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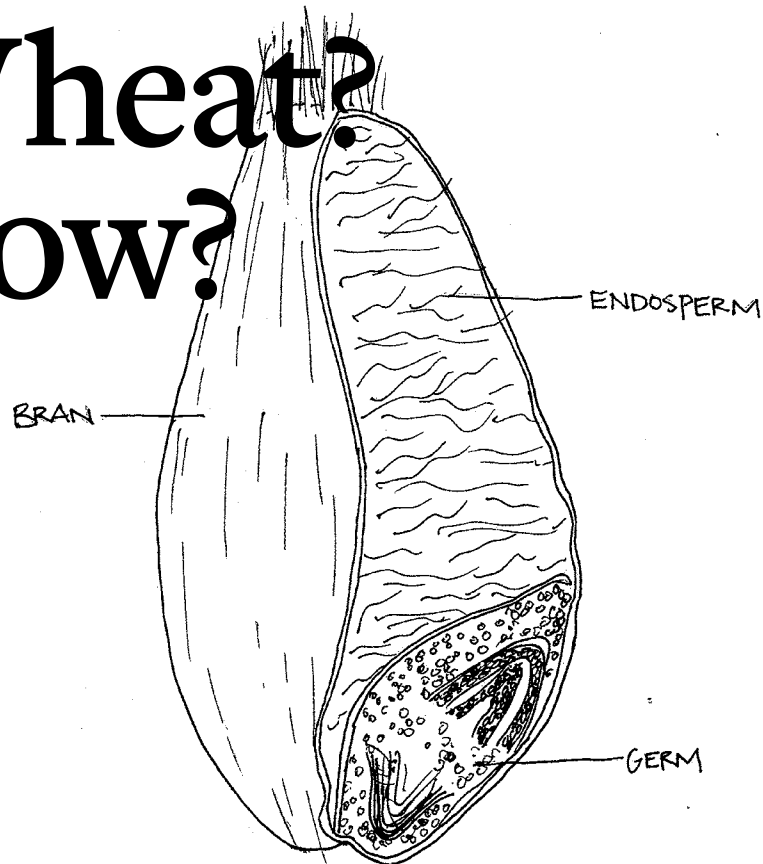
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Who? White? When? Wheat? How?



White wheat has me beat. At the moment I'm writing this (the last possible moment before I must print and bind this zine), I have more questions than answers about this particular category of common wheat. So I offer you a humble introduction and a promise to continue to investigate...

Here's one thing I know for sure: white wheat is not red. The outer layer of kernels of white wheat -- the bran -- is the color of sand on a Lake Michigan beach, not the rust color of red wheats. When you grind up white wheat to make flour, it looks white, just like "white flour." But most white flour is made from red wheat that had its bitter, nutty flakes of

bran sifted out (or it's been bleached with chlorine gas madness). Whole wheat flour made with white wheat has a milder, sweeter flavor than whole wheat flour made with red wheats.

White wheat can be categorized as hard or soft, which is determined by an ill-defined protein content range.

Generally, hard wheats are typically 10% protein or higher (used to develop stronger doughs for breads, noodles, crackers, etc.) while soft wheats are below 10% (used in cakes, pastries, biscuits, etc.).

Often, these distinctions aren't labelled on commercial packaging, but if you eat bread, pasta, ramen noodles, cake, cookies, and cereal, you've had plenty of each of these types of wheat. And if you bake at home, you've likely purchased different wheats; pastry and cake flours are typically made from soft white wheat, while all-purpose flour is made from hard red.

I've tried to get to the bottom of where white wheat originated and how, but for now I'll have to share a few nuggets I found in the many rabbit holes I burrowed down along the way.

Soft white wheat is the star ingredient in Kellogg's Mini Wheats and Nabisco's Triscuits. Kellogg's new "Open for Breakfast" website tells the stories of 4,000 acre soft white wheat farms in Michigan, close to the company's HQ. An excerpt from Triscuits product description: "We like to think of soft white winter wheat as a kind of cashmere of wheat because of its soft texture and delicious taste. It's what gives Triscuit its golden color, distinctive crunch and 25 grams of delicious whole grain goodness per serving."

Supposedly, white wheat was introduced to North America by Italian and Spanish missionaries in the late 1600s, under the classification *candéal flour*, which was used to make communion breads and crackers. It ended up in the northern Mexican state, Sonora, where it was used to make the first flour tortillas, which spread to New Mexico, Arizona, and Texas. Sobaqueros (arm-pitters) -- flour tortillas stretched by hand until they span the length of your arm, cooked over a dome-shaped griddle -- are a regional specialty in Sonora..

In the Japanese prefecture Kagawa, the home of the udon noodle, there's a white wheat reclamation underway. Before wheat production declined in the 1950s, fields of grain covered the town of Sanuki. They would be harvested, milled and sifted to make udon flour. But since the late 70s, they've depended on imported white wheat from Australia, which, according to some noodle makers and lovers, isn't as high quality and doesn't make primo flour. So there's a movement among small farmers and udon makers to grow a variety named *Sanuki no Yume* 2000 - Dream of Sanuki, developed in 2000. Kinoshita Flour Mills in Kagawa sells an udon flour made with 100% kagawa-grown wheat. They use a meticulous milling process to remove all the bran because, according to their website, "speck, a small piece of bran, would damage the taste and the food texture of the Udon."

Harvest Season



Around the middle of July, Thor Oechsner will harvest about 100 acres of soft white wheat. The crop takes up a small portion of the 1,200 acre organic farm in Newfield, New York where he grows red wheats, rye, corn, buckwheat, and soybeans.

In the weeks before harvest, Thor will be out scouting the white wheat fields for evidence of Fusarium head blight -- a fungal disease that can produce Vomitoxin (which can make us sick, as the name suggests). The plants are susceptible to the fungus when they're flowering, which is around mid-June at Oechsner Farms.

It's been a particularly rainy spring in Newfield this year, so Oechsner will walk the fields, looking out for the bleached heads evident of Fusarium blight. In an area that has a high incidence of blight, he'll crank up the air pressure in the combine to blow out the diseased kernels -- significantly lighter than the plump healthy grains -- as he harvests.¹

He has to wait for just the right moment to harvest, because white wheats have low sprouting resistance. If the grain isn't harvested during a small window of opportunity, especially under wet or humid conditions, the wheat kernels may break dormancy and start to germinate in the field. When this happens, enzymes within the kernel start to break down stored starch and protein, effectively eating into the structural components of the grain. Flour milled from grain sprouted in the field is wildly unstable, and very difficult to use in baking.²

Which is why Oechsner harvests, "As soon as it will go through the combine and not turn to mush." Meaning once the grains are dry and sturdy enough that they won't get crushed in the combine (and before they have a chance to even consider sprouting). Then, the harvested grain goes into a crop dryer, where it's dried at a low temperature before being bagged up and sent to malters and millers.

The finicky harvest requirements partly explains why white wheat is, "So on the out right now," says Oechsner. Red wheats tend to have higher sprout resistance, so many growers are switching.

But Oechsner is still growing it because people like it, he says -- especially the millers at Farmer Ground Flour (the farmer-owned mill in Trumansburg, NY that Oechsner co-founded), and the malters at New York Craft Malt, and brewers. And he's up for the challenge.

"I didn't get into this because it was easy."

1. Most wheats are moderately susceptible to Fusarium blight. On conventional farms it's common practice to spray the plants with fungicide when it's in the "boot stage" -- just as the head of grain becomes visible, peeking out of the top of the swelling leaf sheath. "For me as an organic grower, I basically have no defence except to have a good crop rotation," Oechsner says. In between seasons of crops that are susceptible to Fusarium, like corn and wheat, he'll plant "break crops" that aren't susceptible, like buckwheat. It's his best shot at minimizing devastation by the fungus.
2. In order to determine the quality of their harvest, farmers test the "falling number," which determines if their grain has started to germinate in the field. In a sprouting grain, the enzyme (Alpha-amylase) starts to break down starch, which is not a desirable situation, especially if you're trying to bake something delicious with the final product. To test the starchiness of the grain, it's ground into flour and mixed with water in a test tube. Then it's put into a shmancy machine that drops a plunger into the slurry and measures the time it takes for the plunger tip to reach the bottom of the test tube. If the slurry is thick -- nice and starchy -- the plunger will fall more slowly than if it's thin and watery. In general, bakers and millers look for grain with falling numbers close to 300 (seconds) or higher.

Fredrick Gfeller's Legacy

The white wheat we used to develop our recipes for this month's grain share started with a cross by a breeder in Canada in 1959. The Cereal Division at the Central Experimental Farm in Ottawa, Canada, had set out to improve the varieties of white wheat for the pastry industry, which meant the head plant breeder Fredrick Gfeller would focus on soft white wheat.

Gfeller crossed Genesee (released by Cornell University in 1951) with Washington #1 and an unnamed variety produced by Purdue University. "When you make a cross, the first generation has maximum variability," says plant breeder and professor Brian Fowler. "It takes five or six generations before you can get uniform lines." And you can only grow one generation of winter wheat per year, which means it took about six years for Gfeller and his team to develop a homozygous plant.

Fowler joined the Central Experimental Farm in 1969 as Gfeller was battling cancer and getting ready to retire. It was Fowler's first job -- he was 26. At that point, Gfeller's wheat was being grown under scientists' observation and analyzed based on yield, winter survival, lodging propensity (likelihood the stalks will fall over), bushel weight, protein percentage, and other qualities.

"We have tight registration requirements in Canada," says Fowler, "there's not a lot of room for error." A variety of wheat must be deemed as good or better quality than the existing dominant variety in order for it to be registered by the Canadian government and sold commercially (legally) across the country. It can take five years to thoroughly test and register a variety.

Gfeller died before the variety he'd spent more than 10 years developing was approved. Fowler was responsible for

completing the final paperwork to register the variety. He and the recommending committee decided to name the variety after the breeder: Fredrick Soft White Wheat.

It became farmers' most preferred variety and was the most widely grown winter wheat in Ontario for more than 10 years, according to Judith Fregeau-Reid, grain chemist at Agriculture and Agri-Food Canada. Fregeau-Reid says it isn't commonly grown in the region these days.

We discovered the variety through GrowNYC Grains, an organization that promotes, sells, and distributes local grain in the North East. The soft white wheat we purchased from them was grown by the farmers at Lakeview Organic Grains, who are keeping Fredrick Wheat in production near the Finger Lakes in New York.

We love Fredrick soft white wheat flour for the tender crumb, subtle sweetness and graham cracker flavor it gives baked goods, and the toasty grain flavors and aromas reminiscent of Special K cereal that come out when fermented in bread doughs. Along with roasty toasty burnt barley or rice, adding Fredrick wheat flour to a baguette formulation is one of our favorite twists on the classic baguette. The resulting loaves lend themselves particularly well to serving simply with grass-fed butter, funky, creamy, bloomy-rind cheeses, and whipped honeys with soft flavors of alfalfa, linden or meadowfoam.

FREDRICK'S BAGUETTES, START TO FINISH

Alex Bois

Note: Dough and poolish should be kept in a warm (ideally 75-83F) place. Timings will vary and be difficult to predict too far outside of this range.

Recipe makes 5x300g baguettes. If that is too many for you and your friends to devour, the same dough will make for an excellent pizza shell. It also serves as a good base to which to add ingredients, like roasted potatoes, garlic & herbs to make fougasse, a flatbread from the south of France.

To make the best possible baguettes, you will need a thick baking stone to place in your oven, as well as a method of creating a moist, steamy environment in your home oven during the first 10-15 minutes of bake time. Internet baking forums such as "The Fresh Loaf" have plenty of good recommendations on how to create this steam for your particular type of home oven without destroying it in the process, so please spend the time to do a bit of research before embarking on this quest!

In order to make a great baguette that also fits around your work/life schedule, you can make use of a poolish, a type of yeasted pre-ferment that contributes complex fermented grain flavors and aroma to bread, and allows yeast time to reproduce and adapt to a dough environment. You will also be finishing the fermentation of the dough in the refrigerator to allow the flexibility of shaping and baking the baguettes on your personal schedules instead of on the schedule of the bread.

1. Prepare your poolish

8-12 hours before beginning your final dough, mix together and leave to ripen in a warm (75-83F) location:

175g 'Fredrick' White Wheat Flour
175g Warm (90F) Water
2g Instant Yeast
3g Salt

A ripe poolish should be full of large, visible bubbles still actively bubbling, and have a sweet, fruity, boozy aroma.

2. Prepare your final dough

Combine the following in a large mixing bowl, alternately squeezing through the dough with your fingers and kneading until no dry clumps remain and dough becomes somewhat smooth and supple:

435g Bread Flour**
265g 'Fredrick' White Wheat Flour
450g Warm (90F) Water
15g Salt

All of your ripe poolish from Step 1

**We recommend a high-quality flour of 11-12.5% protein; King Arthur Bread or All-Purpose Flour or Central Milling Artisan Craft Flour fit the bill nicely here.

Transfer dough into a wide, oiled container, just deep enough to allow for roughly 75% volume expansion of dough.

3. Develop & bulk ferment dough.

Allow dough to ferment in warm area, giving dough a series of strengthening "stretch & folds"*** every 30 minutes, 4 times in total.

***To "stretch and fold", lift bulk of dough from middle and allow the weight of gravity to stretch it out, folding the stretched-out dough underneath the bulk of the dough. Repeat to form a taut packet of dough. Place dough 'packet' back into container with the newly created seams on bottom, weighed down by the rest of the dough.

After 1 hour 30 minutes of total bulk fermentation (30min before the 4th & final "stretch & fold"), move dough/ container to a refrigerator or walk-in.

Make sure to return dough to fridge after your 4th & final "stretch & fold". Allow to chill, ideally for 8-12, but up to 36 hours.

4. Cut dough into 300g pieces & shape from cold

We don't pre-shape at the bakery, instead taking care to scale dough into a roughly trapezoidal shape and form directly into baguettes. Feel free to follow the traditional approach of pre-shaping and resting for 30 minutes before shaping. Before forming into baguette shapes using your method of choice, use a flat, floured palm to firmly press each 300g piece of dough to 'de-gas' the largest bubbles of gas. Proof, seam side-up, on a linen lightly and evenly coated with flour or wheat bran.

5. Proof 1.5-2 hours

While you wait for your baguettes to proof, pre-heat your oven and baking stone to 500F.

Fully proofed baguettes are plump, have a stretched look on their seams, and when gently poked with a finger to a depth of 1/2", will retain an indent of roughly 1/4".

6. Bake roughly 20min at 500F on top of pre-heated baking stone.

Flip baguettes over onto a generously

floured, stiff/flat 'peel' and use a razor blade or very sharp knife to slash, at an angle to the surface of the baguette as you can manage, a ¼" deep cut down the length of each baguette. At home, I often use a thin, long, flat piece of plywood as my 'peel' to transfer a single baguette at a time onto my baking stone. A rimless cookie sheet works well if you'd like to transfer more than one baguette at a time to the oven.

Carefully slide the scored baguettes onto your baking stone. Use whatever internet method you think will not damage your home oven to create an initial blast of steam in the oven, and shut the door. After 15 minutes, open the oven door for 5

seconds to vent moisture. Remove baguettes from oven any time after 20 minutes when they have achieved your desired color. We prefer to remove when baguettes attain a russet color on their darkest areas, usually after around 22 minutes total.

7. Eat (after allowing to cool at least 20 minutes)

The best way to appreciate the unique flavor of Fredrick baguettes is to add a touch of salted butter and/or honey and eat while still slightly warm. When the baguettes start to stale, we love them toasted and dunked into a warm, funky dip like an anchovy-rich bagna cauda.

FRENCH TOAST (AMERICAN STYLE!)

Max Messex

White wheat flour adds a toasty cereal flavor and thickens the dredging batter, resulting in a thick, custardy slice of French Toast that lends itself to drowning in maple syrup.

Makes 8-10 servings

You'll Need:

4 Large eggs	2g Spice of your choice (we like cardamom, or our 'bread spice', a blend of caraway/pepper/
270g Milk	coriander/juniper/nigella/fennel
2g Vanilla extract	Hefty pinch of salt
40g 'Fredrick' White wheat flour	
40g White sugar	
2g Cinnamon	

Whisk the eggs, milk, and vanilla together. In a separate bowl, whisk the dry ingredients together. Slowly add the egg mixture to the dry ingredients, whisking as you go to prevent lumps.

Dredge ¾-inch thick slices of bread in the batter. For best absorption, submerge each slice and let sit for 10-20

minutes. Heat a skillet or flat pan to medium high, butter the pan and allow butter to brown slightly. Let batter drain off toast slightly before frying. Cook french toast for around 45-60 seconds a side, or until golden brown. Add a few pats of butter, cover in maple syrup and serve hot.

WHEATY BISCUIT

Sam DeGennaro

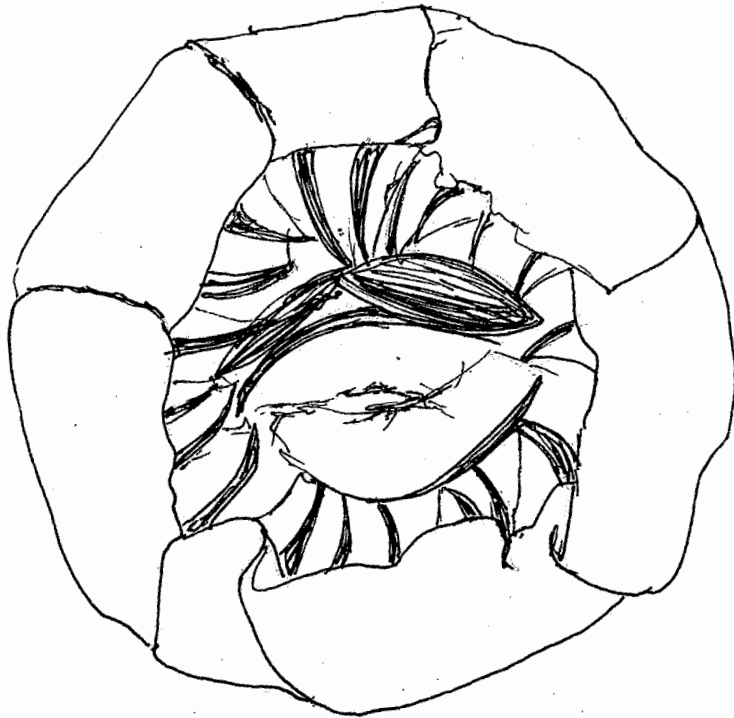
Makes 12 biscuits

You'll Need:

1068g 'Fredrick' White wheat flour	150g Lost Bread salted wheat starter (can be subbed out for
6g Baking soda	83 g extra wheat flour, 4 extra
24g Baking powder	grams salt, 63 extra grams milk)
20g Salt	360g Milk
28g Sugar	14g White vinegar
622g Butter, cubed	

In a medium bowl, whisk together flour, baking soda, baking powder, salt, and sugar. Rub or cut cubed butter into the dry mix like you would with pie dough (butter should wind up being slightly larger than pea-sized). In a separate bowl, whisk together remaining ingredients. Combine dry/butter mixture with wet mix until barely incorporated. You're looking for a shaggy, loosely held together dough.

Turn your dough out onto a clean, lightly floured surface and form into a rectangle. Roll out until dough is ¼ inch thick, then give it an envelope fold. Repeat two more times. Cut your rectangle into a 3x4 arrangement, yielding 12 biscuits. Let rest in the fridge for at least 1 hour before baking (can be frozen and baked to beautiful results). Bake in a 375 degree oven for 20-30 minutes.



SOFT WHEAT PIE DOH

Lex Miller

One of the most important rules for making any pie or tart dough: all of your ingredients must be cold! I usually scale out the dry ingredients in the bowl that I'm mixing in and put that in the fridge as well. This pie dough is super versatile -- you can use it for savory galettes for breakfast (fried egg anyone??) or for whole pies.

Makes two 6" galettes OR one full-sized pie

Doh

130g 'Fredrick' White wheat flour
4g Sugar
2g Salt
105g Butter, cubed
60g Ice water

Fillin'

350g Fruit of choice
25-30g Sugar (depends on how sweet your fruit is)
16g Corn starch
12g Lemon juice
Pinch of salt

To make the crust:

Combine flour, salt, and sugar in a mixing bowl. (You can use a stand mixer with a paddle attachment -- low speed only -- or mix by hand with a pastry blender.) Add cubed, cold butter and paddle on low until butter is distributed and most of the pieces appear to be about twice the size of a pea. You don't want super small pieces of butter because otherwise the dough won't be flaky. Drizzle in ice water (weigh this as your butter is mixing into the dry so it stays as cold as possible) and mix just until dough comes together to form a mass.

Turn onto a table and knead a few times to make sure everything is hydrated. Divide dough in half and roll into two balls. Press to form disks, wrap in plastic, and chill in the refrigerator for an hour (or freezer for 30 minutes) before rolling out. (The dough can be frozen for up to one week.)

To make the filling:

Whisk together sugar and cornstarch (because lumpy filling is not so tasty), then toss all the rest of your ingredients together.

To assemble: Roll out your refrigerated doughs to about 1/4" thickness. Place half of your fruit mixture in the center of each, fold the ends of the galette towards the center, leaving a little more than 2" of space open where your fruit is. Brush the top and sides of pie dough with egg wash (one egg, beaten), and bake for 25-30 minutes at 400* F, or until crust is golden brown.

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