

Bread

magazine



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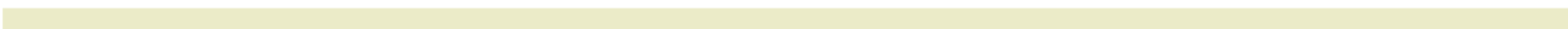
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WELCOME

Earlier this week, I was giving a presentation to a Finnish magazine's staff. I talked about magazines and publishing today, sharing my experiences from publishing this digital magazine. In one of the slides, I mentioned our little group of bakers here at Bread Magazine and how a shared interest for great bread has brought us together.

My friend, listening to the presentation, commented that the magazine is like a campfire that brings us together, but in the end it's the tribe around it that makes it worth sticking around. I liked the metaphor a lot.

Working on the magazine, I talk to a lot of bakers around the world, both readers and people I interview for the articles. And—I've said this before, but it's worth repeating—I'm always amazed at the welcoming, warm attitude within the bread making community.

In this issue, we see this manifested many

times: When Barbara 'Elisi' Caracciolo decided to visit Filippo Drago and his mill, she was welcomed even outside the opening hours.

When Tia Ingle and I first went to see the bakers at the family bakery K.E. Avikainen in Helsinki, we didn't make an appointment. Still, we were immediately asked to take a look inside the bakery.

In his "A Baker's Favorite Bread" profile, Mark Sinclair tells us that the community of breadheads on the internet has cheered for him throughout his career as a baker.

Many people have told me, and I must agree, that they haven't experienced a similar bond in any other trades. The welcoming and supportive attitude is special. It's an amazing strength worth cultivating and growing further every day.



A group of people like this—a tribe as Seth Godin would call it—often defines itself as much through the things it's not as through the things it is.

For us, one good example is our attitude towards industrial bread: As fans of handmade bread, we often look down on industrial products (and for very good reasons, I must add).

When creating this issue, I was faced with this dilemma: One of the articles in this issue tells the story of Danielle Ellis's visit to The Puratos Sourdough Library in Belgium.

When I first read about the Puratos Sourdough Library, I felt conflicted. I was excited about the idea of a site dedicated to studying and maintaining the variety of sourdough cultures from around the world. But at the same time, I was afraid that this was simply a marketing stunt—a trick to make an industrial bakery additive company seem more appealing to the wider audience.

To be totally honest, I'm still not 100% sure about where I stand on this.

I don't think there's a need for industrial sourdough products—anyone can [create a sourdough starter](#) with nothing but flour and water—and I do think there's a bit of a publicity stunt involved. Still, the library itself seems to be the real thing.

"It is Puratos' way of contributing to the wonderful world of natural fermentation and fermentation technology," the company explains its thinking for the sourdough library.

And Danielle was impressed by it.

So, I guess I'll leave it to you to check out Danielle's article and decide for yourself (let me know your thoughts if you feel like it).



As always, I hope the selection of articles and recipes in this issue will inspire you to bake more bread. Practice is what makes a baker perfect. And maybe even more importantly, making bread is a lot of fun.

If you have any comments, questions or ideas for the future, [send me email](#). I'm happy to be a part of your tribe of bread makers and lovers.

Thank you for reading, and happy baking!

Jarkko

"I don't think there's a need for industrial sourdough products. Anyone can create a sourdough starter with nothing but flour and water."





THE HERITAGE MILLER FROM CASTELVETRANO

Words and Photos: BARBARA 'ELISI' CARACCIOLLO

I was staying with my family at a summer beach location on the Northern Sicilian coast, just above Trapani.

Our vacation had been planned so that we did not have to move much more than from the hotel to the beach or to the small town center and back. But Castelvetro and its very special flour was just a hundred kilometers away. A Sicilian pharmacist named Floriana, a charm-

ing young lady with a passion for wholesome bread, had told me about this mill in Castelvetro that I absolutely had to visit.

Could I possibly miss it?

Floriana helped me get in contact with the miller and so I arranged to visit him with my family on a Saturday when the mill was closed to the public.

The quicker way from our beach location to Castelvetroano—which lies 10 kilometers from the Southern coast—was to cross a strip of inner countryside. After a few days spent roasting on a beach, I had no clue of how the inland looked like, and even Sicilians living by the coast visit the inland very seldom.

“What’s there to see?” our driver commented dryly.

Well, plenty to see for me.

Acres and acres of cultivated fields, beautiful olive orchards and lots of golden ears of wheat getting ready to be harvested. And even some very modern wind turbines contrasting strikingly with the timeless rural landscape. If it wasn’t for the turbines, this land might have belonged to any time between the 13th and 19th centuries.

My gaze got lost in the cultivated fields, the arid hills, and worn down stone cottages. The air was hot and dry. And I fell deeper than ever in love with Sicily.

This land, in the past, used to be called “il granaio di Roma,” Roman Empire’s wheat barn, because of the high quantity and quality of its hard wheat production.

Wheat remained an important crop in Sicilian agriculture until the Second World War. Then, the diffusion of extensive wheat farming collapsed the Sicilian wheat economy almost entirely. Italian pasta is now almost always based on non-Italian hard wheat, [much of it is grown using extensive farming methods in Arizona](#)! It needs to be said, though, that Arizona has recently rediscovered small scale production of heritage local hard wheat varieties such as White Sonora and Hard Red Spring. Check out [Hayden Flour Mills](#) for high quality Arizona heirloom wheat.

But back to Sicily... Extensive wheat farming in other parts of the world made the price of wheat drop drastically, so that wheat farming in Sicily, generally conducted on a small scale, was not profitable any longer. Sicilian

farmers had to move to other crops, some of which were complete failures, not apt to grow in this land better suited for hard wheat.

While I was lost in this train of thought, helped by the knowledgeable Sicilian driver (a farmer himself, and the owner of a small olive orchard) who punctually answered all my questions regarding the land and what was grown in it, the landscape suddenly changed and I found myself glaring into the eroded, “sgarrupati”, sand-colored buildings facing the streets of Castelvetroano.

Just a few turns and there we were.

[Molini Del Ponte Drago](#) is what I would call a city mill, as it is located in the city rather than in the countryside, where one would imagine a mill to be.

And it makes sense. In town, the mill is close to the bakeries that produce the bread made with their flours—the famous Pane Nero di Castelvetroano¹—and the people who eat it.

1 The bread has received the label, [Presidio Slow Food](#), given to regional foods worth treasuring [to protect food biodiversity](#).

“This land, in the past, used to be called ‘il granaio di Roma’, Roman Empire’s wheat barn, because of the high quantity and quality of its hard wheat production.”



THE ARTISAN MILLER

The miller, Filippo Drago, a friendly looking young man, greeted us with a big smile and a vigorous handshake. Then, he started by showing us Molini Del Ponte's pearls, the three mills based on natural stone.

The stone mills were not busy when I visited the mill, but there was still a lot of activity around. We heard the sound of the roller mills, very modern looking machines.

"Here we combine ancient and modern technology," Filippo explained.

"We produce fresh stone-ground heritage flour when orders are placed. And to keep busy the rest of the time, we produce Sicilian finely ground hard wheat (semola rimacinata)."

Even the stone-ground heritage wheat production is assisted by modern machines.

"The new at the service of the old," Filippo continued.

"We ensure the quality of our heritage wheat flours by using modern instruments."

From inspecting, selecting (discarding the damaged or molded ones), and cleaning the wheat berries to measuring the humidity level of the kernel to be able to determine the amount of water needed to temper the berries before milling, everything is done using two different—and quite sophisticated—instruments.

A whole world unraveled in front of me and I was already ruminating within myself on how to get a mini humidity detector for when I mill at home... I mean... A kernel humidity detector always comes in handy in a kitchen, right?

My miller-wanna-be fantasies were soon interrupted by Filippo's assistant who suggested we move to Filippo's office, away from the modern machines, to have more quiet. There, I was drawn even deeper into the fascinating, forgotten craft of artisan wheat milling.

"You know, the instruments, including the stone mill, are not all. To own the instrument of a great artist does not make you a great musician." Sicilians often talk in metaphors, it is part of their charm.

"One does not become a miller just because one owns a mill," Filippo continued with a serious, slightly troubled, voice.

"One needs to know the art of milling, and not many do nowadays."

"You know, the instruments, including the stone mill, are not all. To own the instrument of a great artist does not make you a great musician."





LEARNING THE SECRETS OF STONE MILLING

From Filippo, I learned that in stone milling, the percentage of humidity needed for tempering the wheat berries is lower than that required in roller milling.

We pass from 17% in roller milling to 10-11% in stone milling. This happens because when milling in the old fashioned way, without isolating the endosperm (the inner core of the wheat berry) from the rest of the kernel, the germ can get activated with higher percentages of water. And when the germ is activated, it will soon make the wheat rancid.

That is why stone ground flour generally does not last more than three months. Filippo's flour, instead, starts to slowly deteriorate only after six months and can probably be in good condition for much longer. I can confirm that I have some year old flour from Filippo in my pantry and it still makes good bread (and does not smell nor look rancid).

This was eye opening for me, I had never thought before that the key was in the humidity. And indeed a non-activated germ can actually contribute to preserving the flour longer (after all the germ contains Vitamin E, just like olive oil).



Then, I learned that modern stone mills are often based on agglomerated rather than natural stone. The difference is that the industrially agglomerated stone is not as hard as the natural one and gets worn out quickly, needing to be fixed or replaced quite often.

Filippo also hinted at the possibility that, because of this, flours made with modern stone mills may not be as healthy: "Where do the missing parts from the worn out agglomerated stone go? In the flour!"

Natural stone wears out much more slowly, and anyway whatever goes into the flour is "natural" rather than industrial.

What the natural stone needs, however, is a delicate work of maintenance, which in Italian is called *rabbigliatura*. This means to manually sharpen the cutting edges of the millstones, carrying on their surface designs called *raggi* (rays). Filippo told me that he still remembers how fascinated he was as a child, looking at the artisans doing this fine job.



A TOWN THAT NEVER LOST ITS ROOTS

Filippo's father and his brother started Molini Del Ponte Drago in 1967, continuing the work of Filippo's grandfather, who was into wheat trading. Filippo himself has been working at the mill for more than twenty years, and it is thanks to his enthusiasm, competence, and far sight, that the mill has become the symbol of a new approach to wheat in Sicily.

It does not surprise me, however, that the Sicilian wheat revolution started in Castelvetro—or let's say, rather, that it has Castelvetro as its natural capital. In this town, heritage wheat has always been used. There has never been a break, a gap, in the tradition of making wholesome stone milled bread with local wheat heirloom varieties.

I was in an almost raptured state of mind when Filippo told me the feel-good bread story of how, in this town, people have continued to make bread using their ancient local hard wheat, Tumminia (with the accent on the last "i", as Filippo corrected me for at least three times). The flour—also called Timilia—has a peculiar dark color and that is why the bread made out of it is called Pane Nero (black bread).

After the Second World War, refined white bread became popular all around the globe, including Sicily. In most of this region, local wheat varieties disappeared to give room to modern ones. But in the countryside around Castelvetro, Tumminia kept being cultivated, stone milled, and used to make Pane Nero.

Filippo told me that during the week, people bought white bread from the bakeries. But on Sundays, the bakeries were closed and the women of Castelvetro baked Pane Nero using their local dark hard wheat flour. Just like they always had. It was the bread the families wanted to eat on a Sunday when they all gathered together.

And so the town's stone mill kept going and never stopped.

NOT JUST TUMMINIA

Some years back, Filippo met the farmers of [Fattoria di Gesu](#) in the nearby *Piana di Belice*. From them, he learned that in Caltagirone there was, in Filippo's words, a "museum of wheat varieties" that continues the pioneering work of Ugo De Cillis. Later, I found out that the center is called [Stazione Consorziale Sperimentale di Granicoltura per la Sicilia](#), literally "Experimental Consortium Center of Grain Breeding for Sicily."

Filippo made sounds of awe as he went through De Cillis' book, proudly exposed on his desk: "Look at these wheat kernels, look at these ears of wheat!"

He then went on to show me the difference in the way hard wheat and 'soft' (common) wheat look like.

Once back home, I immediately ordered the book. From it I learned about De Cillis' story, that of Caltagirone's center, and—most importantly—the recent story of Sicilian heritage wheat varieties.

Ugo De Cillis was an agronomist who in 1931 published a compendium of all of the Sicilian wheat varieties that were still being cultivated back then. Each variety was meticulously collected, photographed, tested (in terms of baking properties), and classified. Samples were sent by De Cillis to crops gene banks all over the world and so these varieties were saved from war and post-war's oblivion.

In the mid-1960's, Caltagirone's Center (originally located in Catania) was closed. Luckily, the center was reopened 10 years later, in 1975, and now it is thriving again, continuing the hard work started by De Cillis.

In relatively recent years, the Center contacted the crops banks to which De Cillis sent the Sicilian varieties, and these old varieties were replanted in different areas of Sicily. Farmers are now encouraged to try growing the old crops—a change in which Filippo has been a moving force.

From the Center (the wheat museum, as he calls it), he collected heritage wheat samples and distributed them to local farmers, ensuring a fair price for this wheat that is "outside the wheat stock market".

Indeed, this old wheat grown in biodynamic ways and in small quantities is not comparable to the modified modern one, produced in large quantities and with the use of pesticides. The work is harder and the yield is lower, but the quality of the end product does not compare. Therefore, the price must be higher. And this is how a local wheat economy is resurrecting in Sicily.

"Look at these beautiful wheat berries!" said Filippo, leading me out from his office to one of the many huge wheat sacks lined in the mill's storage room.

"This is nothing like modern wheat. The plants these berries come from are 1.20 to 1.80 meters tall, just like those classified by De Cillis. Modern wheat plants have been dwarfed using gamma radiation and by breeding them with Asian dwarf wheat varieties. But mostly they have been irradiated."

Induced mutagenesis is the term, which resonated like a death sentence in the vast storage room.

"Look at these beautiful wheat berries!"

Nowadays, in addition to the old favorite Tumminia, Molini Del Ponte also makes several other heritage Sicilian wheat varieties available to the public.

"We have Maiorca, Perciasacchi, Russello, Biancolilla e Bidi'."

Some of these varieties, like Tumminia, Rusello, and Bidi', have remained cultivated in small areas of Sicily. But now their cultivation is spreading to larger areas again, together with the cultivation of varieties which have been re-introduced only recently, such as Maiorca and Perciasacchi. And more heirloom wheat sorts are planted every year.

After this lucky (and life changing) visit to the Sicilian mill, I had the pleasure of trying flours from several of these wheat breeds in my home baked bread. I could clearly notice how distinct their taste and baking properties are. An ode to food biodiversity, for sure.

A HEALTHIER AND TASTIER LOAF

Filippo told me that the gluten content in some of these heritage wheat varieties is very low: in a recent test performed by a local university it was found that the gluten index in the variety Tumminia (the flour used in Pane Nero di Castelvetro) was as low as 26. The gluten index measures both the quantity and the quality of gluten in the flour and, if it falls below 40, we have flours that are considered "un-bakable".

However, the women of Castelvetro have used Tumminia since forever (we don't exactly know for how long, but we may be in the order of millennia), by combining it with other local hard wheat varieties with better gluten properties. Generally in a proportion of 50/50.

The key, according to Filippo, is to follow the tradition, where natural fermentation is key.

The biggest reward in working with flours with a lower (and different quality of) gluten rather than using the flours available at our nearest grocery store is a healthier loaf.

And not to speak of taste.

Never before could I taste a distinct flavor in my bread until I stumbled on these flours. It was like savoring aged cheeses from different terroirs. The Sicilian hard wheat varieties I tried all tasted different—and I love this diversity in food and bread.



Regarding the healthful aspects, it has been shown that the gluten contained in heritage wheat varieties, particularly in heritage hard wheat, is more gut-friendly.

This means that this type of gluten does not promote inflammation in our gut tissue as much as the gluten contained in modern wheat varieties.

Heritage wheat flour is also generally higher in nutrients, as compared to modern wheat.

The modern crops were, in fact, selected for a massive increase of the starchy section (the endosperm). This was done because only the starchy part was milled while the germ and the bran were discarded. This selection of plants with larger endosperm sections was done to the cost of the other parts of the wheat berry, particularly the bran section. Which is why, although the type of gluten contained in heritage wheat flours is weaker than that in modern wheat varieties, the older crops generally have a higher protein content. Moreover, both the endosperm (the starchy section) and the bran in heritage wheat varieties contain larger amounts of trace minerals like iron and zinc, and antioxidants, like lutein.

Let me conclude with a “hats up” to Filippo Drago for having helped spread heritage wheat breeding in Sicily, and for having created such a high standard of milling that includes both modern and knowledgeably used old tools.

My hope is that millers approaching this field for the first time will follow Filippo’s example and learn to use the best of what we have—both old and new, avoiding fashionable nostalgic vintage attitudes—to bring us the best flour possible.

This way, we can bring to our table a flavorful, nourishing, and healthful bread. Just like the women of Castelvetro (and Monti Iblei, see recipe on the next pages) have done for all these centuries—simply by following their intuition.

“My hope is that millers approaching this field for the first time will follow Filippo’s example and learn to use the best of what we have—both old and new—to bring us the best flour possible.”





PANE IBLEO – TRADITIONAL HARD WHEAT SICILIAN BREAD

Words and Photos: BARBARA 'ELISI' CARACCILO

The inspiration for these rolls came from a drawing I saw in an article I got from Filippo. The article compared different Sicilian heritage flours, confirming the low levels of gluten proteins contained in some of them. To illustrate the traditional use of these flours, there was a colored sketch of an oddly shaped bread. This bread, it was said, came from a Sicilian region called Monti Iblei where the Russello variety of hard wheat has been cultivated since forever.

I discovered that Pane Ibleo is often called 'U Pani Ri Casa, home-made bread. This was because these loaves were prepared at home by women every week using mother dough from the previous batch and then baked in the closest wood-fired oven.

I then recreated the rolls in my kitchen, thanks also to a few internet sources that helped with the shaping technique.

I published the pictures of my reconstructed Pane Ibleo [on my blog](#) last summer, and recently a visiting home baker from Paris who was following my writing told me the most amazing story.

This baker friend was in Sicily for a wedding and happened to go to the countryside. There, he saw a woman selling some local produce on the street. And, guess what! Among the goods she was selling there was also some bread she had baked.

"Hell no!" screamed the baker, "That is Barbara Elisi's Pane Ibleo!"

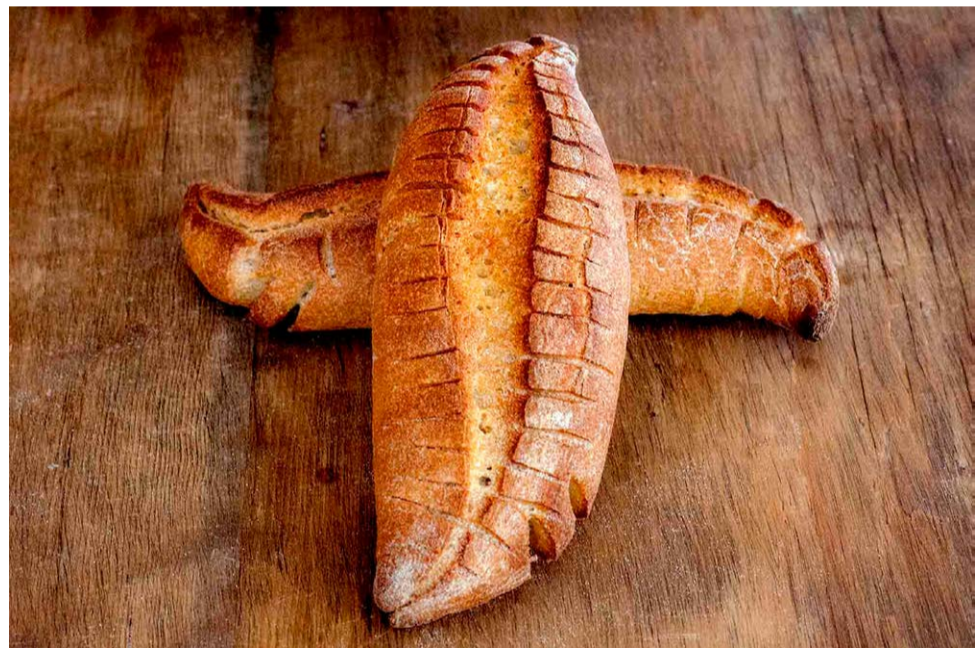
Now it can be yours, too.

THE RECIPE

Ingredient	Quantity	Baker's %
Stiff wheat sourdough starter (50% hydration), recently fed and allowed to rise	200 g	20%
Whole wheat durum flour (traditionally of the Russello variety)	1000 g	100%
Water	550 g	55%
Salt	3 teaspoons	2%

Note before starting: if you use, as I did, whole wheat durum I recommend kneading by hand. A stand mixer will not help much in handling this dough.

1. Place the flour on a kneading surface, make a "fountain" in the middle and put some of the water and all of the starter in the well, making sure to dissolve the starter completely.
2. Once the starter is dissolved, incorporate the flour, adding water along the way, and then the salt.
3. Work the dough for about 10 minutes.
4. If the dough does not seem to come together into a smooth mix, add more water and let the dough get well hydrated. If you do, make sure to add more flour toward the end of the kneading, to get the right smooth and workable dough (it should feel like play-dough, allowing you to shape it however you want).
5. Once the dough feels smooth, flatten it with your hands and fold in three, flatten again and fold in three again.
6. Let rest, covered, for another half hour then repeat the folds.
7. Place the dough in the fridge and leave to rest overnight.



8. After the rest, take the dough out of the fridge and divide the dough into 6 pieces, then proceed at shaping as shown in the pictures.

9. Roll each piece of dough into a cylinder. Then, make a central fissure with the cut of your hand. Fold the dough over the fissure and place it upside down.

It is important to slightly flatten the mini loaves at this point.

10. There are two ways to go. One is to let the dough rise upside down without cuts, but this will work only if having a powerful oven spring; the other is making cuts which will help in case of poor oven spring.

11. So this is what I did, considering my poor oven and the low gluten flour I was using (which actually was the traditional flour used for this bread): I made a central deep cut with a razor, then I made smaller horizontal cuts.

I also made four further deep cuts, two at each end of the loaves, in a mirror-like fashion (see the pictures). I then twisted the ends of the loaves and let rest with the fissure down and the cuts up, covered with plastic wrap.

12. After 2 hours, bake the breads at 250 degrees Celsius and with initial steam, lowering the temperature progressively after the first 10-15 minutes.

The best way to eat these earthy rolls is to season them the way of *pane cunzato* (literally “seasoned bread”): cut them open and drizzle the crumb with olive oil and fresh tomato juice, sprinkle with salt and oregano—and if this sounds like something you like, add some anchovies, too.

Just like a real siciliano.



Barbara 'Elisi' Caracciolo is an Italian bread lover living in Sweden. In her daily life, she is a scientist and in her spare time she bakes, eats, and writes about bread at [Bread & Companatico](#) and for the Italian Bread Baker's Guild Journal "L'Arte Bianca."



LEIPOMO K.E.AVIKAINEN

KOTILEIPOMO VUODESTA 1955



A FAMILY BAKERY THAT STOOD THE TEST OF TIME

Words: JARKKO LAINE

Photos: ARTEM STOROZHENKO



“This is a way of life,” Jenni Avikainen tells me as she divides and scales rye dough.

It’s 10 A.M. and Avikainen, or Jenni—in the realm of her family bakery, it feels natural to talk about her on a first-name basis—has been baking bread since three in the morning. Surprisingly, she doesn’t look the slightest bit tired. If anything, the 58-year-old seems happy and relaxed, even as she tells her day won’t be over until some eight hours later!

The bakery’s only hired employee, Mikki Hellsten, just finished his day’s work and heads home. Jenni’s brother and bakery co-owner, Olavi Avikainen—she calls him Ola, is out delivering bread to the bakery’s resellers. Behind the counter in the bakery’s small storefront, Jenni’s niece, Jasmin greets customers.

“There is always something to do.” Jenni says and continues to explain that bakery work demands *sisu*.

Sisu is one of those translation-defying words we find in every language. A classic personality trait the Finnish people take pride in, it means something along the lines of determination and perseverance—a stubborn “let’s do it” kind of attitude.

And, it turns out, it’s the perfect word for describing this small bakery’s journey so far.

THE FIRST VISIT

I first learned about the bakery, K. E. Avikainen, in a local newspaper. The reporter was impressed by its homely old time style, but even more impressive was the fact that the bakery's 89-year-old co-founder and mother figure, Elvi Avikainen still sold bread at the store's counter.

That sounded like a story worth telling and a bakery worth visiting. So, I stacked the idea at the back of my mind and went on with my work. Some time passed. Then, this August, fellow bread head and #BreadChat buddy, [Tia Ingle](#) came to visit Helsinki. We were planning to meet and I thought it would be fun to do something bread related together.

That's when I remembered the bakery.

Tia was immediately on board and so, on one of the final warm days of this summer, we went looking for the—surprisingly hard to find—bakery. We took a few detours but thanks to modern technology (two iPhones and Google Maps), after some wandering around the neighborhood, finally made it to our destination.

Elvi Avikainen had been to surgery and was taking a well-deserved break from her work at the bakery. Instead, we met her daughter Jenni who told us that her mother was itching to get back to work.

"Maybe she could come for a few hours a day," she said, smiling.

It was clear that she thought her mother couldn't stay away from the bakery she had spent a big part of her adult life building.

Even though we hadn't been in touch with her in advance, Jenni immediately invited us to step in and have a look around the bakery while she baked rye bread.

The experience was enjoyable and so, Jenni and I agreed on a second visit for a more detailed interview. About a month later, there I was again, this time accompanied with another friendly bread enthusiast, Artem Storozhenko.

"Even more impressive was the fact that the bakery's 89-year-old co-founder and mother figure, Elvi Avikainen still sold bread at the store's counter."



RETURNING TO K. E. AVIKAINEN

When you visit the small family bakery, it's as if you jumped into a history book or traveled back in time to the 1960s. A time when Finland was still a very different place. The bakery sits on the ground floor of a light brown apartment building, buried in the middle of the verdant streets of the Kallio neighborhood near central Helsinki.

The small storefront's windows declare the name of the bakery in between lush fresh flowers.

When you enter the store, you'll notice pastries, sandwiches and cakes in a glass showcase. On the shelves behind the counter, there is bread: rye bread, baguettes, French bread, traditional white bread. Nothing is overpriced.

Photos of family and people who have worked with them over the years decorate the walls.

One of the pictures—my favorite—is a drawing of a cat in bright boots, made by Jenni when she was in her teens. On the shelves, you'll find well selected non-bread items such as coffee filters and soft drinks.

What is clear is that K. E. Avikainen is not one of those trendy sourdough bakeries you'll find in city centers. This is an old-fashioned family bakery—and it's proud to be one.

"This is an old-fashioned family bakery—and it's proud to be one."



A HISTORY OF HARD WORK

The bakery's story begins in 1955 at Riihimäki, a small town about an hour away from Helsinki.

Jenni's father, Kaarlo Eino Avikainen (hence the name of the bakery) had earned his diploma as a baker and pastry chef. Like most of his colleagues at the time—a trend that has left Finland with hundreds of small family-owned bakeries, he wanted to start his own business.

For a few years, the bakery Kaarlo founded with his wife Elvi run successfully at Riihimäki. But then, the young baker got a hunch that it might be a good time to move forward.

"There's no future at Riihimäki," Jenni remembers her father saying.

The competition among bakers was growing at Riihimäki and the bakehouse was at the risk of being torn down. Kaarlo decided to move the bakery and his young family to the capital, Helsinki.

And so, after some time searching for a new location, and a short stint at another location in Helsinki, in 1965, K. E. Avikainen opened its doors at the spot where you'll find it still today.

At first, winning the hearts of the neighborhood wasn't easy. As a working class neighborhood, Kallio was a stronghold for the food cooperative, Elanto. Elanto had its own bread products, and the Kallio residents weren't about to try something new.

“What’s this young couple doing here?” people were asking.

But hard work and *sisu* kept the bakery going. As the couple continued baking and selling their bread, slowly but steadily they won over the neighborhood.

Laughing, Jenni tells me that once people realized that her parents weren’t going anywhere, they took the bakery as their own. It became a part of the neighborhood—even if it wasn’t a part of their cooperative.

The only hired help at the time was a driver who delivered the bakery products to resellers and so the couple handled everything by themselves. Kaarlo made bread night and day. Often, Jenni remembers, he stayed at the bakery all night even after everyone else went home. Elvi took care of selling the products.

And so, the family’s four children grew up with their lives mixed with flour, water and lots of love.

“The work paid off when in 1974, the family had their first summer vacation!”

The work paid off when in 1974, the family took their first summer vacation! The store was closed and everyone, even Kaarlo, took a short break from making bread.

That’s how the Avikainen family operates still today: even though summer vacations are something that now happen every year rather than once every twenty years, the store still closes for the time. This summer, the store was closed for three weeks—Jenni and Ola returned a week earlier than planned..

“When the store is closed, no money comes in.” Jenni says.





BECOMING A BAKER

Growing up, the four children often rode the tram to spend time in the bakery and to meet their friends who lived in the neighborhood. But none of them seemed all that interested in continuing their parents' work.

So, after considering his options, Kaarlo told his children that they had to at least give it a try. No one would be forced to continue in this trade, but he wanted them to see what it's like before making the decision.

So, at the age of 17, Jenni entered the bakery. At first, to give her daughter a smooth start, Kaarlo only asked Jenni to work at day time, about five to seven hours at a time. He was also very careful to be encouraging and never said a critical word.

"I think he knew that if I thought I was good at this, I would be more likely to want to continue," Jenni says and remembers her father telling her: "Yeah, you will make an excellent baker."

"I think he knew that if I thought I was good at this, I would be more likely to want to continue..."

Before she knew, she noticed she was enjoying the work. For Jenni, as well as her older brother Olavi, the experiment turned into a lifelong career.

The remaining two brothers tried the work but in the end decided to pursue different career paths, even if they still feel invested and cheer for Ola and Jenni.

K. E. AVIKAINEN TODAY

As years have gone by, Kallio has turned from a traditional working class neighborhood into a hip part of Helsinki mostly populated by students and young people.

Kaarlo passed away 20 about years ago, but Avikainen is still there, and if anything, the bakery now run by his two children is more popular than ever.

Today, the bakery produces bread for its own storefront and for about fifteen resellers in the Helsinki area—from the city's oldest department store, Stockmann, to small restaurants and bread shops. The bakers also make cakes and other specialty products, including the cutest rye bread cats and other animals I've ever seen, on order.

When I ask Jenni to estimate the number of loaves of bread they produce every day, she has a difficult time giving a definite answer. This is because a lot of the production changes from day to day and from season to season.

When pressed for a number, Jenni tells me they make about 35 to 40 liters of rye bread dough every day.

This rye bread (real 100% rye bread made with sourdough starter, fresh water, a bit of salt, and often a hint of added yeast) is the pride of the bakery. Just like at every small bakery in Finland, which is no wonder: it is the most traditional of Finnish types of bread.

MAKING RYE BREAD

As I ask my questions about the bakery and Artem explores the environment through the lens of his camera, Jenni shapes small loaves of rye "*reikäleipä*"—a ring-shaped flat bread (literally: hole bread). She takes a big chunk of dough and rolls it gently on a floured table. Then, she cuts pieces of it, weighing them on a trusty old scale.

"You couldn't use an electric scale at a bakery. It would just get stuck because of the flour," Jenni says.



Then, she rolls the bread, two balls of dough at a time. The rotating movements go fast. But looking at her hands, I notice that Jenni barely touches the loaves. She lifts them in the air and then gently directs them where she wants them to go.

Jenni confirms my hypothesis and tells that her father, the only baking teacher she's ever had, taught her: "Make those loaves jump!"

The phone rings and Jenni leaves the dough to wait while she answers it. When working with dough, she wears rubber gloves. This way there is no need to wash her hands when moving from baking to taking care of the office, and back.

You have to be inventive when there are no extra pairs of hands to help you out!



Once she has shaped a batch of rye breads—enough to fill a board roughly one by one meter—Jenni flattens them gently. Then, she uses the palm of her hand to press a dent in the middle of each of them, lifting them one by one on the board as they are finished. Finally, she uses a small cookie cutter to push holes in the middle of each of them.

When ready with the holes, Jenni lifts an old fork in the air. This brings a smile to Artem's face and he asks Jenni about the tool.

Yes, Jenni explains, she uses the trusty fork for scoring the rye bread.

"It creates a beautiful decoration with three lines," she says.

Dough is active this morning, and for this flat rye bread, the second rise only takes five minutes. So, we get to see her load the oven.

It's a three-deck pizza oven that has been in use for years and years. As the oven cannot accommodate big batches of bread at once, the bakers have to keep baking and making more rye bread throughout the day.

But I get the impression that this is how they prefer to work.

BEING YOUR OWN BOSS

It's handwork. They like to do it. And they do it in a homely environment they enjoy being in. Even if that means not sleeping quite as much as they might like.

"I couldn't think of doing any other type of work," Jenni says.

The craftsmanship and creativity combined with the independence that comes from being your own boss make it all worth the effort. No one needs to approve their ideas: if you have an idea, you can go for it.

Jenni is now in her late fifties with five to seven years to go before the official retirement age. Ola is a couple of years older. But neither of the two is ready to think about retiring. And if their 89-year-old mother is any kind of an indicator, they'll still have many years to think about the future.

When the Helsinki city museum visited Avikainen to photograph and document their tools and utensils, they asked Jenni if they could have them once the bakery no longer needed them. Maybe.

"But not yet. We still use them every day." Jenni replied.

"The craftsmanship and creativity combined with the independence that comes from being your own boss make it all worth the effort."



Artem Storozhenko is the founder of the Cutting&Cooking project. Passionate about bread baking. Keen on exploring healthy and tasty food.

Follow Artem on [Instagram](#), [Facebook](#), and the [Cutting&Cooking](#) blog.



VISITING THE PURATOS SOURDOUGH LIBRARY

Words: DANIELLE ELLIS

Photos: PURATOS and DANIELLE ELLIS

The Scottish Bakers organise several learning journeys each year. I joined one such tour to St Vith in Belgium to visit Puratos.

We were to spend time at the food additive company's development kitchen and discover its products. But the part of the journey that particularly intrigued me was a visit to Puratos's Sourdough Library.

The [Puratos Center for Bread Flavour](#) site is modern, nestled on one side by a golf course. Across the road is one of the factories where the company makes its sourdough products.

The test kitchen was full of the sort of equipment that every baker would dream of—the latest ovens, dividers, shapers and more. But the thing that really interested me sat at one side through it, behind a very ordinary looking door: the Sourdough Library.

I couldn't quite imagine what such a library would look like and how the exhibits would be kept and displayed.

THE SOURDOUGH LIBRARY

The Sourdough Library is a beautiful room. Look up and you might believe you are in a forest with leafy trees above you. Along the walls are glass fronted cases, and inside them large jars each labelled with a number. Nothing else.

The Library was opened in 2013 and is a non-profit initiative to collect sourdoughs from all over the world, to protect the sourdoughs' diversity and to increase knowledge about them. It is the result of a long-term research program between Puratos and Professor Marco Gobbetti of the University of Bari.

[In an initial study](#), where Gobbetti mapped and conserved sourdoughs from around Italy, the scientist and his team studied the micro-organisms of 19 different regional types of bread:

"We found a large diversity of mainly lactic acid bacteria among the sourdoughs," Gobbetti explains. "We related such differences to the environmental parameters and the type of flour used [...] such microbial diversity should be considered a sort of fingerprint for the uniqueness of each sourdough."

Some of the sourdoughs had just a couple of types of lactic acid bacteria, others had many, contributing to each bread's distinctive flavour. In fact, Scientists have discovered more than 700 different yeasts and more than 1500 lactic acid bacteria during this research.



Sourdough: *"A mixture of flour (wheat, rye, rice, etc...) and water, fermented by lactic acid bacteria and yeasts, which are responsible for its capacity to leaven a dough, while contemporarily and unavoidably acidifying it" (Gobbetti, 1998. Trends Food Sci. Technol.)*

Many of the sourdoughs studied formed the core of the Puratos collection in the Sourdough Library. The collection now stands at more than 72 different samples and with approximately 20 new samples added each year, Puratos sees no limit on the numbers of starters the library can accommodate.

The library opened with samples from Italy, Greece, Hungary and the USA. Since then, samples from Italy, France, USA, Mexico, Australia, UK, Portugal, the Netherlands, Greece, Hungary and China have been added. There are four sourdoughs currently under evaluation from Poland, Ireland, Spain and United Arab Emirates.

Starters can always be provided to the original bakery should a disaster occur—actually, following a fire at one of the bakeries, the sample in the collection already enabled the bakery to continue as before.



DEFINITIONS OF SOURDOUGH BY PROFESSOR MARCO GOBBETTI

Type I sourdough: Traditional sourdoughs whose microorganisms are kept metabolically active through daily refreshments (three-stage protocol is applied relying on three refreshments over 24 h).

Type II sourdough: Sourdoughs obtained through a unique fermentation step of 15–20 h followed by storage for many days. These sourdoughs are liquid, and they are produced at the industrial level using bioreactors or tanks at a con-

trolled temperature. Type II sourdoughs are used for dough acidification and as dough improvers.

Type III sourdough: Type II liquid sourdoughs, which are dried and stabilized after preparation, are named type III. They are mainly used at the industrial level as acidifier supplements and aroma carriers.

Puratos makes and sells types II and III.
Source: "[History of Bread](#)" (Oct 2013)

STARTER STORAGE AND MAINTENANCE

In the library, fresh sourdough samples are stored in special glass jars at a constant temperature of 4°C (29°F). Samples are also frozen and stored at -80°C in 4 different locations. The sourdoughs are refreshed to a set timetable, much longer than you or I might do with our sourdoughs, using the correct flour for that particular sample.

It is mainly the origin of the starter (original bakery environment and the flour used for starting the sourdough) that defines the bacteria in the sourdough. To preserve that bacteria, Puratos considers it essential to continue using the original baker's flour.

Avoiding cross-contamination is also crucial. That's why, when doing the refreshments, all the materials are cleaned and treated with alcohol before usage and in between each batch of sourdough.

But does the sourdough stay the same? Every year, three sourdough samples from the library are randomly chosen to be analysed and compared with the initial results of the original sample collected. Until now, there have been no significant differences.

For each sourdough starter in the library, Puratos stores the following information:

- The starter's story.
- The type of "back slapping" required. Back slapping is the addition of flour and water to refresh the sourdough.
- The type of flour used.
- Kneading time and at what temperature
- How long it should be left to prove and the baking temperature.

As I looked through the documentation, I was fascinated to see the variety of temperatures and regimes.





Three samples were provided for us to smell, touch and taste. It was remarkable how different they were in texture and appearance. I can assure you the smells were quite different too! One of the three samples in the photograph is from Eric Kayser. He presented it to the library on opening day!

DONATE YOUR STARTER

I'm sure you'll now be wondering whether you can take part!

Bakers can submit a sourdough by making contact with their local Puratos office. After completing a checklist, Puratos evaluates the submitted form and then informs the baker whether the sourdough was accepted or rejected. If a sourdough is rejected, it may be that the sourdough was made with a kind of flour or comes from a region already present in the library.

Each donator is given a certificate showing that his or her sourdough is included in the library. Number 59 was in preparation as we visited.

If you do contribute, let us know and if you do get the chance, visit the library. It is fascinating!

"If you do contribute, let us know and if you do get the chance, visit the library. It is fascinating!"



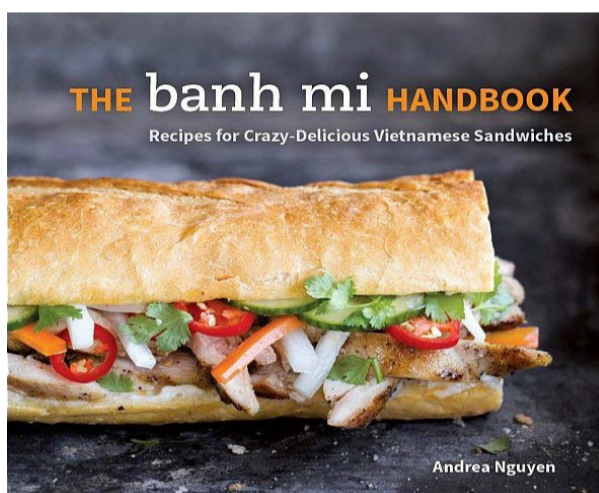
BANH MI: BAGUETTES FROM VIETNAM

Words: JARKKO LAINE

Photos: ERNESTO ANDRADE and ANDREA NGUYEN

This summer, when I was writing my article on baguettes¹, one type of baguette, in particular, caught my attention: *banh mi*, the king of Vietnamese street food. I think what drew me to it was a mixture of nostalgia and curiosity. This bread looked a lot like the bread of my childhood in Senegal yet the way it was first a sandwich and bread only second was something quite different and exciting.

Curious to learn more, I bought a copy of Andrea Nguyen's book, [The Banh Mi Handbook](#), and went looking for more information. The book further fueled my nostalgia with its mentions of Maggi seasonings and making the bread extra soft by using some added vitamin C in the dough.



In the book, Nguyen writes: "The French, who officially ruled Vietnam from 1883 to 1953 but arrived as early as the seventeenth century, introduced baguettes to Vietnam."

This explains the similarities in the bread. But *banh mi* is more.

As Nguyen elegantly puts it, "*Banh mi started out as a colonial novelty in Vietnam, became nationwide favorite, was transported and transplanted via a diaspora, and was enthusiastically adopted by new audiences. Like people in Vietnam, these new fans enjoy banh mi for what it is: a super tasty sandwich.*"

To dig a bit deeper, I asked Andrea Nguyen a few questions about the bread and the sandwich.



1 The article was published in our [Issue Sixteen](#) in July 2015.



Jarkko: *What makes banh mi special? What separates one from any other type of sandwich?*

Andrea: Banh mi has many elements of an excellent sandwich: it's synergistic, exciting and infinitely satisfying. You return to a good sandwich over and over because you never tire of it.

For me, what makes banh mi stand out is manifold. It's the sandwich of Vietnam, where I was born. It's the embodiment of Vietnamese history and culture—an amalgam of Southeast Asian, East Asian and Western ideas that's purely Viet.

For a modest amount of money, you get to ingest Vietnam's delectable history and culture. The bread, condiments, and some of the meats are the legacy of Chinese and French colonialism. The pickles, cilantro, and chile heat reflect Viet tastes for bright flavors and fresh vegetables. There's not too much meat (Vietnam is a low-meat country) and lots of vegetables, colors and texture.

Banh mi appeals to all the senses, which is a cornerstone of good Vietnamese cooking.

"For a modest amount of money, you get to ingest Vietnam's delectable history and culture."

Jarkko: Can you share a favorite banh mi memory of yours?

Andrea: Given all the combination of accent marks used, the Vietnamese language is a tough one to master. For example, bánh mì thịt nguội refers to a Saigon-style cold cut sandwich that includes mayonnaise, pickles, cucumber, cilantro, and chile. It's the definitive banh mi for many people.

When I was about twelve, I was tasked with writing our family's Little Saigon shopping list.

On one occasion, Mom told me to include banh mi. Instead of noting down bánh mì thịt nguội, I wrote bánh mì thịt người. When my parents read my list, they busted out laughing. I'd spelled human flesh sandwich!

They loved my mistake (Viet people enjoy word plays) and told their friends, one of whom took to calling me the Human Flesh Sandwich Girl.

It pays to spell check and proofread.

"When my parents read my list, they busted out laughing. I'd spelled human flesh sandwich!"

Jarkko: The bread in banh mi reminds me a lot of the bread I enjoyed as a child in Senegal. Very soft, with a thin crust. How about in Vietnam, is the bread also sold and eaten on its own, or just in sandwiches?

Andrea: Do you think that the similarities are due to French colonialism in both Senegal and Vietnam?

In Vietnam, bread is sold as sandwiches but also served alongside certain dishes, such as bo kho, a stew of beef, tomato and lemongrass dish grounded in French ideas. The bread soaks up the juices. It's also served with curry preparations. I've seen Vietnamese breakfast served with the bread, fried eggs, Viet pickles, and sausage. There's an old school dish of steamed stale banh mi with scallion oil.

Banh mi is part of everyday Vietnamese life. There's an economy built around making and delivering fresh crisp baguettes to banh mi vendors and markets. The bread is inexpensive and meant to be eaten the day it is bought. There's super light, cottony bread that is relatively inexpensive. Pricier bread has better flavor and heft.

Jarkko: If you could give just one tip for someone planning to make his or her first banh mi, what would it be?

Andrea: After laying down the mayonnaise, sprinkle on Maggi Seasoning sauce. It is part of the signature flavor of banh mi sandwiches. I could go on and on but that ingredient is not stressed enough when people try to deconstruct Vietnamese sandwiches.



For more information about banh mi and Vietnamese cooking, check out [Andrea Nguyen's web site](#).



INSANELY INTERESTED PUBLISHING IS A PUBLISHER OF
MICRO MAGAZINES FOR THE CURIOUS.

A micro magazine is a magazine that focuses on a very specific topic, published online or off by a very small (but passionate) team of writers.

I am Jarkko Laine, stay-at-home dad, writer, the publisher of this magazine, beginner cigar box guitar player, and all-round creative guy from Vantaa, Finland.

I believe that as humans, we are born curious and need to keep learning about different things to enjoy our lives to the fullest. We are here to deliver a small part of that healthy diet for a curious brain.

My love for a dark crust on a soft white crumb combined with a need to find out how things are made lead me to create the magazine you are now reading.

Through little steps, as I keep learning more about online publishing, I keep building the magazine into a sustainable, long-lasting business that can serve the world by presenting ideas and stories from people doing things they believe in.

Having you with me on this journey brings me joy.

A BAKER'S FAVORITE BREAD: SINCLAIR'S BAKERY



Words: JARKKO LAINE

Photos: MARK SINCLAIR

On a Saturday morning, vendors are preparing their stands for the weekly farmers' market in Bozeman, Montana when a large dark green trailer pulls into the gravel parking lot. Mark Sinclair, a lean man with short, graying hair, steps out of his truck and sets up his bakery for the day.

Mark's work began already many hours earlier, at typical baker's hours, and he has been preparing for the market for most of the week.

But the day's work is far from complete: The baker strives to sell the freshest possible product to each of his customers, so right after arriving at the market, he heats up his ovens. Then, just in time before the market opens, he slides in the first batch of baked goods.

Even though it's raining, a line of people eagerly waiting for their fresh baguettes and Saturday morning croissants begins to form.

Returning buyers know exactly what they want and place their orders punctually. Newcomers read the list outside the trailer—placed in a wooden frame like the menus you'll find in front of French restaurants—and ask for ideas for products to try. Maybe a *palmier*? They peek through the window into the bakery where Mark spends every spare moment producing more bread and pastries, loading and unloading the oven.

Many of those looking in are surprised to find that the trailer is a fully furnished, real bakery.



“Even though it’s raining, a line of people eagerly waiting for their fresh baguettes and Saturday morning croissants begins to form.”

The idea for a bakery in a trailer was born in 2011 when Mark was still running his previous bakery, The Back Home Bakery, in his basement in Kalispell, Montana. Waiting for customers at a farmers' market, Mark and a baker who was spending the week as an intern with him were chatting—about bread and baking, naturally.

The intern asked Mark: "If you were to start from the beginning and do this all by yourself, how would you set up the bakery?"

Mark pointed at the man selling kettle corn near them and said: "You know what's missing from how I do it now? I bake, bake, bake. I go to the farmers' market, and I sit at a table with my stuff. If that guy just showed up with bags of kettle corn, he would sell nothing!"

Same for hot dogs and stir-fry noodles.

"And in those jobs, compared to baking, there's a lot less skill involved."

He took a piece of paper and sketched a trailer with a bakery installed inside it.

The idea was simple and compelling: if you could bring the experience of breadmaking to the market and show it to the customers, Mark thought, there would be lines.

What he didn't know yet was that the following year, he would be the guy doing just that.

THE LONG ROAD TO BAKING

Mark's journey to running his own bakery has been anything but straightforward. But it did start young: the first spark for a career with bread and pastry was ignited already as a fourteen-year-old on a ski trip to Switzerland.

At a time before coffee houses and Starbucks, the small cafés in Switzerland and their relaxed atmosphere made a big impression on the young man.

"There was no concept of getting in and leaving and rushing—getting it to go, that sort of thing. It was a very different experience for an American." Mark says.

Inspired by the experience, which was further amplified by subsequent visits to the area

in the next ten years, Mark began his college studies in a hotel and restaurant management program.

"It was kind of a culinary school and business school combined," he says.

But two years into the four-year studies, plans changed and instead of becoming a restaurant manager, Mark went on to study psychology and teaching. And so, the idea of running a bakery was pushed to the back of his mind as he pursued a career in education.

"If that guy just showed up with bags of kettle corn, he would sell nothing!"

But, as luck would have it, after earning his degrees, Mark got his second, this time much more hands-on, experience with bread and baking.

With a Master's in teaching and no work experience, in a tight economy, Mark found himself overeducated for the jobs he applied for. And so, in 1993, after doing substitute teaching jobs and coaching for a while, he went looking for a permanent job—any job, pretty much.

Mark thought of his favorite bakery.

This was before the artisan baking revolution took on in the United States, and the bakery made a product that Mark describes as "hippie bread", hearty whole grain loaves baked in pans.

"I had never made a loaf of bread before," Mark says. But that didn't stop him from asking for a job.

"[The owner] thought about it and two days later he gave me a call and said: If you want the work, you can start tonight. So I started just like that."



A BAKER'S EDUCATION

The newest member of the team was thrown straight to work. With nothing remotely like a training period, he had to learn the trade the same way others at the bakery had done before him: by watching.

"They all had different techniques. I just watched them, nobody told me what to do." Mark says.

Shifts lasted from 7 PM to 3 AM, and at first, he spent all of that time scaling dough for the other bakers to shape.

"They would be doing other things and then, once there were enough pieces of dough on the table, they would come and shape them quickly. And I'd just keep scaling the dough. For weeks, that was what I was doing." Mark recalls.

Slowly, he got better at it, and the work started to become more interesting:

"As I got faster at it, then suddenly the table would be full of dough. And then you can shape a little bit."

While the products were nothing like the artisan products Mark makes today, he speaks about the experience appreciatively: the two years spent at this bakery were a school many of us amateur bakers never get.

"I learned my basic skills there. The basic handling of the dough," he says and continues:

"Sometimes, people try to skip that step. For instance, if you are an amateur artisan bread baker and you want to start a bakery... They have the knowledge of what needs to be done and they can do it on a small scale. But they don't have the skill of doing it hundreds and hundreds of times."

The dough is alive and when it's "on", you have to move fast. This, Mark says, can quickly become a limiting factor for how much you can produce. When making bread for sale, it doesn't matter how beautiful a single loaf is if the rest overproof while you're crafting it.

"They would be doing other things and then, once there were enough pieces of dough on the table, they would come and shape them quickly. And I'd just keep scaling the dough."

Another lesson Mark took away from this experience proved its value twelve years later, when in 2007, after a career in teaching, Mark came back to professional bread making. This time to start his own bakery.

To prepare for the transition, he picked two books from Amazon: the Culinary Institute's book on [Baking and Pastry](#) and Jeffrey Hamelman's classic, [Bread: A Baker's Book of Techniques and Recipes](#). He also started to frequent at the amateur baker hangout, [The Fresh Loaf](#).

Reading Hamelman's book, Mark was impressed by the quality and detail of the information. But he also found that people were complicating things more than what was necessary.

"I realized how different my training was than what I was reading. It was like night and day," he says.

Mark's training in bread making had been the old-fashioned kind, baking by feel with none of the technicalities such as checking the temperature of the water or the flour.

"There weren't even temperature dials on the ovens! It was just like adjusting the flame on your stovetop," Mark says.

"The way you knew the bread was done was by tapping it, by looking at it. And you knew it was ready to go into the oven when it looked like it was ready to go into the oven."

The books and the community of bakers at The Fresh Loaf, on the other hand, were approaching bread making from an entirely different angle. Everything was carefully measured and controlled—and documented—to get the best possible results¹.

"It was so incredibly technical, and I didn't think it needed to be that technical. Because I had baked many thousands of loaves and I didn't know any of that stuff." Mark says.

1 In his book, [Cooked](#), Michael Pollan explains this attention to detail with the fact that many of the site's members are engineers.





"It gave people who didn't have the luxury of learning from their mother or their grandmother something solid to hold on to."

But while Mark felt that these bakers were getting too focused on the technicalities, he also saw that there was a purpose for all this information.

"It gave people who didn't have the luxury of learning from their mother or their grandmother something solid to hold on to," he says.

"With Hamelman, I would bet that a lot of what he's saying now is kind of reverse engineered. Because that's how I've done it: I would make something and say 'This feels perfect.' And then I would check the temperature: 'It's 78° Fahrenheit. Perfect temperature.'"

Mark wanted to present this idea to the community at The Fresh Loaf to encourage them to trust their feel. And so, while building his bakery in his basement, he shot [his first video](#) and posted it on the site.

"It was to show that it doesn't have to be baked in a certain kind of pot. It doesn't have to be mixed in a certain way. It can be done. I was kind of trying to bring it back a little bit." Mark says.

That first video soon led to more.

"People started asking me questions, and because I wasn't being super technical, I think people felt comfortable around me."

THE BACK HOME BAKERY

Mark finished his bakery with the community on *The Fresh Loaf* cheering for him. And by the fourth video, he was already broadcasting from the baking space in his basement.

"There's a strong bond," Mark says, talking about the group of bread lovers, many of whom have followed him all the way to where he is today. People like the professional baker from Hungary who sends photos of his products—Mark sends pictures of his work in return.

"He doesn't speak any English and I don't speak any Hungarian. We don't need to."

[The Back Home Bakery](#) was active from 2008 to 2012—"four solid years"—and, just like [Sinclair's Bakery](#) today, was mostly a one-man operation.

Selling at farmers' markets, Mark quickly realized that the act of giving the bread to his customers was one of the most significant parts of what he enjoyed in baking. And so, it became essential to him that he was both the one baking the bread and the one selling it.

"Most amateur bakers bake more than they can consume themselves. They bake four loaves, and they eat one and then they give one to this person and one to this person. And that's what they like about it," he says and continues: "That's what I was getting as a professional. But they were actually paying for it!"

Even though his wife, a teacher, helped on weekends and during the vacation, this was a lot of work. And Mark, in his early excitement, kept accepting even more requests.

The first year, he sold bread at two weekly farmers' markets as well as supplied restaurants, retail stores, and supermarkets. People who had tried his products at the farmers' markets told about him to their favorite restaurants and requests kept coming in.

"I was excited that people really liked my stuff so I took on a lot of business," Mark says.

This was too much, and so the next year, Mark scaled the production down a bit, accepting less wholesale requests. All the while, the hard work was also paying off and he kept getting more and more efficient at orchestrating the process of bread making.

By the fourth year in 2012, after further optimization and learning, things were moving smoothly at the bakery.

"By the time the fourth year came, it was like this," Mark says and snaps his fingers repeatedly. He laughs and continues:

"I was good. I'd got the routine, everything was going good. The timing was really nice. I was really happy with the stuff."

"I was good. I'd got the routine, everything was going good. The timing was really nice. I was really happy with the stuff."

A BAKERY IN A TRAILER

When the business finally started to run smoothly, things in Mark's personal life took a turn for worse. And so, as he was splitting up with his wife, Mark found himself at yet another crossroads in his life, rethinking his options and what to do next.

A food business license is based on the site and so, as Mark was going to have to move his bakery, that meant getting the new location inspected and licensed.

"Moving across the town is just as big of a deal as moving to another state," Mark says.

He remembered the drawing he'd made for the intern a year earlier.

"That's your great idea?" he asked himself. "Let's see how good of an idea it is!"

And so, the journey towards a new kind of a bakery had started. Mark drew a better version of the drawing, planning how he would best fit his existing bakery equipment in it.

Then, he went on to design the looks of the bakery. Instead of a "carnival look" with funny slogans and huge signs announcing discounts, Mark wanted his trailer to have a more classic, restaurant feel.

"My vision was more like when you go to a *boulangerie*," Mark says.

He researched images of French bakeries on the internet and found they all had a lot in common: All of them had big windows, many of them were green. And the only piece of writing was often just the word "Boulangerie" written in large, bold letters.

At the end of the market season, in December 2012, Mark gathered all his bakery equipment and drove it to [Double R Trailers](#) in Nampa, Idaho where the company built the trailer for him.

Having built the Back Home Bakery himself, Mark knew the requirements and rules for the health regulations well.

This helped a lot and now Mark's trailer is the only one in the state that is licensed for both food retail and wholesale. If, for whatever reason, the town isn't right, he can move and find a better location without getting a new license.



SINCLAIR'S BAKERY

The trailer was finished in February 2013. A few months later, after selling bread at an indoor market for a while, it was time for Mark to put the idea to the test and see how customers would respond to it.

It was a scary moment.

"Here I am in a new place and I've invested all this money into something I thought is a great idea," Mark says.

The weather was perfect, the scenery beautiful. Mark had timed everything so he'd be ready when the market started. He was maybe ten minutes behind schedule, half of the products were done and the baguettes were in the oven. Everything seemed alright.

Then, the first customer arrived, asking for a baguette. When Mark told that they were in the oven and would be ready in ten minutes, the customer didn't stay and wait but just turned around and walked away.

Mark still gets worked up when he tells me about the experience: "I don't believe it! I don't believe they're pissed off at me because my baguettes aren't ready. And they are in the oven right now! They're going to be fresh, they're going to be perfect. I was so disappointed."

During the first hour, Mark sold one *palmier*. In the second hour, one *pain au chocolat*. The first market day's sales could be counted in two digits, Mark recalls.

He remembers thinking that he just made the biggest mistake of his life.

*"He remembers thinking
that he just made the
biggest mistake of his life."*



Mark brought his trailer to the market the next week. Same thing. And again. Things weren't going well, and he wasn't sure why.

Then something important happened.

"I had done five markets at this place when one of the vendors said to me: 'Know what? Next week, this market in Big Sky is opening up. I think your stuff would sell really well at that market.'" Mark says.

The vendor was right: the market at Big Sky was nothing like the one Mark had been going to until then.

"It made the biggest difference, not just financially but also for my self-esteem," Mark says.

At this market, again, a customer came up to the bakery trailer before the baguettes were ready (she was early) and asked for three of them. Mark had just put the baguettes in the oven so, afraid of how the customer would react, he told her that they'd be ready in about twenty minutes.

This customer didn't walk away.

"You're baking them here?" she asked, excited. Then, she turned around and started telling other customers about it.

"I thought: this is the place," Mark says.

"I didn't do anything different at that market. The people were just more appreciative of it."

ORCHESTRATING A ONE MAN BAKERY

This was three years ago, and since then, Mark has been making bread to a receptive customer base, optimizing his work with every bake.

In the summer time, he bakes bread for two very different farmers' markets.

On Wednesday nights, he takes his trailer to Big Sky, a ski and golfing community up in the mountains. It's a beautiful market with grass to sit on, live music, and wine. People get some cheese from the store nearby, then come and buy a baguette and enjoy it with friends.

"Big Sky is more up and down. If the weather is good, I sell a lot. I sell out fast. But if the weather is bad or there's another event going on or something, I don't sell much," Mark says.

"It's like a musician preparing for a one hour concert. Once it's mixed, it's going. You're following it."

Saturdays are market days in Bozeman, which Mark describes as "more like a regular town." The farmers' market takes place on a gravel parking lot, so it's like going to the store. People come to buy.

"If the weather is bad, of course, I'm going to get fewer customers. But still, if they come to buy, they come to buy." Mark says.

The market days—and the nights leading to them—are intense, with everything packed into one day.

"It's like a musician preparing for a one hour concert," Mark says. "Once it's mixed, it's going. You're following it."

"In my head, I have different ideas of what should be shown at the market to make it into a show. But you need to keep in mind that I'm the one selling the stuff too. So I can't be doing too much or people are just going to be standing there watching me," he explains.

To make his concert a success, Mark has a lot of preparation and planning to do. In summer time, this means working seven days a week.

"I make a lot of pastries on non-market days," Mark says.

"I do my laminating and stuff like that, and then I shape them and freeze them shaped. On the market day, I just proof them and bake them."

Bread is the pickiest, especially as Mark proves most of his loaves directly on baking sheets.

"There's a really small—5-10-minute—window for when the bread has to go into the oven," Mark says.

That's why, to make sure it is "just right", Mark bakes most of the bread in advance right before he goes to the market.

Baguettes are the only exception. Mark shapes them right before going to the market, places them on a couche, and puts them in the fridge. The support provided by the couche and the slower fermentation give him more time so he can finish and bake the loaves in front of his customers.

When Mark arrives at the market, usually about an hour and a half before the market opens, he bakes the first batch of everything.

"In Bozeman, a lot of my customers are the other vendors, and they can't stand in line when the market starts," he says.

The second and third batches are for other customers: there needs to be something ready the moment they arrive, and then something baking in the oven so they get to see Mark at work.

"This way, everybody gets it really fresh. And everybody gets to see it," he says.

One of the reasons why Mark decided to settle at Bozeman was the fact that there's an indoor market. This way, even when the busy market season of the summer time slows down, he doesn't have to move to doing wholesale orders.

The indoor market is open every other Saturday, and in addition to this Mark does some small scale baking—such as making puff pastry to a local restaurant—and delivers orders to houses and workplaces every Friday.

"People love it, it's like an old-fashioned milkman kind of thing," Mark says.

"It gives people an option, especially when the weather's bad and people don't want to get outside."

In all, this sums to one or two bake days a week. Enough to pay the rent, but not much extra. But in many ways, it's the perfect counterpart for a busy summer.

Especially at the outdoor markets, there are many factors outside the baker's control affecting how much you can make on any given day. On a beautiful day, bread sells out quickly, but when it rains, you can end up with lots of leftovers. That's why Mark says he doesn't measure success by the amounts sold. Instead, he focuses on how well he did himself.

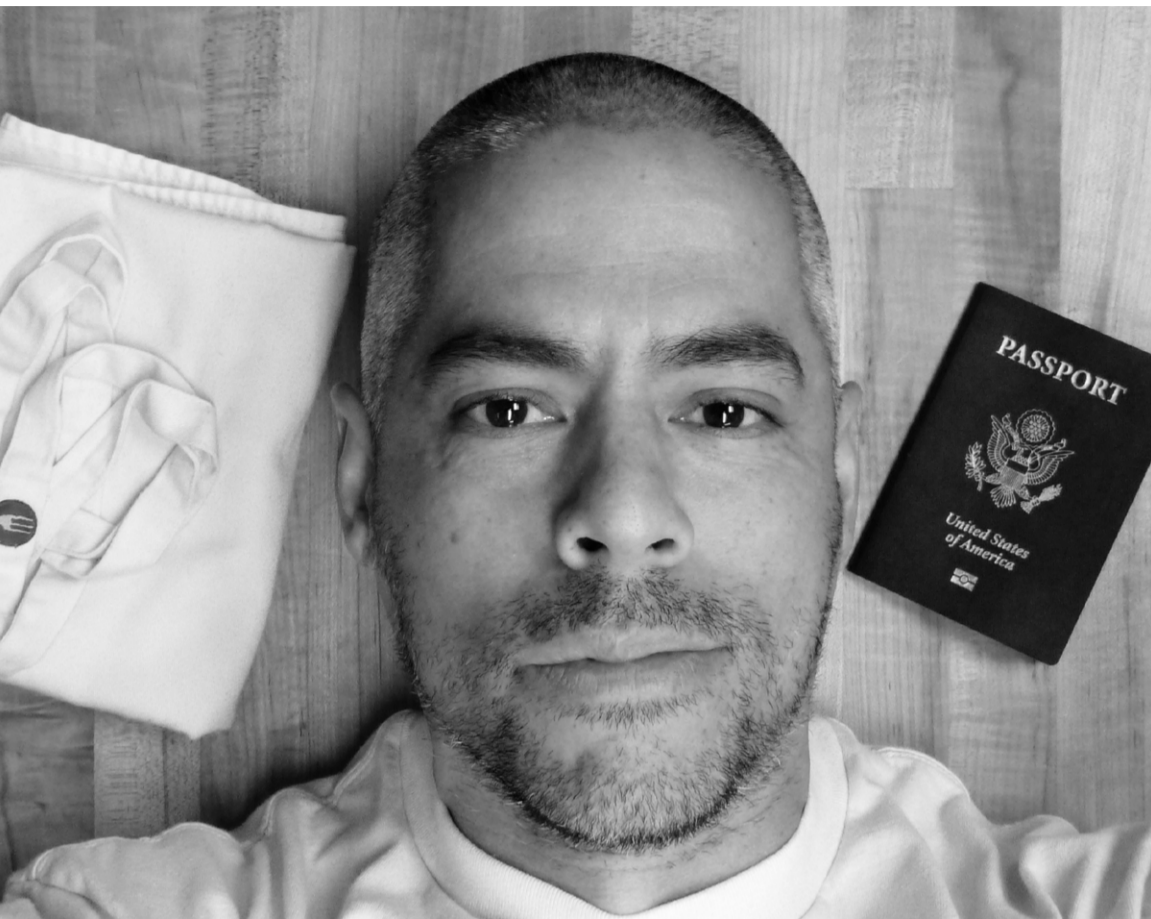
"Every time I'm making something, I'm kind of critiquing it myself. I'm always trying to make adjustments, to make it better. So that even if I have a lot of left-over, as long as I know that every single person that came got something that is great, that's the best I can do," Mark says.

This is important because a customer who receives the best possible product is much more likely to come back for more.

"Even if you sell out, but some of your stuff isn't top notch, you may never see those customers again," Mark says.







A TRIP TO EUROPE

In September 2014, a baker from Honduras contacted Mark, asking him to come and help set up a bakery. As Mark was still busy with his own baking, the timing wasn't right. But it got him thinking about traveling.

The indoor season ends at mid-April and then there's some free time until June when the outdoor season begins again.

"That would be a perfect time for a trip to Europe." Mark thought.

In his years of baking and participating in the bread making communities on Facebook and on The Fresh Loaf, he had been making connections with bread lovers from all over

the world. Many of whom had invited him to stay with them if he ever came to their towns.

Now, he decided, was the time to see if something could come out of the address book.

So, in November 2014, Mark emailed a baker he knew in Amsterdam and proposed his idea for a baking trip. Mark would spend four weeks traveling around Europe and teaching bread-making wherever people would welcome him, using Amsterdam as his home base.

The plan was that by deciding on a home base and an actual plan for the trip in advance, he would make the idea seem more realistic to his potential hosts.

"I thought if I'd put it out and it sounded too vague then people wouldn't be interested," Mark says.

The Dutch baker liked the idea and so, Mark started putting his plan into action: He bought a round-trip ticket to Amsterdam. And then, he [posted a video to announce the trip](#).

“The very next day, I got a message from someone who said ‘what about Russia?’” Mark says.

“Sure,” he replied, and already the next day, he got a long email from someone ready to organize the event.

Things were moving fast.

After shuffling the schedules back and forth for a while, Mark had a plan for a trip that included stays in Madrid, Amsterdam, Moscow, Madrid again, Prague and finally a small town near Pisa, Italy. Courses sold out quickly and so, this spring, Mark made his tour of Europe.

“[It was] a combination of teaching classes and working in bakeries, helping them with their product lines and things like that,” Mark says.

As we chat, Mark mentions many places he’d still like to visit in the future: Middle East, Turkey, Eastern Europe...

“A lot of the bread in Europe is more like a resurgence. And in a lot of the places, it’s not even a resurgence. It’s just been there. They’re still steeped in a lot of their tradition. And that really interests me,” he says.

The trip was clearly a success, and Mark is excited to do something like it again. He also already has many invitations for a second round, so there’s probably a follow-up coming soon.

Time will tell, but one thing is for sure: This is a baker worth following. As a former teacher, Mark enjoys teaching, learning and trying out new things. And he is still happy to share his knowledge with all of us online, through videos on [YouTube](#) and posts on [Facebook](#).

Including recipes, such as a favorite bread Mark agreed to present to us today.





MARK SINCLAIR'S POTATO ROLLS

As artisan bakers and artisan bread lovers, we often have a bit of a one-sided view of what a good loaf of bread is like. We like it crusty. We love sourdough. And because of that, it's easy for us to look down on soft, yeasted bread.

This is why, during the European trip, when he was asked to choose what he wanted to teach his students, Mark always included his Potato Bread recipe in the selection.

"A lot of the people who are into artisan bread, sourdough, they don't do soft bread," he says. "I wanted to teach them something that was high-quality soft bread."

"A lot of the people who are into artisan bread, sourdough, they don't do soft bread. I wanted to teach them something that was high-quality soft bread."

This was also one of the two reasons why Mark chose to share this recipe with us. The second is that, in addition to the bread, he also wanted to include a way to use it.

While bread is great on its own, very often it's a part or even an ingredient of an entire meal—this time, French Toast.

The Potato Bread recipe was born to answer a customer request.

"When I moved here, three years ago, one of the guys who just happens to work here in this building said to me: 'Do you do potato bread?'" Mark says.

He already had a soft bread, a Portuguese Sweet Bread recipe he had developed during his years as a teacher. It was a recipe he liked a lot, and his customers at Kalispell had loved it.

But he got thinking.

"A lot of potatoes are grown here. They have a potato festival every year, it's a big deal here." Mark says.

"I decided I needed to do potato bread. And so, because of that conversation, I came up with a potato bread recipe."

Since then, the potato bread has been a staple in his inventory. Sold as buns, it's a customer favorite that is mostly used with meat: as burger buns, with pork, shredded beef, and so on. But the applications are not limited to burgers and other meat products.

The potato bread also makes an excellent French Toast, something Mark often tells his customers.

"Some soft breads—especially ones made with butter instead of oil—as soon as you heat them up, the flavor really comes out. I'll tell people that too: I say they freeze really well. After you thaw them, put them on the grill for just a little bit, it brings out the flavor, and really changes it." Mark says.

"I tell them to cut the top and the bottom a bit off. Then it's kind of a sponge. And it makes a cool round French Toast."

THE FORMULA

Makes twelve 95-gram rolls.

Ingredients

Ingredient	Quantity	Bakers' %
All-purpose flour	585g	100%
Milk	200g	34.2%
Potatoes, sliced and boiled	134g	22.9%
Potato water	47g	8%
Butter	58g	9.9%
Eggs	50g	8.6%
Sugar	48g	8.2%
Salt	14g	2.4%
Instant yeast	4g	0.7%

Instructions

1. Mix ingredients together and knead for 3 minutes until smooth. Place in an oiled bowl and cover for 20 minutes.
2. Knead for 30 seconds. Shape into a boule, place back in the bowl, and cover for 60 minutes.
3. Stretch and fold, boule, place back in bowl and cover for 60 minutes.
4. Scale. After scaling, the rolls can either be covered and refrigerated overnight or shape at this time.
Refrigerated rolls can be shaped directly from the fridge the next day, or allowed to warm while covered for up to 30 minutes.
5. After shaping, let rolls rise until doubled in size, about 2 hours.
6. Bake at 176°C (349°F) in a convection oven or 190°C (374°F) in a standard oven for 14 minutes or until golden brown.

POTATO BREAD FRENCH TOAST

The mixture is enough for four rolls. For the best French Toast, make sure to soak the bread well:

“I like the consistency to be more like a scallop. It has form, but it comes apart.” Mark says.

Ingredients

Ingredient	Quantity
Eggs	3
Half and half, or cream	1/4 cup
Cinnamon	1/2 tsp
Vanilla extract	1/2 tsp
Nutmeg	1/4 tsp
Ground black pepper	1/4 tsp

Instructions

1. Beat all ingredients together with a wire whisk.
2. Cut the tops and bottoms of the rolls off, leaving a flat-sided roll that is about 3 cm thick.
3. One at a time, press the rolls into the mixture to absorb the liquid (first one side, then the other).
4. Place the soaked rolls in a medium heat skillet with about 2 tablespoons of melted butter in it.
5. Cook for about 4 minutes on each side, or until golden brown.
6. Serve immediately with butter on top and maple syrup.



BAKING SOURDOUGH BREAD WITH FRESH MILLED FLOUR



Words and Photos: MAURIZIO LEO

"You're so crazy," I heard my wife whisper in the background as I unearthed the great red beast from its box marked "Extremely Heavy." The beast, a [GrainMaker Model No. 116](#) hand cranked mill, was carefully packaged and shipped across the country from a small place in the Midwest where everything is still made and assembled by hand. Everything about it exuded quality and craftsmanship.

As I placed the large, shiny apparatus on my kitchen counter, I tried to hold back my excitement and eagerness to start baking with fresh milled flour.

But was my wife right: am I crazy to have my own flour mill in our kitchen?

Throughout history, communities were centered on the flour mill. People would gather when the mill was finished grinding berries into wheat and pick up their fresh flour to bake with it straightaway. These mills were life-giving to the community.

Is it so different to have a mill in your own home and bake with fresh flour?

While the importance of bread may or may not be the same today as it was back then, there's certainly a list of things to be gained by baking with fresh milled flour and for me, taste is at the top.

The GrainMaker allows me to produce some incredibly fine flour, but milling is definitely not a speedy process: it takes me between 10 and 20 minutes to mill just 300 grams of flour (depending on how fine I decide to grind, and how strong I'm feeling that morning).

While my proficiency improves each time I use the mill, the physical process of milling is part of the enjoyment for me. It's that missing step in baking, the transformative part that takes each seed from field to bread.

But perhaps most importantly, the resulting flour is spectacularly fine, very light

and the aroma is intoxicating. Milling that first batch of flour was a real awakening: who knew flour could smell like this?

What was my motivation for milling my own flour? There were several things that captivated me after reading numerous articles and first hand accounts of people milling at home: economics, overall increase in freshness, health benefits, and king of them all, the taste.



BENEFITS OF FRESH MILLED FLOUR

The benefits of milling your own wheat are numerous. First, buying whole, raw berries makes financial sense compared to milled sacks of wheat: not only are they cheaper, but buying in bulk will typically save you even more.

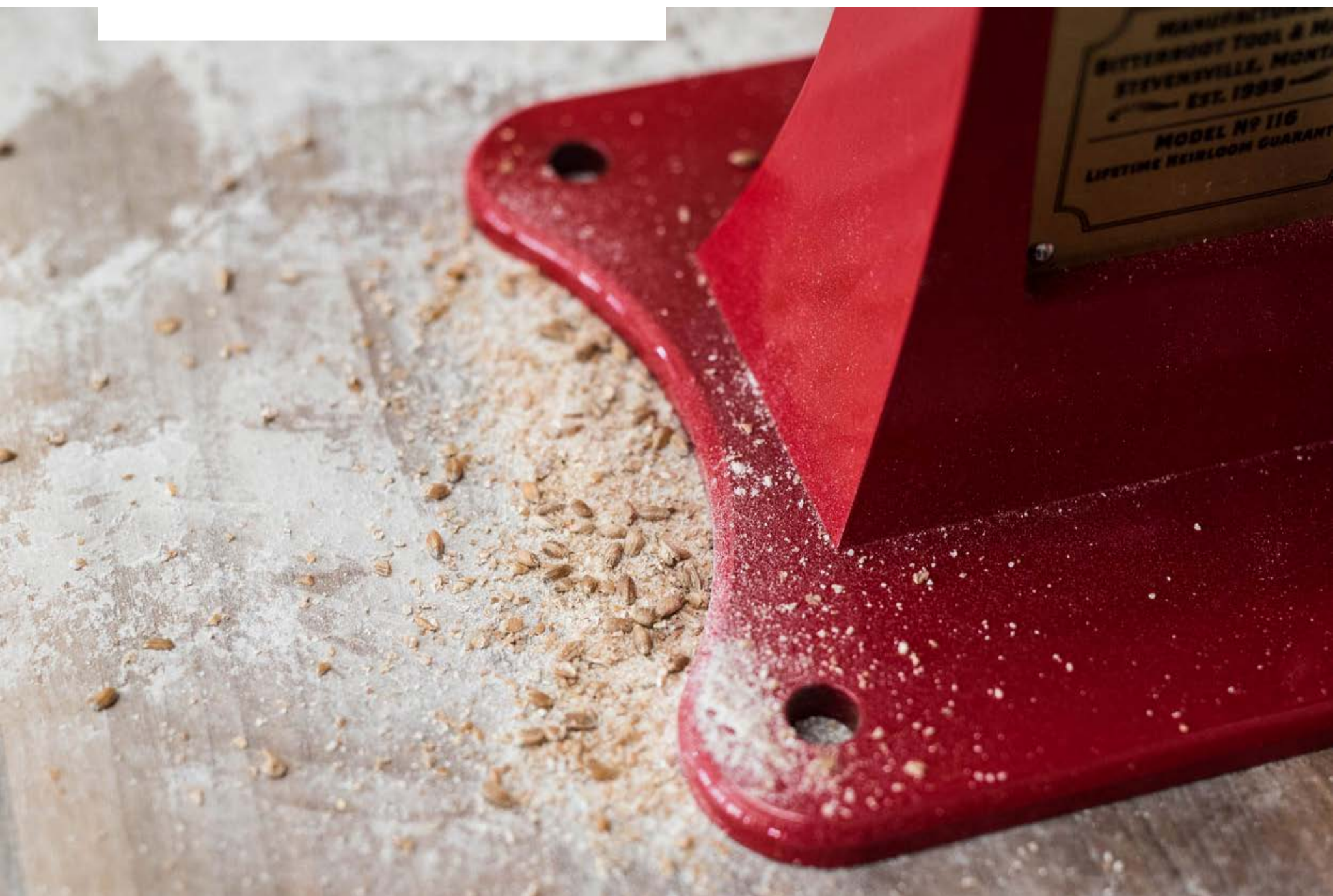
When stored in the proper way (in a cool, dry pantry devoid of light) the shelf life of raw wheat berries is incredibly long—years long, so ordering an excess is never a problem. For a home baker like me this can be a real advantage: I can store 50 pounds of wheat berries almost indefinitely and not have to worry one bit about them spoiling.

I typically bake two to three times per week and I have no problem churning through a 50 pound sack of flour, but it's nice to have fresh flour and mill only what is needed for the next bake. If you are a sporadic baker, it might make even more sense, mill only what you need and the rest will stay fresh long into the future.

Milling your own flour, without sifting, means you will retain 100% of the same wheat berry in your end product.

While many mills will indicate on their packaging that the flour you're buying is *whole wheat*, that doesn't always mean *whole grain*. Additionally, they will sometimes perform several milling passes, especially on the germ and bran, which are first sifted out and then later added back in, reconstituting back to 100% of the grain's original weight.

I have not had firsthand experience with fresh milled and reconstituted flour but I've read several accounts where bakers say there is something different about the taste, nutrition—and that it simply does not perform the same as fresh milled flour milled in a single pass (see Peter Reinhart's latest book, [Bread Revolution](#)).



Studies show that fresh milled flour provides added nutrients to your diet compared to aged flour. To start, bread baked with fresh milled flour has higher vitamin and fiber levels in resulting loaves.

Further, foods exposed to oxygen (oxidization) for prolonged periods will result in nutrient loss—in this case, loss of beneficial minerals and oils. Once the wheat berry is milled, breaking open that protective bran layer, oxidization begins which causes nutrients to slowly degrade. While we do not eat bread primarily for its vitamin content (compared to say, spinach), but rather more for proteins, fiber and carbohydrates, it is great to know that bread baked with fresh milled flour retains more vitamins and nutrients than we might otherwise get.

With all that said, it's easy to get caught up in debate on the exact percentage of vitamin and fiber retention. But to me those are beneficial side effects of a larger motivating factor: taste. It's much better to focus on the fact that this bread is just plain delicious (and, in some possibly unquantifiable way, healthier).

Let's talk about the taste.

“While we do not eat bread primarily for its vitamin content, it is great to know that bread baked with fresh milled flour retains more vitamins and nutrients than we might otherwise get.”



THE TASTE OF FRESHLY MILLED FLOUR

Great taste is of course something we always strive for when baking, irrespective of what flour we are using, but the bread I've baked with fresh milled flour is a world apart from what I'm used to.

It starts with the smell during milling—a smell that reminds me of heavy cream or panna cotta. I never knew wheat could smell like this, and it's captivating. When you smell aged flour it might have a certain sweet smell, but there's something more here, something I wasn't expecting the first time I milled.

You're hit a second time with this wonderful aroma right when you get your hands in and mix with water. It wafts up from the cream-colored mixture and lingers with you though the mix.



I like to equate milling flour to grinding your own coffee beans. Once you taste the results you're hooked.

My typical sourdough baked with fresh milled flour takes on added levels of complexity, a taste that is hard to capture in words but brings a smile to my face at each slice.

The crust becomes incredibly thin and crackly with a forward shine to it, a shine that almost looks as if I had smeared the bread with olive oil and then baked it. The interior of my loaves is tender, light and yields a deeply rich taste compared to my other loaves.

I've read others describe the taste as having a bit of a "nutty" or "grassy" taste to it, in a good way.



Surprisingly these loaves made with fresh flour are almost better when toasted after a few days. That thin and crackly crust crisps up even further, along with the open interior, to provide the perfect crunchy vessel for bruschetta, ricotta and honey, or even just a good slather of salted butter. Incredibly simple but exquisitely delicious.

FRESH MILLED FLOUR VERSUS STORE BOUGHT

There are accounts of the unpredictability of fresh milled flour, how different batches (and sometimes even the same batch but just day-to-day variation) of grain can ferment at drastically different rates, and how aging flour helps to level out the inconsistencies.

But using the whole grain from fresh milled flour is exactly what we want in the first place: a flour that's free of bleaches, stabilizers and other chemicals, just 100% of the wheat berry and nothing else. If that means we have to be a bit more attentive and deal with the peculiarities of the fresh flour then it's worth it for the flavor gained.

I haven't noticed drastic differences in flour performance (in terms of strength) when using fresh flour, but then again I'm still relatively new at the milling game. I've been working my way through two 25 pound sacks of raw berries and have been testing and tweaking formulas along the way.

One thing I have noticed, however, is a significant increase in fermentation activity. Even when my loaves are retarded in cold temperatures at 40-42°F (4-6°C) I have to keep a close eye on the dough after about 8 hours.

Through my tests I've found that the final dough temperature (the temperature of your dough mass after final mixing) is incredibly important: if it's 78°F (26°C) or higher, then be ready for a speedy bulk. I try to target around 75°F (24°C) each bake so my bulk comes in at the typical 4 hours, which is the norm for me.





Of course the duration of your bulk is also impacted by other factors¹, such as ambient temperature and how much levain you included in your mix, but that is my finding when using around 14-15% levain.

Milled, store bought flour isn't always consistent either, of course. There are variations in each sack that every baker must account and adjust for, because flour is not a static input but an ever changing component of baking. Each growing season for the farmer is different and therefore each batch of flour will have different properties. One season might be full of rain and the next might be very dry. As a result, the flour will require a different hydration and might even be stronger or weaker.

Since flour is such an important part of baking (it is the largest ingredient after all), it is incredibly important we look for the best flour we can reasonably afford.

WHEAT BERRY SELECTION

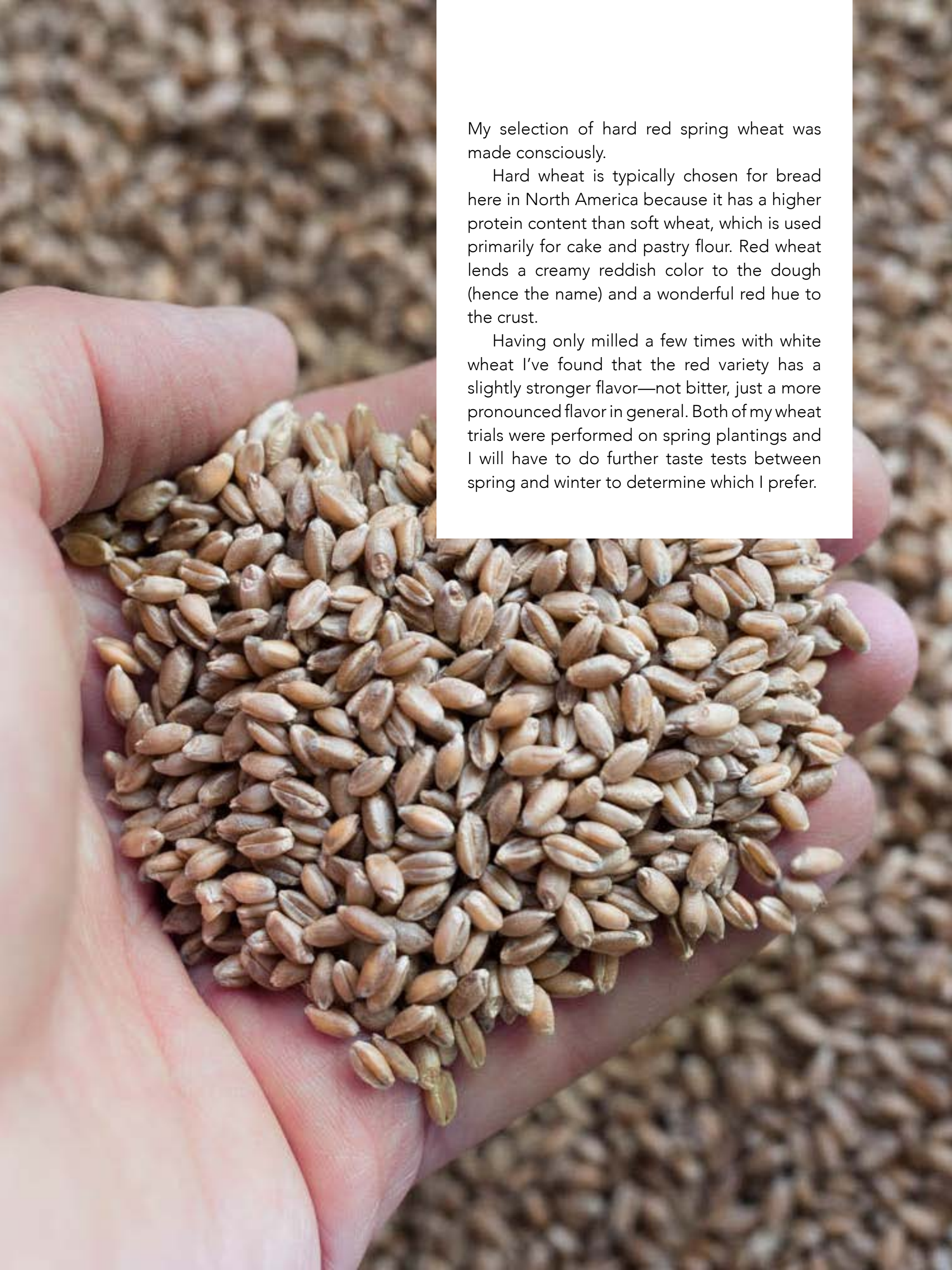
I like to source organic wheat when possible. There are many, many great resources out there for local wheat farmed in an organic and sustainable way, why not take advantage of these great products?

For my first bulk order of raw wheat berries I settled on a 25 pound sack of [Great River Organic Hard Red Spring Wheat](#) grown up north of me, near the northern part of the Mississippi River. I had plans to use a local wheat grown a few hours north of me but the farm sadly dropped their organic rating. I still plan on trying their wheat in the future with the hopes that they return to their original plans of farming wheat organically.

Organic or not is a personal preference. I choose organic when possible, to support farmers who choose to grow in an environmentally friendly and sustainable way. It's also something my family strongly believes in.

¹ See our [issue 1/2015](#) for more information about temperature in bread making.

"Good food depends almost entirely on good ingredients."
- Alice Waters



My selection of hard red spring wheat was made consciously.

Hard wheat is typically chosen for bread here in North America because it has a higher protein content than soft wheat, which is used primarily for cake and pastry flour. Red wheat lends a creamy reddish color to the dough (hence the name) and a wonderful red hue to the crust.

Having only milled a few times with white wheat I've found that the red variety has a slightly stronger flavor—not bitter, just a more pronounced flavor in general. Both of my wheat trials were performed on spring plantings and I will have to do further taste tests between spring and winter to determine which I prefer.

MILLING

One of the incredible things about the Grain-Maker is that it is able to mill flour at near room temperature. Keeping the temperature low is important when milling as it prevents the destruction of those important oils and nutrients we want to preserve. Smaller, motor-driven mills are much faster at milling flour but sacrifice that low temperature of the flour as it comes out of the mill.

Larger mills are able to offset this significant heat generation by utilizing massive grindstones that rotate at low revolutions per minute while still producing flour at a relatively fast pace. For the home baker there are several options for mills, hand operated and motor-driven alike, and some with incredible build quality to boot, but for me the GrainMaker was the right choice.

"I always start milling early in the morning. The house is still asleep and it's just me and my mill in the kitchen as the sun comes up."

I always start milling early in the morning. The house is still asleep and it's just me and my mill in the kitchen as the sun comes up.

I find it convenient to mill all the flour needed for the day's bake first, then build my levain with 100% fresh flour. Finally, the rest of the day is baking per usual. I will typically bake two loaves, sometimes four, and I can comfortably mill enough flour in the morning to cover them.

Before I start milling, I work out how fine I am going to mill the wheat berries on hand.

I can turn the dial at the front of the mill clockwise to head more towards a finer flour, or counterclockwise to get a more coarse grind. This turning action essentially moves the two stainless steel burrs closer or farther apart, respectively. I am still experimenting with varying levels of granularity, but currently I start by turning the dial until it is at a medium level and then I begin milling grain slowly with a handful of grain to start.

I turn the dial clockwise to go finer, inspecting the output at each turn. I've become attuned to the sound the mill makes and the vibration of the arm and handle when the grind is at just the right level to get the granularity I want.

When I first experimented with the mill, I used my whole wheat flour on hand as a guideline, placing the two side-by-side and inspecting the differences. My comparison results were obtained empirically, but by simply taking flour and pressing it between my fingers I can garner a surprising amount of data: How large are the bran particles? Does the flour cake and stick when squished? How does the flour fall when run through my fingers? All very tactile and visceral tests but that is how much of baking is, after all.

Using a manual mill is definitely not a fast process, but with the right music playing through my headphones, hand-milling becomes a very meditative process.

As I turn the crank it gives me time to step back from the hustle of the day and think about the upcoming bake: What am I going to test? What do I seek to learn? And maybe most importantly, how can I work this bread into each meal of the day?

With my bowl of freshly milled flour I'm then ready to build my levain and later in the day start mixing.



COUNTRY SOUR WITH FRESH MILLED FLOUR

Words and Photos: MAURIZIO LEO



I've been working on a formula that has a balance between enough fresh milled flour to really bring out the flavor, but also enough white flour to get a nice and lofty rise. The following produces some of the best tasting bread I've ever made and it is now my go-to when I plan to mill flour.

Overview

Total dough weight:	1900 g
Pre-fermented flour:	7%
Hydration:	84%
Yield:	2 x 950 g loaves

Levain Build

Ingredient	Quantity	Bakers' %
Mature stiff starter (at 65% hydration)	43g	50%
Fresh Milled Organic Great River Hard Red Spring Whole Wheat	66g	100%
Water at room temperature	43g	65%

Formula

Note: The baker's percentages listed below are with respect to the final dough ingredients and do not take into account the levain.

Target final dough temperature is 75°F (24°C).

Ingredient	Quantity	Bakers' %
Central Milling Organic Artisan Baker's Craft, Malted (~11.5% protein)	664g	70%
Fresh Milled Organic Great River Hard Red Spring Whole Wheat	189g	20%
Central Milling Organic Type 70	102g	10%
Water at 95°F	815g	85%
Fine sea salt	20g	2%
Mature stiff levain	143g	15%



Method

1. **Levain – 8:00 AM:** Build the levain in the morning after milling fresh flour. Store somewhere warm around 78-82°F (26-28°C) ambient.
2. **Autolyse – 11:00 AM:** Mix flour and water (reserve 50g water for mix, later) very well in a bowl and cover. Ensure all dry flour is hydrated.
Store near levain.
3. **Mix – 2:00 PM:** Using about 30g of the reserved water, incorporate levain build into autolyse and hand-mix thoroughly.
Slap and fold for 6 to 8 minutes until dough holds shape well. Place dough back into bowl and let rest for 5 minutes. Then, use the remaining water, if necessary or desired, to incorporate salt into mixture. The dough will initially break apart and then come back together.
Slap and fold an additional 3 to 6 minutes until dough starts to catch air and strength is built enough to keep dough relatively in shape on counter.
Transfer dough to a tub or thick-walled bowl for bulk fermentation.
4. **Bulk Fermentation – 2:20 PM:** At 80°F (27°C), bulk fermentation typically takes me somewhere between 3.5 and 4 hours. Watch the dough near the end—as I mentioned previously, fermentation can quickly get out of control.
Perform 4 sets of stretch and folds (each set is a stretch and fold at North, South, East & West), one every 30 minutes.
5. **Divide and Preshape – 6:20 PM:** Divide the dough into two masses, each scaled at 950 grams.
Lightly shape each mass into a round, cover with inverted bowl or moist towel, and let rest for 25 minutes.

6. **Shape – 6:45 PM:** Shape each mass into a boule or batard, whatever your preference may be.
Place into a banneton lightly dusted with white rice flour, or into a basket with no flour but lined with a cotton tea towel (if you want serious shine on the crust).
7. **Proof – 6:50 PM:** Retard the dough by placing it immediately into refrigerator at 40°F to 42°F (4-6°C) for 12 hours.
8. **Preheat oven – Next morning, 6:00 AM:** Preheat oven for 1.5 hours at 500°F (260°C).
9. **Bake - 7:30 AM:** Bake for 20 minutes at 500°F (260°C) with steam, and an additional 30 minutes at 450°F (230°C), until done to your liking.



The resulting crust is incredibly thin, crunchy and wonderfully colored. You can see how much shine is brought forward by using fresh milled flour—just an immense amount of enzymatic activity.

The crumb is soft and tender, it has a wonderfully complex flavor with a hint of sourness and a creamy hue throughout. The taste... Well, I've already spoken at length on the taste of this bread with fresh milled flour, it's just delicious.

ABOUT MAURIZIO

Maurizio Leo is a self-taught home baker that focuses on 100% naturally leavened sourdough. He holds a master's degree in computer science and is a creator of the SkyView iOS/Android app. When he's not writing code he's most likely in his kitchen milling flour, testing formulae and baking bread.

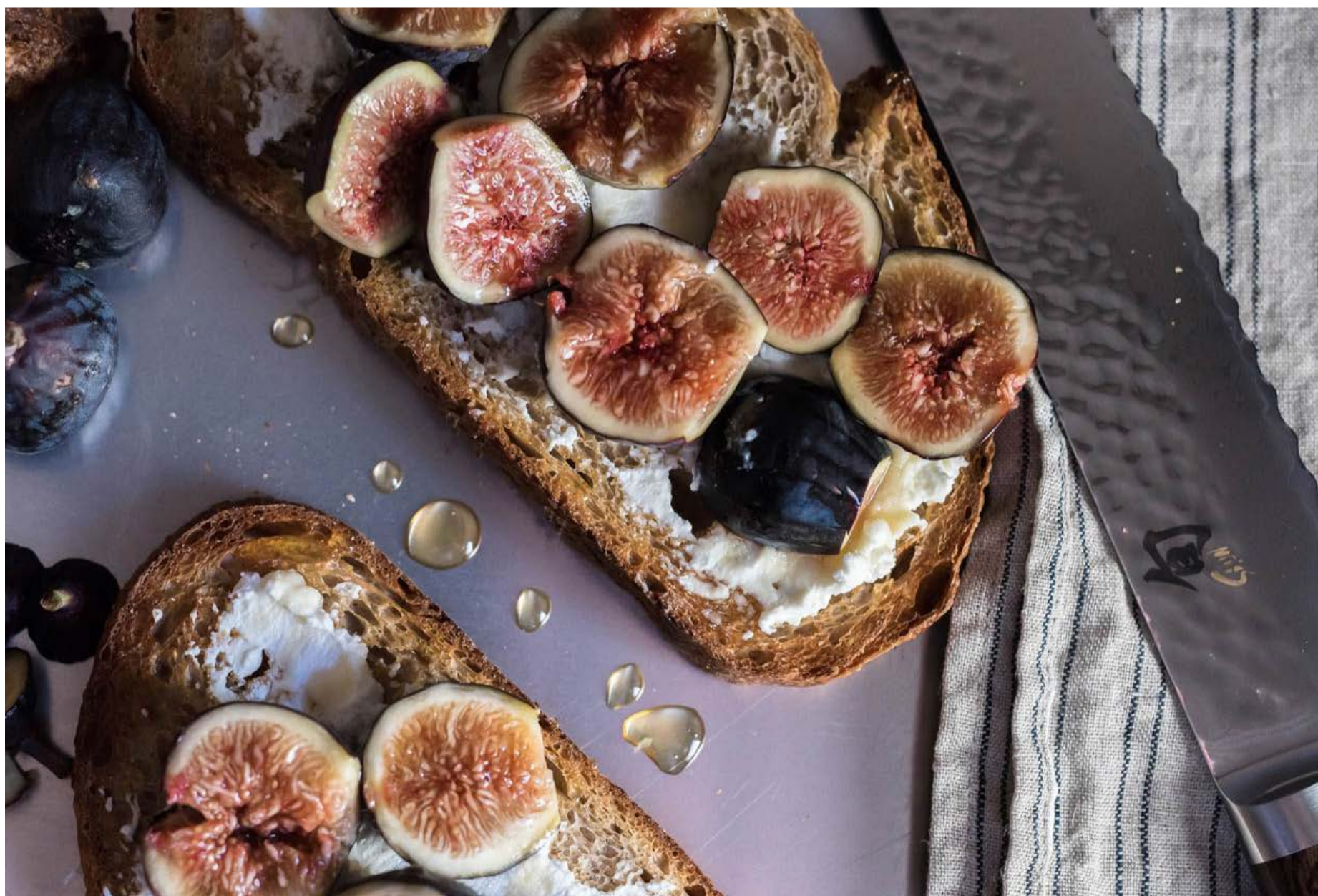
You can find more of his baking, instruction and never-ending search for the perfect sourdough at his site [The Perfect Loaf](#). You can also find him on [Instagram](#) and [Twitter](#).

PARTING WORDS

I've only just begun to scratch the surface of milling fresh flour at home, but thus far I'm extremely excited about the results. I bake bread that truly tastes vibrant and fresh, it has levels of flavor that I've never experienced with my sourdough.

The laborious act of hand-milling flour may not be possible, or desirable, for everyone but for me this part of the enjoyment, the transformation from seed to flour to bread—wonderful.

After tasting the results, I think my wife has finally accepted the large red beast into our kitchen, and my "crazy" status has been downgraded to "normal"—well as normal as one can be when he wakes before the sun rises to turn his kitchen into a flour mill.



WHAT'S NEXT?

And so, we have reached the end of yet another issue of Bread Magazine.

I hope you enjoyed the issue and are feeling inspired to bake some bread—maybe even right now?

The bread making adventure continues with still one more issue before we reach the end of the year.

The issue comes out right before Christmas, so I'm sure there'll be some holiday baking involved. And naturally, in the meanwhile, we'll keep posting interesting links and videos on our [Facebook](#) and [Tumblr](#) pages.

If you have ideas for the next issue, or other feedback, [let us know!](#)

As always, thank you for reading, and happy baking!

Jarkko Laine
Publisher



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