperson cited the same FDA code quoted above and added that it is in a mill's interest to sell everything they can at food-grade prices as the by-products from milling white flour (namely bran and germ) are sold mostly as feed, at much lower per pound prices.

Apparently, there is something else that accounts for the different qualities of roller-milled (industrial) versus stone milled whole wheat. The *Bread Lines* article uses the term "whole milled" repeatedly and suggests that flour labeled as such has quite different qualities from industrial whole wheat flour. As this appeared in a technical article, we may assume that this is a technical term. Although it isn't defined explicitly, it is implied that whole-milled flour is stone-milled from whole wheat kernels and nothing is sifted out. This seems to us to be synonymous with the common term "stoneground whole wheat flour."

There are numerous mills that produce stone ground whole wheat flour, and some have been doing this for 25 or more years. Some Guild bakers even grind their own flour from berries. To the best of our knowledge, the most common way to produce stone-ground whole wheat flour is to run the clean wheat through a pair of quarried or composite stones and reduce the whole kernels into flour in a single pass.

Chef Klein's promotion of local whole grains, along with the Community Grains project and Craig Ponsford's new bakery all appear to be positive new developments in the whole grain baking world, and we commend the *Bread Lines* editors in spotlighting them. On Community Grains website (<http://communitygrains.com/aboutus.html>) the current movement connecting bakers, millers, and farmers is likened to the food movement that was begun in the 1970's which was (and still is) centered around the association of chefs and farmers. We're very excited about the many regional farmer-miller-baker partnerships that are springing up around the country. ✨

Why Genetically Engineered Wheat

By **P. STEPHEN BAENZIGER** Small Grains Breeder, University of Nebraska, Lincoln, NE

With the recent acquisitions of wheat seed companies and collaborations between public institutions and private companies for wheat improvement, it is natural to wonder if genetically engineered (syn. genetically modified [GM], transgenic) wheat is on the horizon. Wheat and rice are two of the world's major crops that currently do not have transgenic products available on the market. This lack of transgenic products is in stark contrast to other crops where in 2010 the one billionth hectare of transgenic crops was planted (<http://isaaa.org/resources/publications/briefs/42/executivesummary/default.asp>).

From a breeder's perspective, transgenes are a new source of genetic variation. Plant breeding has three phases: **1.** The introduction of genetic variation, usually done by crossing (making sexual hybrids), but also through transgenes and mutations **2.** Inbreeding, which allows the introduced variation to segregate (separate into different plant types) and selection of useful types, and **3.** Extensive evaluation to determine if the selected lines have merit for commercial release and if so, where they should be grown. Transgenic wheat expands the genetic

variation that is available for wheat improvement, and thus can be very valuable, especially when it is understood that transgenic variation is for traits that cannot be found in wheat and its relatives. Simply, if we have the needed genetic variation within wheat, there is no need for transgenic approaches.

However, for many traits, natural (within wheat) genetic variation does not exist, hence the promise of and need for transgenic wheat. One example of a beneficial trait that is not possible without transgenics is 'winter hardiness'. Transgenic approaches have also been successful in reducing fusarium head blight. Coupling transgenics with natural resistant could lead to higher levels of resistance.

We have all heard the future predictions that we will need to feed 9 billion people, which, due to better diets, will be the equivalent of feeding 12 billion people today. Furthermore, we will need to feed those people with the same amount of land and more efficient use of inputs. Farmers, agronomists, and plant breeders will need all the available tools to meet this challenge.

Genetically engineered wheat is one of those tools. Is it a critical or key tool? My largest grant in wheat breeding is to develop organic wheat cultivars, so clearly I believe that the consumer needs choice and that non-transgenic and transgenic wheat can co-exist. However, transgenic wheat is needed to increase our chances of meeting our future needs because we need the additional variation, and the additional investment from the private sector that comes from their commercializing transgenic wheat. Will the advent of transgenic wheat mean that we will end global hunger? Sadly, no. We have the resources to feed the world today and choose not to. The power and expectations of transgenic wheat cannot change the human heart, but it can help provide us with the means to feed the world whenever we decide to do so. 🔥

P. (Peter) Stephen Baenziger is the Eugene W. Price Distinguished Professor at the University of Nebraska. His research focuses on improving the agronomic performance and winter hardiness of small grains and on developing new breeding methods.

SOUTHWESTERN BREADS

Continued from page 17

bread with fresh chillies and cheddar (Coyote Café), Corn and Chili Fougasse (Jeff Yankellow). As chefs and bakers are incorporating more local ingredients into their menus, the adaptation of Native American *mélange* is exciting.

Although the cuisine of the Southwest was strongly influenced by the Native Americans, the Spanish conquistadors and padres, as well as the later Mexican settlers, played an important role in the origins of its bread recipes. In Sonora, the Mexican state directly south of Arizona, more wheat than corn is grown, and the

tribes of southern Arizona adapted by growing Sonora wheat. Consequently, Arizona tortillas are more often made of wheat flour, while corn rules in New Mexico. The Spanish established Santa Fe in 1609 and their first mission in Texas in 1682. They had better luck in New Mexico than in Arizona. For example, Tucson, founded in 1776, remained the northernmost point of Spanish or Mexican settlement, but fewer than 300 people remained there when the United States acquired the area in 1848, primarily because of raiding Apaches and the lack of resources.

This was until 1910, when the Mexican Revolution sent thousands of people into southern Arizona. They brought the food

traditions of Sonora with them, including large, thick, wheat tortillas, tamales made of green corn rather than the corn flour made from nixtamal (hominy). More than 890,000 legal Mexican immigrants came to the United States for refuge between 1910 and 1920, many to escape the fighting and for better economic conditions. With this migration, they put a permanent stamp on the Southwest. They brought a more or less continual influx of influence from Mexico of the blending of its cultures: Native American and Spanish (*mestizaje*), French, German (breweries), Lebanese, Chinese and many more. Today you can find bollitos, pan dulce, conchas and molletes across the Southwest. ✨

Some Thoughts on Natural Selection and Genetic Modification

By **JEFFREY HAMELMAN**

Guild Member and Director, King Arthur Flour Company Bakery



Since the beginnings of life on earth, species have evolved based on their overall suitability for particular environments, and the collective species of a given area, both flora and fauna, developed ways that favored not just survival of the fittest, but mutual interdependence among species as well (for instance, trees at the edge of a forest growing stouter to buffer the taller inner trees from the wind). This haphazard perfection of nature characterized evolution until a few short millennia ago, when humans began the practice of natural selection. Seeds were intentionally and meticulously saved, based on desired characteristics: for example, seeds of early-ripening beans, winter squashes with great storage capability, or particularly prolific cereal grains might be saved. The collective wisdom of the world's farmers ensured that the vegetables and grains of

a given area were those that thrived best in that area. Seeds from these treasured varieties represented true food security.

Today natural selection is giving way to the aberration of genetic manipulation, and for the first time in history, single corporations produce genetically modified seeds, patent the seeds (the U.S. Supreme Court deemed that life forms could in fact be patented), legally forbid farmers to save seed, and force farmers to rely on chemicals that are produced by the seed company. Genes that have never and could never find their way into plants are now being intentionally inserted across species lines. Further, as long as the winds blow, pollen drift will occur, contaminating the plants on neighboring farms and negating the possibility of nearby farmers practicing organic methods. Once these seeds enter the environment, they cannot be recalled,

in spite of the specter of unintended consequences that could devastate vast acreages.

What occurred naturally over the course of countless millennia is being supplanted, in the name of corporate profit, by gene manipulation in the lab. Do we really believe that the feeble mind of man can replace the long-term correctness of nature? In the U.S. we are not even legally entitled to know if the foods we eat are grown from genetically modified plants. Why is this? 🔥

Jeffrey Hamelman is the author of *Bread: A Baker's Book of Techniques and Recipes* and is the 2005 recipient of The Guild's prestigious Golden Baguette Award (now the Raymond Calvel Award), which recognizes individuals who have contributed significantly to the advancement of artisan baking.

Minneapolis Guildhall Gathering APRIL 9, 2011

HOSTED BY PATISSERIE 46 :: MINNEAPOLIS, MN :: MARC LEVY, LIAISON

PHOTO: MARC LEVY



Guild members at Patisserie 46. Clockwise from upper left: Nathan Hildebrandt of King Arthur Flour, Shawn Swain, Solveig Tofte, Guild Chair and owner of Sun Street Breads; Jason Towley, Stephanie Towley, Sheila Wagner, and Martin Ouimet of Sun Street Breads.

Minneapolis Guild members met on April 9 for a Guildhall Gathering at Patisserie 46, one of our new member bakeries.

One of the attendees, Nathan Hildebrandt of King Arthur Flour, said, "Being brand new to the Bread Bakers Guild, I wasn't sure what to expect at my first Guildhall Gathering. The host for the evening was John Kraus and his crew at Patisserie 46 in Minneapolis. As you would expect from John, the food was fabulous, and we had a chance to sample a number of his fine pastries and breads.

"The thing that I truly enjoyed was the chance to hobnob with the other Guild members and bakers from the Twin Cities area. The food scene in the Minneapolis/St. Paul area is awesome. I am looking forward to the next time that I have an opportunity to attend another Guildhall Gathering." ✨



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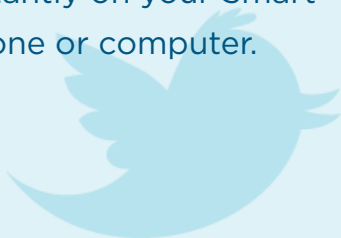
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