



baking for biodiversity

a tiny book about grains
by katie gourley



Like you I
love love, life, the sweet smell
of things, the sky-blue
landscape of January days.

And my blood boils up
and I laugh through eyes
that have known the buds of tears.

I believe the world is beautiful
and that poetry, like bread, is for everyone.

And that my veins don't end in me
but in the unanimous blood
of those who struggle for life,
love,
little things,
landscape and bread,
the poetry of everyone.

-roque dalton(1935-1975)

translated by jack hirschman



know your seeds.
know your grains.
know your bread.
know your baker.
know your farmer.
know your miller.
know your lands.
know your food system.



introduction

I feel like I backed my way into the alternative grain movement from two directions. I arrived at an intersection where two separate but related parts of my life converged: my academic research into seed saving and food justice and my identity as a home and professional baker. Fresh out of urban planning school, I ran to learn more about heirloom grain agriculture because I was searching for a way to translate my interest in biodiversity, cultural traditions, ecological knowledge, and food sovereignty into a material practice; something I could do with my physical self and contribute to the physical world.

I bashfully admit: although I have been involved in local food and sustainable agriculture movements for a very long time, until recently, the flours I used in my baking were in the background. I directed my attention at using seasonal fruits, vegetables, and dairy from farmers I could name. It didn't occur to me that even though by mass I used more flour than most other ingredients, I hadn't the slightest idea about the journey those grains took to get from seed to soil to me, let alone who milled them and how. I was overlooking something so huge. Since becoming involved in movements to revitalize artisan whole grains, baking has become something altogether different for me. Baking now means telling a story of how flour is cultural heritage; how pastry is political; how bread is agricultural; and how our daily sustenance has just as much to do with soil health, community resilience, and beauty-as-a-human-right, as it does with bookending a sandwich and filling our bellies.

This zine is, in part, the result of three months I spent as an artist-in-residence at the Sitka Center for Arts and Ecology at the Oregon Coast. During this time, I lived alone in a tiny cabin in the woods, surrendering myself to my roots as an Oregonian and trying my best to learn from the natural world around me. I did this while researching the history of grain production, milling, and the social and economic transformation of our daily breads and baking whole grain, naturally leavened breads for my surrounding community. I also met with and baked with some of the many farmers, millers, bakers, and food activists on the frontlines of a grain revolution in the Pacific Northwest. I created this zine not to be a comprehensive or exhaustive resource, but to be one part of my small contribution to the tapestry being woven into a whole grain baking revolution. I am merely at the base of the mountain, looking up to find how I can share, create, and reflect on the intersection of baking, food culture, agriculture, biodiversity, and justice.

With this tiny book I invite you to share a moment of interest in food that connects you to the land and that reminds you that you are part of a community that is more than just human. I am excited to continue critiquing and celebrating the labor and love involved in the life-sustaining craft of the community baker. I am here alongside you fellow grain-nerds, bake-a-holics, and bread heroes as we all try to better understand the scope of human relationships to food and the natural world.

As seems to always happen to me when I set out on a project framed by big questions, I do not walk away with answers, but instead with a happy reminder of the power (however uncomfortable, unwieldy and overwhelming) of the big questions that surface when we dare to demand more from the world around us.



let's bake the world we want to live in

When I ask myself “why baking?” it comes down to the same answer I have for “why anything?” It is the basic fact that we are all physically and spiritually dependent on one another. The act of transforming the natural products of the earth into edible sustenance is one of the most visceral ways we are reminded of this dependence. I bake because we are fighting the same fight as seed savers, as sustainable farmers, as front-line food justice organizers. And we all need each other. I think that our staple foods should be beautiful foods, and should be enjoyed by *all* alongside art, landscape, poetry, music, cinema, biology, and the endless nitty-gritty, bumpy, sometimes-ugly sometimes-beautiful nuances that make us alive.

I am not here to stand on a soapbox and say that everyone should bake, but rather to ask: how can we inform and influence those who do bake and how can we relate differently to our ingredients, land, and the very act of baking? These questions help us work to dismantle colonial, monoculture mindsets.

my baking manifesto

I bake to know the world. I bake to change the world. I bake to change myself. I bake to make gratitude into something material. I bake to make a dream a reality. I bake to try to find my culture. I bake to wonder. I bake to say thank you. I bake to ask for permission. And, I bake to ask the land if I am loving it right.

I bake because:

The liberation of humans and nature is intrinsically bound.

Modeling care is resistance.

Asking us to think about roots and soil while eating toast is radicalism.

a growing grain movement

I think we need to start thinking of baking as an agricultural act. For a long time, flour has been treated as an anonymous white powder; merely an ingredient on the shelves. Flour is present in our baked goods but in the background of our minds. There are many reasons for this fact, but grains have been one of the last players invited into the local food movement. However, a revolution is stirring. More and more bakers, along with growers, processors, and eaters are standing up to say we cannot continue to ignore grains in local and regional food movements, nor in collective struggles for climate action, nor in the demand for global food sovereignty.



The reality is that the kinds of flours I talk about in this zine do not fit within our current industrial food system. They are not always readily available and there are many structural barriers facing farmers who want to grow them, millers who want to process them, and bakers who want to utilize them. This movement is not just about delicious breads and pastries and fun food communities – although these are SO important too. This is about participating in systems change. Soil health. Social solidarity. Healing traumas. Circular economies. Cultural memory. Rethinking late stage capitalism. This is about rewriting the narrative of how we exist in place and how we relate to the landscapes we are guests on.

We live in a time of pretty unsettling threats to our global agro-biodiversity (aka the number of varieties of food crops in our soils and on our plates). While there are over 30,000 known edible plant species, only 30 of those plants feed the world, and about 75% of our calories comes from just 12 plants (and 5 animals). Just 5 cereal plants alone provide 60% of the world's energy intake. In May 2019, the UN released a report on biodiversity that found that 1 million plants and animal species are facing extinction. This loss is a threat to our ability to withstand climate change, leaving our food systems vulnerable to unpredictable weather conditions and disease outbreaks (think Irish potato famine), and is a threat to the survival of the traditional dishes, customs, and recipes that form the beautiful foundation of our diverse personal identities, cultures, and communities.

What is the role of baking in biodiversity conservation? This is a philosophical question (one that keeps me awake at night) but it is also a very material concern.

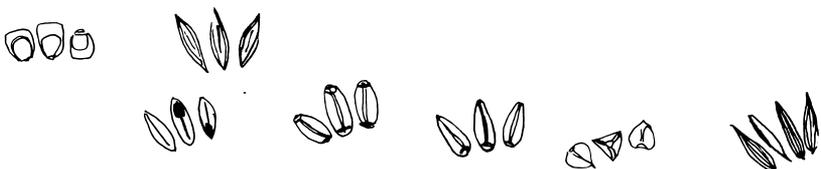
As important as it is to source organic fruits and vegetables from our local farmers, it is also absolutely essential that we move towards a place-based way of thinking about our grains. This is done by supporting the farmers, millers, bakers, and maltsters, brewers, and distillers working to restore non-commodity regional grain economies. I am not usually a numbers person, but the numbers about global grains provide enough of a wake up call for anyone to reinforce this statement. Commodity wheat is grown on more hectares of land than any other food crop in the world. World trade in commodity wheat is more than in any other agricultural product. Wheat can be seen as reflection of the bigger overall story of our industrialized food system and all its fundamental flaws.

The mindset of baking for biodiversity can (and must) be applied widely to thinking about every category of our ingredients, including the dairy, sweeteners, spices, and produce we use to bake (topics for future zines, I promise).

Some very incomplete notes on the history of commodity wheat:

Currently, the majority of U.S.. produced grains and beans are grown for anonymous global commodity markets. The word commodity describes a basic, unimproved good that is uniform enough to be directly interchangeable with any other goods of the same type, regardless of origin. Things like gold and crude oil are commodities. Since the early/mid 1900s, wheat has also become treated as a commodity, rather than as a staple food source. Commodities are traded globally, shipped around the world, and their market is dictated by speculators who place bets on whether their price will rise or fall. As noted in an episode of the Farmerama Podcast, host Abby Rose says this process “turns food into poker chips. Speculators have no direct relationship with the thing they are betting on.”

Regional flours started to disappear during the advent of industrial agriculture and the wide-reaching impacts of the Green Revolution. The Green Revolution occurred in the 1950s and 60s, led by Norman Borlaug and (very long story short) radically transformed agriculture forever, giving rise to high yielding hybridized seeds and increased use of inputs like chemical fertilizers and intensive irrigation, all with the single goal of increasing efficiency and yield with no regard for the health



of soils, human nutrition, or the cultural sovereignty and dignity of agricultural communities. What was left was flours milled from nutrient-poor wheat that had been bred to be dependent on high-chemical inputs.

Perhaps second only to the The Green Revolution, the shift from traditional stone mills powered by water and wind to industrial roller mills is one of the most influential moments in the history of how our daily breads have transformed. The switch to industrialized and mechanized processing immediately altered the experience of grains and flour. Before 1900 most towns had their own mill, which served a crucial role in a local economy and food system. Local stone mills started to disappear with the advent of the roller mill, which first appeared in Budapest in 1839. It had the ability to divide a wheat kernel's endosperm from the bran and germ, which were then discarded. This process was a fast, efficient method of producing white flour at a low cost. Cheap, shippable, indefinitely storable, and pest-free flour – what's not to love? Well, it also meant flour stripped of all vital nutrients and flavor. In fact, in the 1940s, processed flour was found to be so nutritionally-void that producers started reintroducing synthetic iron and B vitamins (both of which are naturally present in the bran and germ in the first place). Just take a look, flour at the grocery store has its own ingredient list. An ingredient with an ingredient list! That is sort of like if a head of broccoli had an ingredient list on the back. From high end restaurants to home pantries, industrial white flour is still by far the most common way we eat wheat. In 1840 there were 23,000 mills across the country, today there are fewer than 200 total. Now 64% of the flour market is controlled by just 4 massive corporate millers, and those bags of flour you see in the grocery store are filled with grains from random farms mixed together.

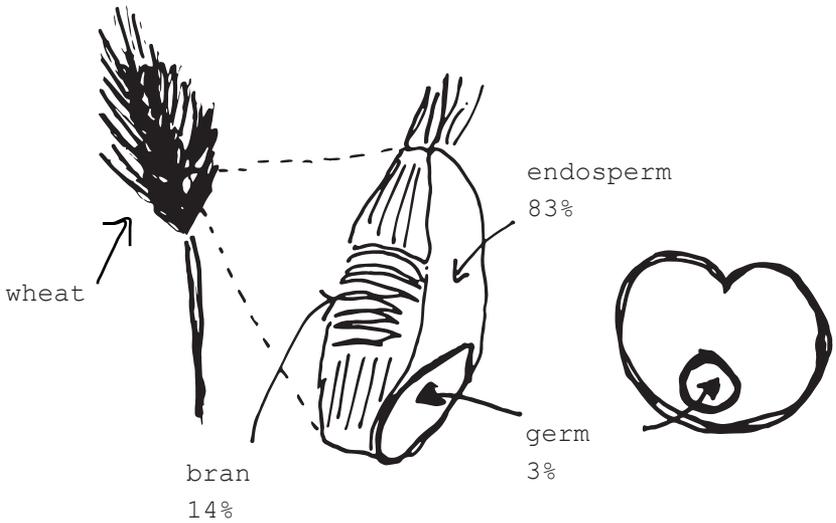
Luckily, more and more attention is being given to the economic and agronomic benefits of non-commodity wheat. A groundswell of international action is being taken to de-commodify wheat and other grains by restoring diversity and regenerative growing practices. Growing these kinds of grains is incredibly risky business for a farmer living under capitalism. They are usually lower yielding, and require hard-to-obtain technical knowledge as well as expensive machinery and processing infrastructure. This work is fueled by passion and care. This work is also significantly carried by immigrant, refugee and Indigenous communities who have stewarded seed stories and genetic diversity along with traditional ecological knowledge. This work requires our partnership as bakers celebrating biodiversity. By banding together to demand alternatives to the industrial white flour bread system, we can challenge expectations, increase diversity in our diets, and redefine sustainable regional grain economies.

There are many reasons to care about regional whole grains as a baker.
Some of them include:

- Grain crops (and pseudo-cereals) are steeped in the stories of the people and lands that they come from
- Certain cultivars of wheat and other grains have longer and stronger root systems which help build healthy soil and sequester carbon back into the ground (THAT IS A BIG DEAL!)
- Those long roots are also better at absorbing and circulating nutrients into the kernels we eventually eat, which means our bodies benefit from all that goodness
- Maintaining agro-biodiversity increases local chances of resilience in the face of climate change and threats to global food security
- This one's EASY: your stuff will taste way better!



anatomy of a grain



When you see the term 'unrefined' in relation to flour it means the bran and germ haven't been removed....

This means the flour still has all the nutrients and oils!

This also means the flour is highly perishable. So use whole grain flours within two months of milling and store them in the fridge/freezer to keep them fresh!

What lives in the bran and germ?

- B vitamins
- minerals
- fiber
- protein
- thiamine
- vitamin E
- folate
- healthy fats
- antioxidants

a grainy glossary

terroir

More often associated with the wine industry, the word *terroir* is appearing in more conversations about grains and bread. *Terroir* describes the relationship between food and place and refers to the idea that food has specific qualities influenced by a sense of place. From the people who tend to it, the minerals in specific soils, to the local micro-climates in an area, these factors all influence a food's taste, texture, smell, and overall quality. 'Landrace' a term often used in close relation to discussions of *terroir*. A landrace is a population of domesticated plants that have adapted to their natural environment over a long period of time. Landraces are genetically and physically more diverse and have personalities that differs from zip code to zip code. This makes them stand in resistance to the industrialization, artificial uniformity of today's commercial wheat market.

ancient grains

This term can get a bit confusing, because there is no official definition of what makes a grain "ancient." As the Whole Grains Council states: "All whole grains in the larger sense are 'ancient' they all can trace their roots back to the beginnings of time." However, ancient grains are typically referring to those that have remained unchanged over the last several hundred years. This list typically includes both landraces as well as 'pre-wheat' cereals such as einkorn, emmer and spelt.

'heritage / heirloom grains'

There is also no official or standard definition of heritage or heirloom when it comes to grains. It usually refers to varieties or cultivars that have existed for more than 50 years. This still may include hybrids that emerged following the advent of plant genetics in the early 1900s. Many heritage varieties were abandoned by industrial agriculture in search of higher yields and more uniformity, especially during the Green Revolution.

some technical flour terms for all you NERDS

ash

This indicates the mineral content of flour after milling. Flour with higher amounts of bran and germ have a higher ash content which is directly related to extraction number (see below).

extraction

This is a measure of how much flour is extracted from the mill given how much grain went in (the total weight of grain – how much bran/germ is sifted out = extraction number). True “whole wheat” is 100% extraction.

falling number

Measures the enzyme activity of ‘alpha amylase’. A high falling number indicates a low enzyme activity, which means slower conversion of starches into sugars aka: slower fermentation.

milling

Next to the actual grain variety, milling method is the most significant influence on a flour’s flavor and nutritional profile. Milling is done either by a roller mill, stone mill, or hammer mill. Nowadays, industrialized flour is almost exclusively produced by roller mills which crush grains in high-heat motion, sift the bran and germ out then mill it again. In stone milling processes both bran and germ remain in the flour. Some bran may be sifted out for a finer texture but the germ and all its nutrient-rich oils remain present.

some types of flour

all-purpose

This the most ubiquitous and commonly found type of flour (but let's work on changing that!). AP flour has a relatively high percentage of gluten and is mostly comprised of starchy endosperm.

bread flour

Bread flour is higher in protein and better at forming 'strong' dough. This flour is usually 75% or lower extraction in order to produce a more elastic matrix of gluten in bread baking. Bread flours are usually milled from hard spring wheat varieties.

pastry flour

Typically milled from low protein soft winter wheat. Pastry flour is best for use in cakes and cookies that require a more delicate crumb and a lower protein content.

sifted whole grain flour

Often also called 'high extraction flour.' This term refers to flour that has had some of the large particles removed by sifting stone ground grains. This means that the fiber and nutritious parts of the grains that have been released by being crushed whole still remain. A sifted flour option allows you to get the nutrition and flavor of whole grain but a produces an end product that can more easily do the job of an all-purpose flour. Sifted flours (which you will often seen labeled as something like AP85 or T200) can be used in places you would normally use all-purpose flour or in a combination with whole grain flour to lighten up a dough. Is sifted flour the best of both worlds? I think so.

whole wheat flour

Refers to wheat flour made from the whole grain kernel. Be skeptical of this term on product labels, according to the USDA only 51% of a product needs to be whole grain in order to be labeled as such, and most whole wheat flour on grocery shelves is just white flour with some bran added back in. Look for 100% stone ground (or even better find someone milling locally!)

some (not all) grains to get to know

barley



Barley is one of the oldest cultivated grains. For thousands of years it formed an important part of human nutrition. It likely arrived in North America via the Columbian Exchange in the 1400s. Barley has a long history as symbol of power and value. For example, in ancient Egypt mummies were buried with necklaces made of barley and in 1324 Edward II of England declared that the standard unit of measurement (the inch) was equal to “three grains of barley dry and round placed end to end lengthwise.” Despite this rich cultural and culinary significance, barley has all but disappeared from most cultural lexicons as a food source.

Barley can be used in the kitchen as a whole grain or flour. Most commonly, it is found in pearled form. This is whole grain barley that has had the outer hull and bran removed in a steaming process meaning most of the nutrients are destroyed. If you are working with barley, try to find “hulless” varieties. As a flour, it has a smooth and soft texture and is extremely sweet and nutty in flavor. It is easily substituted in recipes for baked goods like cookies, scones, muffins, cakes, and quick breads. However, because barley gluten does not have the strength and elasticity of wheat gluten, it is best mixed with other wheat flours for sourdough or yeast-leavened doughs. Barley is high in antioxidants, vitamins, and minerals and due to the presence of a soluble fiber in the endosperm called beta-glucan, barley is much higher in fiber than refined flours (barley is 17-30% fiber whereas brown rice is 3%). Visit barleyworld.org for more information on bringing barley back.

buckwheat



Buckwheat is one of my absolute favorite grains. The secret is: buckwheat is not actually a grain. *Fagopyrum esculentum* is a bee-pollinated broadleaf plant related to rhubarb known as a ‘pseudo-cereal.’ The plant produces small triangular seeds, commonly eaten whole as porridge (raw, the seed is called “groats”; toasted, it is called “kasha”) or ground into flour for baking. The buckwheat plant is a hardy cover crop that thrives in cold, moist conditions (making it great for the Pacific Northwest) and produces pretty white or ruby-colored flowers. Buckwheat is a very resilient crop, meaning it grows well without the use of intensive pesticides and its long root systems act as a soil conditioner. Another thing I love about the buckwheat plant is that it attracts beneficial pollinators. The word “buckwheat” comes from the Dutch word *Buchweizen* or “beech wheat” because buckwheat seeds were thought to resemble a mini beech tree nut.

Buckwheat is most common in pancakes, soba noodles, and crepes but I think it should be common everywhere! As a flour it has a deep, nutty flavor, a sandy texture, and a dark color which produces visually-stunning baked goods ranging from speckled blue-grey to nearly black (perfect for spooky Halloween season baking). Buckwheat is nutrient-dense and is gluten-free. It contains high levels of fiber, protein, niacin, potassium, phosphorus, iron, calcium, and vitamin B. The protein present in the plant super bio-available because it contains all of the essential amino acids.

Pairs with: chocolate, nuts, honey, strong spices, and sweet/tart fruits like apples, rhubarb, and cherries.

CORN



If ever there was a grain that represented the layered interconnections of politics, sovereignty, spirituality, ecology, and economics, it is corn. This grain is such a fertile topic that I can hardly do it any justice in a zine. Entire worldviews and cosmologies are built around the foundational relationship between humans and corn. I'll leave it to some words from plant ecologist, writer and Indigenous environmentalist, Robin Wall Kimmerer to touch upon the depths of meaning: "When corn is called 'Wife of the Sun' or 'Mother of all Things' we remember that the kernels are not just 'stuff' but a being created of light and air and water, the inorganic brought to life in vision of sky and earth so that we ourselves may have life." (Excerpt from her essay in Emergence Magazine "Corn Tastes Better on the Honor System")

While corn has an incredibly beautiful identity, it also represents some of the darkest corners of our industrial agricultural system. Less than 10% of US corn gets to a table, the corn grown in giant monoculture fields across the country primarily goes into animal feed, plastic, and fuel products and corn uses more natural resources than any other crop today. The corn that does end up for consumption by humans? It is mostly in the form of corn syrup and cornstarch.

Working to change our relationships to regional corn flours, as you might imagine, has incredible implications for sustainable agriculture and cultural sovereignty. Indigenous leaders around the world are charting a course that must be followed for how to restore a right relationship to place through respectful corn and seed politics. Check out the work of organizations like the Indigenous Seed Keepers Network to learn more and get involved.

Use dried corn of varying coarseness to make a world of tasty things including masa, polenta cornbread, tortillas, grits, or a variety of pastries. Corn flour is powdery, mild, sweet, bitter, warm and good in sweet and savory applications.

einkorn



Triticum Monococcum, translated as ‘single grain’ is considered the oldest cultivated cereal grass ever planted intentionally by farmers. Einkorn has 30% more protein and 15% less starch than modern wheat. It is high in Vitamin B, iron and minerals. It has a grassy, nutty, delicate taste and is low gluten forming. Einkorn has typically been hard to find and relatively expensive, but more attention is now being directed at increasing the accessibility of this ancient grain, especially because it has been shown to be more easily digestible for many people with gluten sensitivities.

emmer



This is the original wild wheat that we owe our modern grain agriculture to. Appearing long ago as a spontaneous hybrid of wheat and goat grass, emmer is an ancient, hard wheat, used commonly for pastas as it is high in protein. Selective breeding of emmer is what led to durum wheat.

oats



In Samuel Johnson’s 1755 dictionary, oats are defined as: “A grain, which in England is generally given to horses, but in Scotland appears to support the people.” I am captivated by the beauty of oats. Fresh oats are incredibly flavorful and packed with nutrients including phosphorus, thiamine, magnesium and zinc along with blood sugar regulating properties and unique digestive support from fibers known as beta-glucans which slow digestion, increase satiety, and suppress appetite. Oats have so many uses in baking that I could fill pages and pages if I were to try list them, from porridges, cookies, cakes, breads, milks, and so on! Oats are considered a small grains, along with winter and spring wheat, winter and spring barley, and rye, all of which play an important role in crop rotations on many farms. Oats tolerate acid or poorly drained soils better than wheat or barley do. If you’re looking for a wacky rabbit hole to fall down on the internet, might I recommend researching the historical origins of granola.

rye



Although it can be a divisive grain (you either love or hate it), I think we can all agree rye is having its renaissance moment. Rye has a scrappy history that I love, it began its life as a weed that contaminated wheat fields. But because it can be grown in poorer soils, with less sun, more moisture, and in higher altitudes than wheat, it has carried forward an honorable legacy of resilience and survival in the face of struggle. This cereal grain that has been grown for millennia has a deep cultural history, dripping with tradition and class stigma. For centuries, rye breads were

associated with peasant classes and were left by the wayside in many of the newer artisan bread movements. Yet, rye is deeply rooted and continuously celebrated in Nordic cultures where this resilient crop withstands extreme northern climates. In the old days in Iceland rye dough was sealed and baked underground using steam from geothermal springs underground which I think is very neat! Julia Moskin writes in a 2017 *NY Times Cooking* article: “Rye breads from Scandinavia are bumpy, nutty, and fragrant. They can be as dark as chocolate cake and as spicy as gingerbread. They are often powerfully sour and even more powerfully delicious.” Rye often carries a (I would argue false) reputation for being hard to bake with. I think this is also worthwhile to note this quote (again from that same article): “People think they don’t like rye, but my theory is that they just don’t like caraway.” Do with that info what you will.

Pairs with: dates, maple, chocolate, ginger, deep warming spices, apples & apple cider, stone fruits, caraway, and sour dairy like crème fraîche.



Spelt is an ancient variety of wheat, and like einkorn is one of the earliest domesticated grains in the world. The spelt grains we eat today have remained unchanged since Biblical times. Spelt is a member of the farro family and was originally cultivated in what is now Iran and introduced into the US in the 1890s. This ancient grain is one of the most popular and easy-to-find due to its early re-introduction into German and Austrian artisan baking. Spelt is a beautiful, slender grain the color of copper with a mild sweetness and nutty flavor. Spelt flour has a much lower gluten content, and in fact an entirely different molecular make-up than the gluten in modern wheat. It also is higher in protein and fiber content than modern wheat cultivars. It has been shown to be more digestible by some people with gluten sensitivity (although this is not the case with Celiac and other diseases causing severe gluten intolerance). I think there is a weird ‘crunchy granola hippy’ stigma placed on the concept of spelt that is similar to people’s reaction to the word “carob” but I don’t agree. I think spelt is a low-hanging fruit for anyone looking to switch to whole grain baking. It is insanely versatile and easy to work with. And it is so tasty! If you can’t tell, I am a huge spelt fan-girl.

wheat



Wheat is by far the most popular and well-known grain for baking and it contains universes. Wheat can be divided into categories based on its physical and growing characteristics: kernel texture (soft/hard), kernel color (red/white) and seasonality (winter/spring). Hard red spring wheats are highest in protein and have medium-strong gluten, and are commonly used for yeast breads and hard rolls. Hard red winter wheats have the strongest gluten and are used primarily for pan breads and buns. Soft red winter wheats have medium protein and weak gluten great for flat breads, pastries, and crackers. Soft winter and spring white wheat is commonly used for pastries, noodles, and batters. High protein and strong gluten durum wheat are preferred for pastas.

The loss of wheat biodiversity is striking. There are over 200,000 varieties of wheat, but only a few genetic lines are in cultivation to feed the world today. However, many farmers are counteracting this by revitalizing saved seeds from ancient varieties, many of which have been dormant in gene banks around the world.

I highly encourage you to explore and experiment with as many diverse wheat cultivars as you can get your hands on. You would never expect the worlds that will open up to you once you do so. A word to the wise: some heirloom wheat cultivars have weaker gluten-forming abilities than others so if you are baking bread (as opposed to pastry) some varieties with a strong profile include: Turkey Red, Red Fife, Oland, Charcoal, Marquis, and Bordeaux.

"Eating with the fullest pleasure,
pleasure, that is, that does not depend
on ignorance, is perhaps the profoundest
enactment of our connection with the
world."

-wendell berry

some tips on whole grain baking

Once you start baking with whole grains, you will quickly learn that your flour itself becomes a major source flavor in your recipes. This means that you can sometimes adopt a 'less is more' attitude and rely less on things like sugar to provide flavor. On the flip side, whole grains also open a world of possible combinations with spices, fruits and vegetables, and sources of fats. Each grain provides a distinct identify that pairs well with other complimentary elements; for example, whole grain rye pairs well with chocolate, the earthy, texture of buckwheat goes well with tart fruits like raspberries, and fresh whole wheat has a slight bitter taste that goes well with sweet fruits and warming spices.

Most of your favorite recipes can be adapted to incorporate whole grains.

Here are a few tips and tricks to get started:

- In recipes like scones, cookies, quick breads and cakes, whole grain can more easily replace all of the flour. In breads and yeast-leavened doughs, easily substitute up to 50% of the all-purpose flour in a recipe without making other adjustments.
- Hydration matters! The bran and germ in whole grain flours are 'thirsty' and can absorb a lot more moisture than refined white flour. When altering some recipes, you may need to add additional liquid to account this You may also want to let batters made using whole grains rest for a some time before baking so they can fully hydrate, resulting in a better texture.
- Buy whole grain flours in small batches, use them quickly and store them in the refrigerator or freezer.
- Experiment! The best way to get familiar with the diversity of whole grains is to experience the range of flavors, textures, aromas & stories they bring to a dish. Touch, smell, and taste different flours. Rub it between your fingers and get intimate with it. This may feel silly at first. Keep doing it.
- Adjust your expectations. Breads, scones, cookies, and cakes made with whole grains simply will not look the same as those made with refined white flour. This can take some getting used to and requires adjusting assumptions of what the final product will look like. **Whole grain funkiness is beautiful!**

"Home and commercial bakers are in the best position to steer change by supporting farmers who grow heirlooms."

-sarah owens



THE RECIPES

These recipes are the products of my time running a one-woman community supported microbakery (CSB) out of a tiny cabin in the woods. This collection is by no means meant to be comprehensive nor an exhaustive source of whole grain knowledge. Rather, these recipes are my brief experiences baking in a particular place, at a particular time, and telling a particular story. This is a mix of original recipes, those borrowed with gratitude from cookbooks old and new, and those brought into my life via whispers and murmurs from the kitchens of others.

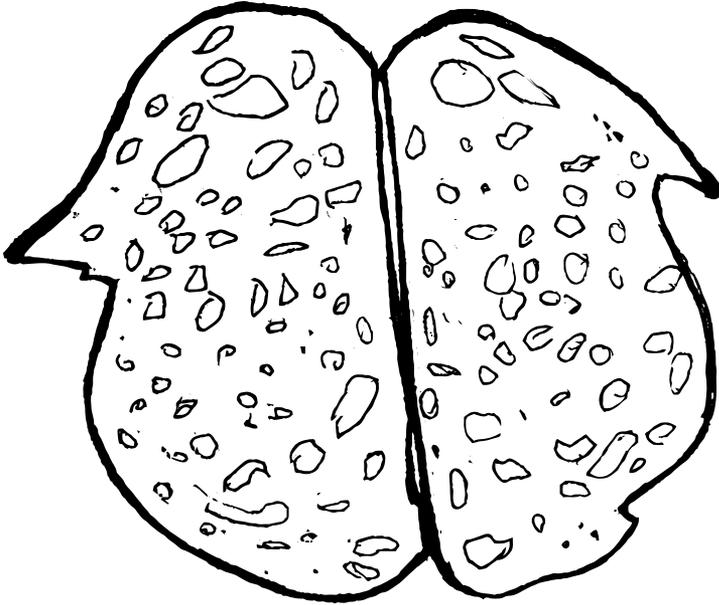
These are not necessarily the most precise recipes you'll ever read and are not intended to be followed as dogma. They are here to spark your imagination, to invite you to play, and to get you excited about exploring the flavors, textures, soils, and emotions of local whole grains.

A lot of these recipes are given in metric measurements. If I can give only one piece of advice about baking, especially with whole grain flours: get yourself a kitchen scale! It does not have to be fancy or expensive, but it will make a difference.

"No one who cooks, cooks alone. Even at her most solitary, a cook in the kitchen is surrounded by generations of cooks past, the advice and menus of cooks present, the wisdom of cookbook writers."

-laurie colwin

SOURDOUGH BREAD



I don't mean to sound dramatic, but baking sourdough entirely changed my life. Instead of what I thought would simply be a new skill as a baker, sourdough has made me reflect on what it means to exist in community and has given me an opportunity to regain a sense of reverence for the wild and natural world. It is a process that requires active care, a suspension of ego, an exercise in patience, and a humble surrender.

This section assumes you have familiarity with using sourdough as natural leavening and at least some comfort with the basics of baking artisan bread. If you are totally new to creating and maintaining a sourdough starter or have never baked bread, start off by doing some fun research into the many exciting sourdough resources available out there in print and on the internet. Some great places to get started are listed in the recommended reading section at the end of this zine.

There are millions of ways to go about making and maintaining sourdough and even more recipes, methods, myths, lores, and "I swear by it" techniques out there. If you have learned a different way than I describe here, that is very cool too!

a sample home baking schedule

Make sure your starter is refreshed, active and bubbly when you begin the process described below. Depending on the strength and age of your starter, the temperature of your kitchen, and how long it has been since you've fed it this may take 2-4 rounds of feeding.

- Friday night: feed your starter and leave her out on the counter
- Saturday morning (8am): build your levain
- Saturday late afternoon (~4pm, depending on temperature, what flours you use in levain, etc): mix your dough
- Saturday evening/night (5pm): bulk fermentation (stretch and folds)
- Saturday night: 10pm or sometimes 9pm, sometimes midnight): divide and shape
- Saturday overnight: place your dough in the refrigerator for cold fermentation
- Sunday morning: preheat your oven and bake!
- Sunday mid-morning: wait impatiently for your loaves to cool before slicing
- also Sunday mid-morning: lose patience, smear some butter, eat.

a basic sourdough process

feeding your starter

Measure out 20 grams of your starter into a glass jar or similar vessel. Save the rest for making crepes, crackers, or one of the many sourdough pastry recipes out there; compost it; or give it away to a friend so they can start their own sourdough journey.

Next, add:

- 60 grams water, room temperature
- 60 grams flour (I use organic whole wheat flour for my starter, you can branch out and create multiple alternatives flour starters, such as rye)

Stir and cover loosely (a mason jar lid not screwed down works, you want to ensure airflow but prevent it from drying out). Let it sit out on the counter for at least an hour. Now you can decide if you want to place your starter in the fridge and let it hang out for about a week until its next feeding. If you plan on baking with your starter or want to feed your starter daily, keep it on the counter and repeat steps 1-3 every 12- 24 hours.

Observe how your starter develops over time. Are there bubbles? Has it doubled in size? Did it double in size then fall back down? How about the smell? Sweet and floury? Sharp and acidic? All of these signs are your starter's way of telling you something. Learn to listen.

build your levain

A levain is essentially the same thing as your starter: a mixture of water and flour that ferments over time and creates an ecosystem where bacteria and yeast co-exist. This produces all the right conditions and chemical reactions to impart flavor, and improve digestibility in your bread. When baking wild-fermented sourdough bread, a levain is what will do all the heavy lifting of making your bread rise because you are not relying on any commercial yeasts to do the work. So you want to make sure to build an active and alive community in your levain to ensure your breads turn out wonderfully.

This levain formula is based on a standard dough of 1000 grams of flour, which becomes two loaves of bread when baked. Adjust your levain size if you want to make more or fewer loaves.

About 8-12 hours before you plan to mix your dough (which means about 24-36 hours before you will bake), in a small glass or ceramic bowl mix the following:

- 15 grams starter
- 100 grams water, room temperature
- 100 grams flour (I use 50/50 whole wheat and sifted flour)

Cover with a plate or other loose fitting lid and set aside on the counter somewhere warmish (I leave it by the stove if I had the oven on earlier or on top of the fridge). Let rest for 8-12 hours. The levain is ready to go when it is bubbling and slightly domed on top. To test if it is ready, you can drop a small pinch of the levain into a glass of water. If it floats, it is ready to move on to mixing your dough!

mixing your dough

In this step you will build your dough mixture and go through the initial fermentation period which is referred to as 'bulk fermentation.' This is because the entire dough mass is fermented together as one entity, as opposed to the final fermentation stage (known as the 'proof') which happens after the dough is divided into individual loaves. This phase will take somewhere between 5-7 hours.

Instead of kneading your dough as you might have done with other breads in the past, you will slowly build strength and flavor by performing gentle stretches and

folds over a long period, allowing the wild yeasts and bacteria to work their magic. The following basic whole grain sourdough dough formula is something you can think of as a launching point. This is a very flexible formula intended for home baking and it leaves a lot of room to experiment. It is based on a total flour weight of 1000 grams. Within this 1000 grams of flour you can mix different ratios of whole grain, sifted, or alternative flour options depending on the loaf you want to create. Each flour will perform differently, need different levels of hydration and impart different flavors, gluten-forming abilities, and textures. That is why a range is given for how much water to use.

Here's what the 5-7 hours of bulk fermentation will look like:

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mix levain, water (minus 50 grams), and flour ->
wait 45 minutes ->
add salt + 50 grams water ->
wait 30 minutes ->
stretch + fold #1 ->
wait 30 minutes ->
stretch + fold #2 ->
wait 30 minutes ->
stretch + fold #3 ->
wait 30 minutes ->
stretch + fold #4 ->
wait 1-2 hours ->
move on to dividing and shaping your dough
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THE BASIC WHOLE GRAIN SOURDOUGH FORMULA:

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200 grams mature levain (from the step described above)
800-1000 grams water
1000 grams whole grain flour*
25 grams salt
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Measure out the amount of water you plan to use (this will depend on how 'thirsty' your flour choice is. If you are starting out with whole grain flour, 850 grams of water total is a good starting point). Set 50 grams of this water aside, you will add it later when you mix in your salt. I usually use room temperature water but if my kitchen feels particularly cold I will use warmer water to help the fermentation along. Add your 200 grams of levain and your water minus 50 grams into a large, thick walled bowl or container. Use your hands to dissolve the levain into the water. Then add all of your flour and stir until no bits of dry flour remain. Let this sit for 45 minutes. This stage is called the 'autolyse' and allows the flour to hydrate and the grains to soften.

After 45 minutes, sprinkle 25 grams of salt and the 50 grams of water you set aside earlier. Using your hands like lobster claws, pinch the salt into the dough until it is well-incorporated.

Now your dough will ferment for 3-4 hours and over the course of bulk fermentation for this recipe you will perform 4 sets of ‘stretch and folds.’ A set of stretch and fold consists of four folds: begin by taking the top of the dough (if you think of a compass, this is the North of the dough) and stretching it up with your hands and folding it into the center. Rotate the bowl 90° and repeat. Do this until you have folded North, East, West and South into the center of the dough. You want to be gentle enough to not tear the dough, but firm enough to help strengthen the gluten. That’s it! Let your dough rest for 30 minutes in between each set.

After about 4 sets (be flexible and a bit footloose with this process. It’s a dance not an equation), let your dough rise on its own for about 1-2 hours. At the end of the bulk fermentation phase, you are looking for a dough that has risen noticeably, shows some bubbles on the top and sides, and is slightly domed at the edges. That is when you know it is time to move on to dividing and shaping.

divide and shape

I like to use a ‘wet shaping’ technique. Use a bit of water to wet down your hands, the counter, and a bench scraper. Dump your dough out onto your counter and use the wet bench scraper to divide the mass in half (or adjust if you are making more loaves). Using your hands, cup the dough and gently shape each mound of dough into a loose round. Cover these with a damp tea towel and let sit for 20 minutes.

Here’s the thing: The only way I learned how to shape my loaves was watching bakers do it by hand and by watching countless internet videos over and over. And I am STILL always a bit hesitant about it. So, describing it in words in a zine feels hard, but I am giving it a go. There are many internet videos about dough shaping, I recommend you watch some of them. Also just go with your gut and trust your hands and you will be great!

Flour the top of each of your loaves and your hands. Flip one loaf over and take the bottom edge up and fold to the middle. Take the left and right sides in your hands and fold them to the center, sort of like you’re forming an envelope. Flip the loaf over so the seam side is down on the counter and use your hands to cup underneath the loaf and drag it gently towards yourself, using the counter to create tension on

the top. Then flip the loaf and place it seam-side-up into a towel-lined bowl or a linen-lined proofing basket coated with flour (white rice flour is ideal here, but any flour will be fine). Repeat this with the second loaf. Cover both loosely with plastic bags (small garbage bags work great here) and place your loaves in the refrigerator to proof overnight for somewhere between 8-12 hours.

score and bake

There are many different ways to bake your bread and different vessels to do it in. The method I use is a cast iron dutch oven you can also use a combo cooker if you have one. Preheat your oven to 500° and place whatever you're baking in inside with the lid on. Allow it to come up to temperature for at least 20-30 minutes. At this time, take your first loaf out of the refrigerator. Place a piece of parchment paper on a cutting board and use the cutting board to flip the loaf out of the basket so the seam side is down on the parchment. Using a sharp knife or scoring tool, slash the top of your loaf with whatever design you choose. You want to be swift with this motion. Dust a bit of flour over the top of the loaf before scoring if you would like to create a visual contrast in your design. Use the parchment as a sling to transfer your bread to the dutch oven and place the lid back on. Reduce the heat to 475° and bake with the lid on for 20 minutes. Remove the lid and reduce the heat to 450° and bake for another 20-30 minutes. Carefully remove the loaf from the dutch oven, replace the lid and put it back in the oven to heat it back up to 500°. When the oven is back up to temperature, repeat the process with your second loaf.

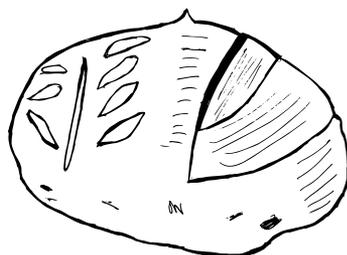
Wait for your loaves to cool *completely* before slicing into them. I know, I know, all that jazz about 'warm bread fresh out of the oven' is nice, but really your bread will thank you if you let it fully cool (there is all sorts of chemistry still going on in there) and you will avoid a gummy texture.

a note on "bakers percentage"

You will often see sourdough recipes expressed as a series of percentages. This seems super weird and confusing at first but once you understand the basic logic behind baker's math it is simple. Basically, the total amount of flour is always expressed as 100% and all other ingredients are expressed as a percentage of the flour. So if you see a recipe that has 85% water, that means you can take the weight of the flour and multiply it by .85 to get the amount of water to use. This way of writing recipes means that bakers can adjust ingredients up or down depending on how many actual loaves of bread they have to make without needing a whole new recipe.

variations on the basic loaf

These are some ratios I have loved experimenting with as I learn more about baking bread with local whole grains and wild fermentation. Follow the steps outlined above in the basic sourdough process and swap in these flour/grain/add-in formulas. This is just an invitation to learn what *you* love in *your* breads and learn what your flours want from you. The only way to learn is to keep baking and building a personal relationship to your sourdough.



GO-TO TABLE LOAF

Levain

- 15 grams starter (active and bubbly)
- 50 grams whole grain wheat flour
- 50 grams sifted flour or bread flour
- 100 grams water, room temperature

Dough

- 200 grams mature levain (above) (20%)
- 930 grams water (93%)
- 150 grams dark rye flour (15%)
- 600 grams whole grain wheat flour (60%)
- 250 grams sifted/high extraction flour or bread flour (25%)
- 25 grams salt (2.5%)

SESAME - WHEAT LOAF

Levain

- 15 grams starter (active and bubbly)
- 50 grams whole grain wheat flour
- 50 grams sifted/ high extraction flour
- 100 grams water, room temperature

Dough

- 200 grams mature levain (20%)
- 850 grams water, room temperature (85%)
- 600 grams whole grain wheat flour (60%)
- 400 grams sifted / high extraction flour or bread flour (40%)
- 170 grams toasted sesame seeds (17%)
- 25 grams fine sea salt (2.5%)

Add the toasted sesame seeds during your second set of stretch and folds.

WHITE SONORA WHEAT LOAF: thinking about the land

Pouring water over this flour was like watching heavy cream swirl between my fingertips. As I mixed, I meditated, as I often do, on what it is I mean when I say “ecologically empathetic baking.” I thought about how the roots of heritage grains grow so much deeper into the soil than modern commodity wheat. I dove my hands into dough as if they were roots and I wondered what it would take to mimic the generosity and simple sophistication of a root: How could I gather, disperse, and spread nutrients in that way? I thought of Sally Fox in the fields. I thought of what it must have been like to be a woman standing up for seed sovereignty and ecological plant breeding before those things were trending. I thought about my hero Robin Wall Kimmerer being told by her first botany instructor in college that her interest in the poetic beauty of golden rods and asters growing close to one another was not “real science.” I thought about how this wheat ran a tether between me and these two women. That puddle of dough in my fingers became the alchemy of time and space travel as I tried to cradle the land it came from in my hands.

Later that night I noticed a little clump of dried dough on my wrist, just above the palm of my hand. First, I thought to myself “Jeeze, you are a slob.” But then I climbed into bed intentionally without washing the dough off, inviting the idea of soil to soak in to my skin and spend the night with me.

White Sonora wheat is one of the oldest soft white bread wheats. It was introduced along the US/Mexico border states in the 1640s by Spanish and Italian missionaries for use in communion bread. It became the primary bread wheat in the West. Foods like burritos owe their existence to White Sonora. After WWII it declined and almost entirely disappeared from cultivation, due in part because Sonora 64 was one of the first plants of Norman Borlaug’s Green Revolution experiments. This wheat is becoming a gamechanger in the grain revitalization movement, thanks in large part to farmers like Sally Fox, an organic fiber farmer who has championed this grain for its ability to sequester carbon in the soil, or organizations like Native Seed/SEARCH in Arizona. It is low gluten, sweet, earthy, nutty and produces moist chewy breads.

Levain

15 grams starter (active and bubbly)
100 grams whole grain wheat flour
100 grams water, room temperature

Dough

200 grams mature levain (above) (20%)
700 grams sifted/high extraction flour or bread flour (70%)
300 grams freshly milled Sonora White Wheat (30%)
850 grams water (85%)
25 grams salt (2.5%)

BUCKWHEAT – GROAT LOAF: thinking about nourishment

I know you're not supposed to pick favorite babies, but this is my favorite loaf of all. It is a reminder that bread is a staple food. A life-sustaining food. A substance and a pleasure. Not a flavorless filler to be munched on mindlessly from a free basket set before you at a restaurant. Nor a food to be eschewed as the enemy of your waistline. Nor an "only on the weekends" food. But a food that allows life to continue to course through our veins.

Levain

15 grams starter (active and bubbly)
100 grams whole grain wheat flour
100 grams water, room temperature

Dough

200 grams mature levain (20%)
850 grams water (85%)
600 grams whole grain wheat flour (60%)
330 grams sifted/high extraction flour (33%)
70 grams whole grain buckwheat flour (7%)
150 grams buckwheat groats (15%)
25 grams fine sea salt (2.5%)

About an hour before you mix your dough, toast the groats in the oven at 350°F for about 10 minutes, until they smell nutty and fragrant. Let cool and cover in room temperature water. Let soak until you are performing your second set of folds. Drain off all excess water and add the groats to your dough to incorporate.

RYE PORRIDGE LOAF

Porridge loaves produce a custardy, pillowy inner texture and a hearty meal-in-and-of-itself slice of toast. I vote pro porridge loaf every single time. You could do the same thing listed below with rolled oats or barley flakes as well.

Porridge

- 250 grams Dark Northern Rye flakes
- 500 grams water

Levain

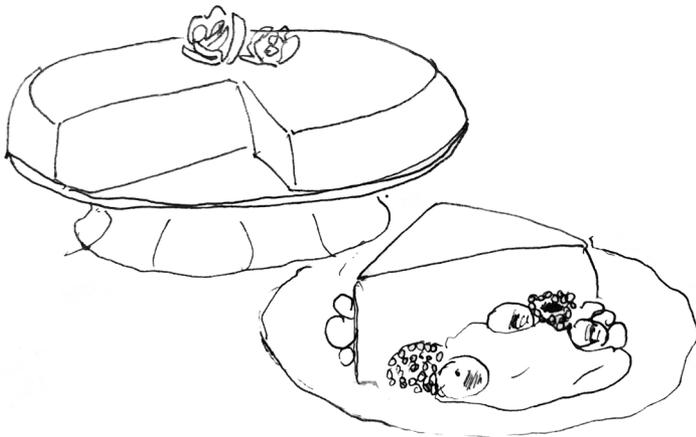
- 15 grams starter (active and bubbly)
- 50 grams whole grain wheat flour
- 50 grams sifted / high extraction
- 100 grams water, room temperature

Dough

- 200 grams mature levain (20%)
- 750-800 grams water, room temperature (75-80%)
- 600 grams whole grain wheat flour (60%)
- 250 grams sifted/high extraction flour or bread flour (40%)
- all of the porridge from above
- 25 grams fine sea salt (2.5%)

About two hours before you mix your dough, combine rye flakes and water in a medium saucepan over high heat. Bring to a boil then reduce to a simmer for 15 minutes or so until soft and porridge-like. Remove from heat and allow to fully cool. Mix the porridge into your dough on your second set of folds.

PASTRY AND OTHER BAKED GOODS



SOURDOUGH CHOCOLATE CHIP COOKIES



Is there anything better than a fresh-out-the-oven chocolate chip cookie? Not really. When you add whole grains, sea salt, and fermentation from a sourdough culture, they might just get even better.

DRY

- 250 grams whole wheat flour
- 1/2 tsp baking soda
- 3/4 tsp salt
- 200 grams dark chocolate, chopped roughly from a bar
- Flakey sea salt for topping

WET

- 224 grams (2 sticks) butter, room temperature
- 75 grams sugar
- 50 grams brown sugar (or coconut sugar)
- 1 large egg, room temperature
- 50 grams sourdough starter
- 1 tbsp vanilla extract

In a small bowl, whisk dry ingredients together.

In the bowl of a stand mixer, or in a medium mixing bowl using a hand mixer, cream butter and sugars together until light and fluffy. Scrape the sides of the bowl down. Add eggs one at a time and then add sourdough starter. Finally, add the vanilla.

Add the dry mixture in two batches and mix on slow speed until just incorporated.

Stir in the chopped chocolate and mix to evenly distribute.

Using a tablespoon or small ice cream scooper scoop out golf ball sized mounds onto a parchment lined baking sheet. You should get about 2 dozen cookies.

Store the cookies on the baking sheet in the fridge for at least 24 hours or up to 3 days to ferment.

When it's time to bake, preheat the oven to 350°F. Bake the cookies (separated by at least 2 inches) for about 15 minutes, or until just golden brown around the edges, rotating the sheet half way through baking. Remember that cookies will continue to bake slightly after they are removed from the oven.

Recipe adapted from baker, author and owner of Smoke Signals, Tara Jensen (via Adrian Hale of Thousand Bites of Bread who adapted it for whole grain baking).

WHOLE WHEAT OLIVE OIL MUFFINS W/ SPICED PRUNE COMPOTE



DRY

- 125 whole wheat pastry flour
- 125 stone ground whole wheat flour (you can substitute this for a mixture of equal parts almond meal and cornmeal)
- 300 grams sugar
- 1 1/2 tsp salt
- 1/2 tsp baking soda
- 1/2 tsp baking powder

WET

- 285 grams olive oil
- 305 grams whole milk
- 3 large eggs
- 1 1/2 tbsp grated orange or lemon zest
- 1/4 cup (60g) fresh orange juice or lemon juice
- Spiced prune compote, to top each muffin (below)

Heat the oven to 350° F. Oil, butter, or spray a 12-muffin tin and line each mold with bottom with parchment paper or a muffin cup.

In a large mixing bowl, whisk the flour, sugar, salt, baking soda and powder. In a separate bowl, whisk the olive oil, milk, eggs, zest and juice together. Add the dry ingredients and whisk until just combined.

Scoop the batter into the prepared muffin tins just under the rim of the mold. Top each muffin with a tablespoon or two of spiced prune compote (recipe below).

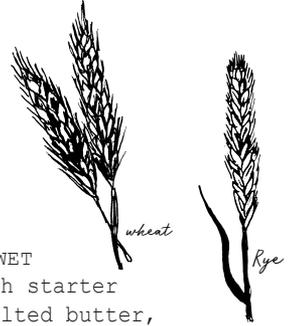
Bake for 25 minutes until the tops are domed and golden in color and a cake tester comes out clean. Transfer the tins to a rack and let cool for 30 minutes.

FOR THE SPICED PRUNE COMPOTE:

- 1 cup prunes (the fresher the better)
- 2 tbsp raw honey
- 1/4 cup water + more as needed as prunes cook
- Cinnamon, clove, cardamom, to taste
- Pinch of kosher salt & a few cracks of black pepper (optional)

If your prunes have pits, soak in water for an hour or so then use your fingers or a knife to slide the pits out. Roughly chop up the prunes into quarters. Place in a medium heavy-bottomed sauce pan. Add water, honey, and spices. Bring to a boil then simmer on the lowest heat until prunes have absorbed a significant portion of the liquid and are plump and fragrant. (Optional: You can pulse the compote with an immersion blender if you want a smoother consistency, you may need to add additional water to thin it out at this point.

FENNEL + SEA SALT SOURDOUGH CRACKERS



DRY

- 55 grams sifted/high extraction flour
- 28 grams whole grain wheat flour
- 28 grams dark rye flour
- 1/2 tsp sea salt
- Up to 2 tbsp fennel seed or a mixture of dried herbs
- Flakey salt, for sprinkling

WET

- 248g sourdough starter
- 57 grams unsalted butter, cold, cut into cubes

If using food processor: add all dry ingredients to the bowl of a food processor and pulse a few times to combine. Pulse in the butter and sourdough until dough starts to come together, avoid over mixing.

If doing by hand: add the dry ingredients to a large mixing bowl. Using your hands or a pastry cutter, cut the butter into the flour until it is the size of small peas. Add the sourdough starter and bring together into a single mass. If the dough is too dry to stick together, add a little cold water 1 tbsp at a time.

Bring the dough together into a ball, wrap with plastic wrap or a reusable beeswax cover and let rest in the fridge at least 30 minutes.

Preheat the oven to 350°F.

Roll the dough out into thin sheets, about 1/8 of an inch thick. Slice into whatever shape you want your crackers to be (I like long rectangles) and transfer to a baking sheet. Sprinkle flakey sea salt over the top of the crackers.

Bake until crispy and deep golden brown around the edges- These are rarely done all at once you will want to keep checking them and carefully pulling done crackers from the sheet to rest on a cooling rack to allow others to finish.

Recipe adapted from the kitchen of Kathleen Williams (of Cooking with Kates) a chef, baker, farm lover, dear friend, and all around brilliant mind.

CARROT-GINGER-RYE LOAF CAKE (DAIRY FREE) WITH TAHINI GLAZE



This loaf cake a spicy hug and the glaze an earthy kiss.

DRY

- 125 grams whole grain dark rye flour
- 125 grams whole wheat flour
- 1 tbspc cinnamon
- 1 tsp cardamom
- a pinch of fine sea salt

WET

- 1/3 cup non dairy milk (I use oat milk)
- 1/3 cup each of unrefined cane sugar and coconut sugar
- 2 tsp vanilla
- 1 egg
- 3 large carrots, grated
- 1 inch knob of ginger root, grated
- 1/2 cup olive oil

Preheat the oven to 350°F. Rub the insides of a 9x5 inch loaf pan with a bit of olive oil.

In a small mixing bowl whisk all the dry ingredients together.

In a medium sized mixing bowl add the non dairy milk, both sugars, vanilla and egg and mix until smooth. Stir in the carrots and ginger and mix well. Fold in the dry mix and mix until no dry bits remain. Finally, add the olive oil and stir until just mixed in.

Pour the batter into the prepared loaf pan and bake for 1 hour - 1 hour and 15 minutes or until a knife stuck in the middle comes out clean. Rotate the loaf halfway through baking.

Allow to cool for 10 minutes in the pan then turn out on a wire rack. While the loaf is still a bit warm, place on a plate and cover the top liberally with tahini glaze (below).

FOR THE TAHINI GLAZE:

- 1/2 cup tahini
- 1-2 tbspc non-dairy milk (I use oat milk)
- 1tsp sugar
- 1/2 tsp cardamom
- pinch of salt

Stir all ingredients together in a small bowl until smooth and spoonable but not too runny. Thin to your desired consistency with more or less liquid.

RYE SHORTBREAD COOKIES

To boost both the visual appeal and flavor of these cookies you can press edible flowers or cocoa nibs on the top of each one after you have sliced them before you stick them in the oven. I pressed dried calendula flowers and the golden yellow petals looked very cool against the dark grey color of whole grain rye.



DRY

- 1 cup dark rye flour
- 1 cup whole wheat pastry flour
- Pinch of salt
- Dried edible flowers (optional)

WET

- 1 cup butter
- 1/2 cup sugar
- Course sugar for sprinkling on top (optional)

In a medium bowl, whisk together the dry ingredients.

In the bowl of a stand mixer, or in a large bowl if using a hand mixer, cream butter and sugar together until fluffy.

Add dry ingredients and mix on low speed until just fully incorporated and still a bit crumbly. Dump the dough out on the counter and bring it together into a single mass with your hands.

Place the dough in the middle of a large-ish square of plastic wrap and roll into a log (if you are anything like me, this process is always awkward, but stick with it, I believe in you). Refrigerate the log for at least 30 minutes, or overnight.

When you are ready to bake, preheat the oven to 325°F. Slice the dough into 1/4 inch rounds and transfer them to a parchment-lined baking sheets.

Bake for 6-7 minutes, until fragrant and beginning to turn golden brown around the edges. Remove from oven and allow to cool on a wire rack.

Makes a few dozen cookies, depending on how thick you slice them.



Adapted from a recipe for Swedish Rye Cookies by Heidi Swanson (101Cookbooks.com)

WHOLE GRAIN PIE CRUST

makes 1 9-inch crust

DRY

- 240 grams whole grain wheat flour
- 45 grams dark rye flour
- 15 grams whole grain buckwheat flour
- 3-5 grams salt
- 15 grams sugar (if for a sweet filling, if your filling is savory leave out the sugar)

WET

- 200 grams unsalted butter, cold, cut into 1 inch cubes
- 90 grams ice water



Place all flours, salt, and sugar (if using) into the bowl of a food processor. Pulse a few times to incorporate.

Add the cubed butter and pulse until the butter is somewhere between walnut and pea-sized. You can alternatively cut the butter in by hand.

Add ice water 1 tbsps at a time until the dough is just wet enough to hold together if squeezed between your fingers, but is not sticky or wet.

Turn dough out onto a counter and use your hands to bring the dough together into one mass. Wrap in plastic wrap and let rest in the refrigerator for at least 30 minutes before rolling out for your recipe.

To par-bake: Preheat the oven to 375°F. Remove the dough from the refrigerator and roll it out on a lightly floured surface to about 1/4 inch thick. Transfer to a 9-inch pie pan. Trim the edges so about 1/2 inch overhang is left. Crimp or fold over or decorate the edges as you please. Prick the bottom a few times with a fork, and line the bottom with parchment filled with pie weights or dry beans. Bake for 15-20 minutes until the edges are firm and the bottom no longer looks wet. Remove the parchment and weights/beans and brush the crust with an egg yolk wash. Return to the oven and bake for another 5 minutes for a partially-baked crust or about 15 minutes for a fully blind-baked crust.

Recipe adapted from a texted photo of a peice of paper with a hand-written recipe from my friend Sophie Williams who owns Raven Breads, a whole grain, bike-powered bakery in Bellingham Washington. Sophie is a constant source of inspiration and motivation and you should go read her writing at ravenbreads.com

COCONUT PUMPKIN PIE W/ EINKORN CRUST

DRY

- 1/2 cup coconut sugar
- 1 tbsp freshly ground ginger
- 1 tbsp cinnamon
- 1/2 tsp clove
- 1/2 tsp nutmeg
- 1 tsp salt
- 1 9-inch whole grain pie crust made with einkorn flour in place of whole wheat, blind baked (recipe above)

WET

- 1 1/2 cup pureed pumpkin or fleshy winter squash, such as red kuri or tetsukabuto
- 2 tsp vanilla
- 3 large eggs
- 1 cup full-fat coconut milk



Preheat the oven to 350°F.

In a medium bowl, whisk together the dry ingredients.

In a separate bowl, stir together in the pumpkin puree, vanilla, eggs and coconut milk. Add the wet mixture to the dries.

Pour the filling into a blind-baked short crust and bake for about 40 minutes, or until the edges are set but the center of the pie is still a bit jiggly. Remove from oven and let cool at . Serve at room temperature with a generous dollop of whipped cream or coconut cream. Store covered in the refrigerator.

APPLE & QUINCE GALETTE W/ SPELT CRUST



I think quince is like a poem of a fruit. Its fragrant perfume fills a room and entices all the senses, it is unruly looking and hard to cut, it is withholding and inedible until cooked and when stewed for hours undergoes a spectacular transformation in color from pale white to deeply rose-red. In this rustic tart, bright pink quince paste snuggles with crisp apples in a nutty spelt crust.

- 3 apples halved and sliced into ~ 1/4 inch thick cross sections (I personally leave the stem, core, and skins on and just pluck out the seeds)
- 1 tbsp sugar
- 1/2 cup quince puree (see recipe below)
- 1-2 tbsp unsalted butter
- 1 egg yolk mixed with a splash of whole milk or heavy cream
- 1 9-inch whole grain pie crust made with spelt flour, unbaked (recipe above)

Preheat the oven to 375°F.

Line a baking sheet with parchment paper. On a lightly floured counter, roll out the dough into a 10-12" circle/oval-ish shape (embrace the "rustic" nature of a galette here) about 1/4 inch thick. Transfer the dough to the baking sheet.

Spread a layer of quince paste over leaving 1- 1 1/2 inch border around the edge. Arrange the apples in a nice pattern on top of the paste, again leaving a border around the edge. Sprinkle the sugar and cinnamon over top of the apples.

Using the parchment paper as an aid, fold the edges of the crust up and over the edges of the fruit center, crimping the crust to create corners.

Using a pastry brush or your fingers, apply the egg wash to the top of the crust and sprinkle with coarse sugar (optional). Nestly pats of butter amidst the fruit on top.

Bake for 45-55 minutes, until the crust is well-set and the fruit is soft and juicy.

FOR THE QUINCE PUREE:

- 2 lbs quince, peeled, cored, and chopped
- About 1 1/2 cup sugar
- Zest and juice of 1 lemon

Add the quince to a large saucepot and cover with water add the lemon zest. Bring to a boil. Reduce heat to medium, cover, and simmer until the quince is very tender, about 30 minutes. Strain the water (reserve it!) Puree the quince using an immersion blender. Add sugar and lemon juice. Heat on medium low heat until the quince starts to turn pink and becomes very thick. This can take 2+ hours.

Caution: when the quince paste boils up it is like molten lava seeking to burn your forearms.

At this point you can further process the paste into membrillo (also known as quince cheese or cotognata) by lining a 8x8 baking pan with parchment paper and dehydrating the paste in an oven at its lowest heat setting overnight.

If using as puree, wait until cooled down a bit then store in airtight jars in the fridge.

Use leftover puree in porridge, on ice cream or nestled into a teacake.

CORNMEAL BUTTERMILK CHESS PIE W/ FORAGED PLUMS IN WHOLE WHEAT CRUST



- 1 single 9-inch sourdough whole grain pie crust, blind baked
- 3 tbsp cornmeal
- 1 tbsp whole wheat pastry flour
- 4 large eggs, room temperature
- 1 cup buttermilk, room temperature
- 1/4 cup whole yogurt
- 1/2 cup unrefined sugar
- 6 tbsp butter, melted then cooled
- 1tsp vanilla
- 5-6 fresh plums, pitted, halved and cut into 1/2 inch thick slices (foraged from your neighborhood if possible)

Preheat the oven to 375°F.

Mix the cornmeal and pastry flour in a large bowl.

In a separate medium bowl whisk together all the wet ingredients.

Add the wet mixture to the flours and mix well. Pour the filling into the prepared pie shell.

Plop the plums on top of the filling, evenly distributing the fruit and trying your best to arrange them cutely. They will sink so this is a bit of an uphill battle.

Bake for 35-40 minutes, or until the filling starts to get golden brown and set, but still quite jiggly.

Allow to cool for at least 2 hours. Serve at room temperature or keep chilled in the refrigerator.

SOME SAVORY COMBOS I THINK YOU COULD (SHOULD) PUT
INTO A GALETTE USING THE PIE CRUST RECIPE IN THIS
ZINE OR AS TOPPINGS ON A FLATBREAD OR FANCY TOAST

tahini + miso-roasted squash + arugula

wild mushrooms + caramelized fennel + a sharp alpine cheese

grilled peaches + abundant herbs + feta

fresh figs + shaved parmesan + pea shoots

honey-roasted carrots + pistachios + hot chili flakes

melted leeks + zucchini + thyme + tangy goat cheese

kale pesto + red kuri squash wedges + hazelnuts + parmesan



A BASIC HOUSEWARMING GRANOLA FORMULA



Those who know me know that I have a comically emotional relationship to the act of baking granola. The smell of toasting oats melding with warming spices, nuts, and seeds brings me back into myself after periods of instability unlike any other smell. The simplicity of this smell grounds me in my body, wherever it is. It is assurance that there is constancy in the face of change. Granola also has a special way of striking a particular balance Rebecca Solnit discusses in *A Paradise Built in Hell*: "Finding the balance between independence and fellowship is one of the ongoing utopian struggles." Granola is personal and communal. I have never made a batch of granola that yields a quantity reasonable for one to consume alone. Instead, each time I bring a still warm palmfull of freshly baked granola to my mouth (while, let's be honest, spilling a fair amount on the floor) I know that I will soon fill up one jar for myself and pour the remainder into jars and, again, probably a significant amount on the floor) to feed my friends and family.

DRY

- 3 parts rolled oats, or use rolled barley, spelt, or rye
- 2 parts nuts and seeds
- Generous pinch of sea salt
- Spices to taste (I gravitate towards a lot of cinnamon, a little bit of cardamom, and an even littler bit of clove)
- 1 part dried fruit, chopped if it makes sense to do so

WET

- Vanilla extract to taste (~ 2 tsp per 3 cups of grains)
- 1 part coconut oil or melted butter or olive oil
- 1/4 part honey or maple syrup or coconut sugar or a mixture (use more if you like the sweeter side of life)

Preheat the oven to 325°F.

Stir all the dry ingredients together in a large mixing bowl. Heat the coconut oil in a small sauce pan and stir in your sweeteners. Pour the warm oil mixture into the dry mixture and stir well. Give a taste at this point for sweetness, spices and saltiness, adjust as needed (Remember adding dried fruit will add sweetness later).

Spread the mixture out on a baking sheet and bake for about 20-30 minutes, or until the grains are deeply golden brown and fragrant. Stir every 10 minutes to prevent burning.

Remove from oven and stir any dried fruits while the granola is still warm.

Let cool completely before transferring into air-tight jars. If like me, finish up by sweeping your dang floors.

SAVORY SEAWEED GRANOLA ("GRA-NORI")

While I am not a fan of very sweet breakfast foods, most mornings I do gravitate toward a breakfast that has hints of sweetness to it - plain yogurt topped seasonal fruits and homemade granola. However, recently I developed cravings for deep savory notes in the early mornings. I was waking up with visions of fresh green herbs, pickled vegetables, and thick yogurt doused in fruity olive oil and sea salt Why couldn't my normal granola routine be tailored to fit with a savory breakfast spread? The idea for granori was born out of nostalgia and wistful memories of a seaweed scone that once appeared in the ever-changing pastry case of my favorite cafe in Chicago. Small nods to the salty sea were at home amidst nutty whole grains and a hint of honey. I tried to transform that scone memory into a batch of granola.

DRY

- 3 cups rolled oats or rolled barley, rolled wheat, or rolled rye
- 1/4 cup raw sesame seeds
- 1/2 cup raw sunflower seeds
- 1 cup raw almonds, roughly chopped
- 2 tsp sea salt
- 1/2 - 1 tsp fresh black pepper
- 8-inch sheets of nori seaweed, torn roughly into small pieces
- Flakey sea salt and fresh ground black pepper, to finish

WET

- 1/4 cup olive oil
- 1/3 cup runny honey (you can use a bit more or less here)
- a splash of sesame oil (optional)

Follow the method for basic housewarming granola. Add the torn-up nori after you remove the granola from the oven.

CARROT-CASHEW-CURRY GRANOLA

I cannot believe how long it took me to realize: if I am putting dried fruit in sweet granola, why am I not putting dried vegetables in my savory granola?

DRY

- 3 cups rolled oats or rolled barley, rolled wheat, or rolled rye
- 1 cup cashews
- 1/2 cup sunflower seeds
- 1/4 cup chia seeds
- 1/2-1 tbsp curry powder
- Salt and pepper, to taste
- 1 cup carrot candy (recipe below)

WET

- 1/2 - 3/4 cup coconut oil
- 1/4 cup raw honey
- Optional: 1 egg white, lightly beaten with a fork (this makes for extra clumpy granola if that floats your boat)

Follow the method for basic housewarming granola recipe. Add the carrot candy after you remove the granola from the oven.

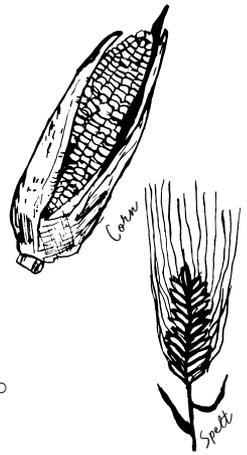
TO MAKE CARROT CANDY:

Peel 2 lbs carrots and cut into 1/8-inch rounds. Toss lightly with olive oil and a sprinkle of salt. Spread on a baking sheet in a single layer. Dehydrate in the oven at 200°F until shriveled, chewy and significantly reduced in size. Take care not to let them get too dark/burn. This will take about 2-2.5 hours. If not using in granola, store in an airtight container.

Carrot candy recipe originally from The NY Times

CORNMEAL + SPELT SHORTBREAD BARS W/ DARK CHOCOLATE AND SEA SALT

These shortbread-style cookies have a delightful gritty bite and a bright color thanks to freshly milled cornmeal and are doused in chocolate.



- 120 grams granulated sugar
- 1 large egg, at room temperature
- 1 large egg yolk, at room temperature
- 250 grams unsalted butter (2 1/4 sticks), cut into cubes and softened
- 240 grams fine cornmeal
- 240 grams whole grain spelt flour

- a generously sized bar of dark chocolate
- 1-2tsp coconut oil
- flakey sea salt, such as Maldon

In a stand mixer or a large bowl using a hand mixer, beat the sugar, egg and egg yolk until pale and creamy (about 2 minutes). Add the softened butter and beat until fluffy.

Add the corn and spelt flour and mix until just incorporated. Turn the dough out onto a lightly floured counter. Divide dough in half and shape into two disks. Wrap in plastic wrap and rest in refrigerator for at least 30 minutes.

When ready to bake, let dough soften at room temperature.

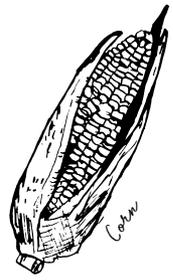
Butter and line a shallow 8x8-in baking dish with parchment. Once it is soft enough, use your fingers to press the dough into the pan evenly at about 1/2 -3/4 inch thickness. Bake at 350°F until the edges are rich golden brown (baking time will depend on the size and thickness of your base). Allow to cool in the dish for 5 minutes before removing to cool completely on a wire rack.

While cooling, melt the chocolate together with the coconut oil. Using the back of a soup spoon, smooth the chocolate over the surface of the cookie base. Top liberally with Maldon salt. Allow the chocolate to fully set (speed this up in the fridge if you want) before slicing into small rectangular bars. Enjoy with a cup of something good and warm!

I adapted the cookie base for these bars to be whole grain based on a from a recipe by cookie queen, Dorrie Greenspan who adapted them from Apollonia Poilâne's recipe for corn sables.

POPCORN IN A BAG

aka: "when I don't have my act together enough to make myself big girl dinner"



- 1/4-1/2 cup heirloom popping corn (I like to use Dakota Black popcorn)
- a paper lunch sack
- 1-2 tbsps salted cultured butter, melted
- generous amounts of nutritional yeast (aka hippy dust)
- a handful of raisins (optional, just trust me)

Put the corn in the paper bag and roll the top down a few times, ensuring there is enough loose space for the popcorn to expand as it pops. Place in a microwave (if you don't have a microwave this can be done on the stove with a glug of cooking oil). Microwave on high until there are more than 4 seconds in between popping sounds.

Carefully open the bag (it's hot! and there is steam!) and pour the popcorn into a big bowl. Top with the melted butter and the nutritional yeast then sprinkle in those raisins. This may seem weird but it is a good thing. The raisins sink to the bottom and get all salty and funky and I think that is very fun.

BUCKWHEAT SCONES WITH CARDAMOM-ROASTED PEARS

My notes for this recipe just say
"these WILL be on the menu."

What menu? I don't know. It doesn't
even matter. They will be on it.



SCONES

- 130 grams rolled oats (half ground into flour)
- 400 grams whole grain buckwheat flour
- 150 grams sugar
- 2 1/4 tsp baking powder
- 3/4 tsp baking soda
- 1 tsp salt
- 1/4 tsp cardamom
- 1 1/2 tsp cinnamon
- zest of 1/2 orange or lemon
- 165 g unsalted cold butter cut into small chunks
- 1 cup heavy cream, plus extra for wash

ROASTED PEARS

- 4-5 pears
- 2 tsp vanilla
- 1/2 tsp cardamom
- 1 tbsp maple syrup or coconut sugar

Pre-heat the oven to 350°F.

Cut pears into small cubes and place in a baking dish. Add the vanilla, cardamom, and sweetener. Roast until the pears are soft and beginning to turn golden at the edges.

Add all the dry ingredients to a bowl and mix well. Add the orange zest and butter chunks. Using your hands or a pastry cutter, cut in the butter until it is pea size.

Create a well in the center of the mixture and add the cream. Using your hands, gently mix the mixture until it holds together.

Measure out 1/3 cup of dough at a time and form into a ball and place on a parchment-lined baking sheet. Use your thumb or the back of a spoon to make an indentation in the center of each ball of dough and fill each indentation with a generous spoonful of roasted pears.

Brush the top of each ball with heavy cream, using a pastry brush or your fingertips.

Bake for 25-30 minutes, rotating the baking sheet halfway through. Let these cool well before eating, otherwise they will fall apart completely (they are still pleasantly crumbly after cooling, so a plate or napkin is recommended. Eating in the car has been done but proceed with caution.)

VEGAN BUCKWHEAT PUMPKIN BREAD

This loaf is earthy, gluten-, dairy-, and egg-free. It is very delightful for breakfast or a snack slathered in peanut butter.



DRY

- 245 grams buckwheat flour
- 75 grams coconut sugar
- 2 heaping tsp cinnamon
- 2 tsp baking powder
- 1/2 tsp sea salt

WET

- 410 grams pumpkin or other winter squash such as red kuri or butternut, roasted and pureed (or 1 can of pumpkin puree)
- 1/3 cup coconut oil, melted
- 2 tsp vanilla extract

Lightly grease a 9×5 loaf pan and line the bottom with parchment paper.

In a large mixing bowl, whisk together the dry ingredients.

Add the pumpkin puree, oil and vanilla and mix well.

Pour the batter into prepared loaf pan and bake for 50 minutes, or until set in the middle and browning around the edges. Because of buckwheat's dark color it can be hard to tell when this loaf is done but you want to avoid over-baking this one to avoid a dry crumb. Let cool at least 30 minutes before slicing.

VEGAN BARLEY BREAKFAST COOKIES

Equally appropriate as a morning treat with a cup of coffee, or a mid-day pick-me-up. Given the sweetness of barley flour and plump raisins and apricots, these are pretty sweet cookies but the earthy savory undertones from extra virgin olive oil balance them out.



DRY

- 1/2 cups whole grain barley flour
- 1/2 cup barley flakes
- 1 tsp baking powder
- 3/4 tsp baking soda
- 1/2 tsp fine salt
- 1/4 cup raisins, (cut in half if that makes sense I like a combo of jumbo raisins and flame raisins, so it does)
- 1/4 cup dried apricots, roughly chopped
- 1/3 cup coconut sugar
- 1/3 cup cane sugar
- Flaky sea salt, like Maldon and sesame seeds, for finishing

WET

- 1/2 cup extra virgin olive oil (you can use a more mild flavored oil if you prefer, I just sure love the flavor a robust olive oil gives a cookie)
- 1/4 cup water

In a large bowl, mix all the dry ingredients to combine. Stir in the dried fruits.

In a separate mixing bowl, whisk together the sugars, olive oil, and water.

Add the dry mixture to the wet mixture and stir with a wooden spoon or spatula until just mixed together and no dry clumps remain.

Cover the bowl and refrigerate at least 12 hours or up to 24 hours (don't skip this part).

When ready to bake, preheat the oven to 325°F. Remove the dough from the fridge and use a tablespoon or small ice cream scoop to measure out mounds of dough onto a parchment-lined baking sheet, leaving about 2 inches between each dough mound. Sprinkle with flakey salt and sesame seeds.

Bake for 12-15 minutes, or until the edges are just golden. They will still seem a little soft but they firm up as they cool.

Makes about 1 1/2 dozen cookies.

FLAKED BARLEY COOKIES WITH DARK CHOCOLATE & SEA SALT



I developed this recipe for the 2019 Fill Your Pantry and Winter Vegetable Sagra hosted by Friend of Family Farmers and the Culinary Breeding Network to highlight the diverse culinary uses of whole grain barley. They are a twist on a classic oatmeal chocolate chip cookie that highlight the terroir and flavor of PNW regional grains.

DRY

- 2 cups whole grain barley flour
- 1 cup streaker barley flakes
- 1 1/2 tsp baking powder
- 1 teaspoon baking soda
- 1 1/2 tsp fine sea salt
- 6-8 ounces dark chocolate, coarsely chopped*
- Flakey sea salt, such as Maldon, for finishing

WET

- 8 ounces (2 sticks) butter, room temperature
- 3/4 cup coconut sugar, muscovado, or dark brown sugar
- 3/4 cup cane sugar
- 2 large eggs, room temperature
- 2 generous tsp vanilla extract

Preheat the oven to 350°F. Line two baking sheets with parchment paper.

Toast the barley flakes in a skillet over medium heat for about 5-7 minutes, stirring frequently, until the flakes become golden brown and smell very fragrant and nutty.

Mix the flour, toasted flakes, powder, soda, and sea salt in a medium bowl with a whisk or fork to evenly distribute.

In the bowl of a stand mixer with the paddle attachment, or with a hand mixer, beat the butter and sugars together until just blended, using a spatula to scrape down the sides of the bowl as needed.

Add the eggs, one at a time. Add the vanilla and mix until well combined.

Turn off the mixer and add flour mixture to the bowl, mix on slow speed until all the flour is just incorporated and no dry patches remain.

Add the chocolate to the bowl and fold in by hand using a spatula until evenly distributed.

Using a large spoon or ice cream scooper, measure out mounded

balls of dough, about 2-3 tablespoons (roughly the size of a golf ball), and place them onto your baking sheets, spaced at least 2 inches apart or about 6 cookies per sheet. Sprinkle each dough mound with flaky salt and use your fingers to press the salt lightly into the dough so it doesn't slide off while baking.

Bake for 12-16 minutes, rotating the sheets halfway through, until the cookies are golden brown around the edges but still a bit soft in the middle. Keep in mind that they will continue to firm up slightly after they are out of the oven.*

Enjoy warm out of the oven, or allow to cool fully on a wire rack and store in an airtight container for up to about 4 days.

*I think these cookies are best when pulled out of the oven while still a little gooey. But you can also cook them a little longer for a snappier cookie, if you want. It all depends on your personal cookie-eating preferences.

**thank you to the many friends and
mentors that supported this project!**

Some of them include:

The growers, bakers, and community organizers who have been doing this work since long before it was cool. Thank you for laying such strong bricks for us to honor and build upon.

Adrian Hale (Thousand Bites of Bread), Sophie Williams (Raven Bread), Lane Selman (Culinary Breeding Network), Kathleen Williams, Maggie Rosenthal, Sumer Ladd, My mother, The Oregon coastal rain forest

The bread bakers who let me learn alongside them this year (including the staff at Floriole Cafe in Chicago, Dillon Debauche, Daniel Green, Matt Kedzie, and many more)

To the people in the tiny but mighty bread world who have offered such a kind welcome into a community I

some PNW local grain resources

The grains used during this project have mostly come from the following farms and mills. This is a very small sampling of the rich and growing sustainable non-commodity grain economy in the Pacific Northwest, and an even smaller representative of all the awesome people working to build regional artisan grain and milling projects around the world! I encourage you to find your way to these wonderful farmers and the many more on your own. Visit my good friend Adrian's website (thousandbitesofbread.com) for an awesome interactive map of whole grain bakeries and mills around the world and a list of cookbooks and regional resources.

Camas Country Mills, Junction City, OR

Camas Country Mill is the first mill of its kind in the Willamette Valley in over 80 years. The mill was the natural extension of the Hunton Family third generation farm, deeply rooted in the Willamette Valley land and community for over 50 years. Camas grows organic, transitional, conventional cereals and legumes, and mills small batches of artisan flour just down the road at their stone-burr mill where they also have a small bakery showcasing delicious whole grain baked goods. Camas Country Mills is committed to building a strong, sustainable and vibrant regional grain economy.

Cairnspring Mills, Burlington, WA

Cairnspring Mills works directly with farmers who share their commitment to sustainable agricultural practices and mills their grain with care to maintain a transparent supply chain. Each batch of grain is milled separately to preserve its unique identity and flavor; each batch of flour can be traced back to the origin farm. The mill's team consults directly with artisan bakers, chefs, and industry professionals and invites them to experiment and reimagine their recipes

Fairhaven Organic Flour Mill, Burlington, WA

Farmer-owned and locally operated in the Skagit Valley, Fairhaven mills their flours on stone and hammer mills. They process grains exclusively from dedicated organic growers throughout the Pacific Northwest. By milling only organically-grown grains, Fairhaven Mill supports healthy farmlands and a sustainable, ecologically-responsible agriculture.

Lonesome Whistle Farm, Junction City, OR

Lonesome Whistle Farm offers organic, heirloom, and specialty grains and seeds to Willamette Valley farmers market customers, as well as natural foods grocers and chefs. They specialize in heirloom and rare varieties; they do this in order to preserve and promote genetic diversity, introduce fellow gardeners and farmers to rare and unique varieties, and share a passion for growing food and saving seeds. The farm is continuously committed to organic farming practices and being part of the local food movement. They grow and produce food, save their own seeds and offer surplus to the community.

Moon Family Farm, Horse Heaven, WA

Moon Family Farm is 5th generation family farm growing sustainable grain in Horse Heaven, WA. They use dryland cropping: an ancient, natural farming method well adapted to our regional ecosystem. No irrigation water/energy is used. They also farm 100% no-till. The farm's philosophy is of low impact food production using high and low-tech. Moon Family is independently certified as Farmed Smart Sustainable and Salmon-Safe.

Tuality Plains Great Grains, Forest Grove, OR

This peri-urban milling operation is dedicated to expanding "know your farmer" to "know your farmer, miller, baker, and brewer" by working to build a sustainable, local grain economy for the health of our community and the health of our regional soils.



The Flour Ambassador Pledge:

I do solemnly, happily swear that I am going to tell everyone I see that it is okay to love flour

Bread is not poison

Invisibility is poison

I will make visible all labor in bread, from seed to mill and mill to loaf

Because mills are the levers that farmers need to get grains in the ground and under our butter again

-Written by Amy Halloran, author of *The New Bread Basket* and founder of the Flour Ambassador project (follow her on Instagram @flourambassador)

some reading recommendations

Global Grains Movements:

- *The New Bread Basket: How the New Crop of Grain Growers, Plant Breeders, Millers, Maltsters, Bakers, Brewers, and Local Food Activists Are Redefining Our Daily Loaf* by Amy Halloran
- *Restoring Heritage Grains: The Culture, Biodiversity, Resilience, and Cuisine of Ancient Wheat* by Eli Rogosa
- *Harvest Heritage: Agricultural Origins and Heirloom Crops of the Pacific Northwest* by Richard D. Scheuerman
- Farmerama Podcast's six-episode series entitled "Cereal"
- Check out one of the awesome grain conferences/ gatherings put on every year around the world such as Main Grain Alliances Kneading Conference, the Ashville Bread Festival, Cascadia Grains Conference, The Grain Gathering, The UK Grain Gathering, and many others.

Whole Grain Baking:

- *Heirloom* by Sarah Owens
- *A Bakers Year* by Tara Jensen
- *Tartine No. 3* by Chad Robertson
- *Good to the Grain* by Kim Boyce
- *The Rye Baker: Classic Breads from Europe and America* by Stanley Ginsberg
- *Heritage Baking: Recipes for Rustic Breads and Pastries Baked with Artisanal Flour from Hewn Bakery* by Ellen King

Sourdough Bread Baking

- *Sourdough: Recipes for Rustic Fermented Breads, Sweets, Savories and More & Toast and Jam* by Sarah Owens
- *Flour Water Salt Yeast: The Fundamentals of Artisan Bread* by Ken Forkish
- *Bread Revolution & Artisan Breads Every Day & Whole Grain Breads* by Peter Reinhard
- *Josey Baker Bread* by Josey Baker
- Theperfectloaf.com

Please email me at katiegourley@gmail.com if you would like links to articles or more web resources about any of these topics, or if you have resources to share or discuss. I would love to hear from you and learn with you!

source materials

A Bakers Year by Tara Jensen

American Way Magazine: “The Bakers Leading the Artisanal Bread Movement” by Andrew Friedman

Blog posts by Maurizio Leo on theperfectloaf.com

California Grain Campaign: californiagrains.com

The Cereal Podcast series by Farmerama Radio

Emergence Magazine: “Corn Tastes Better on the Honor System” by Robin Wall Kimmerer

Good to the Grain by Kim Boyce

Grainstorm: “What’s wrong with modern wheat?” grainstorm.com

GrowNYC’s GreenMarket Grains program: grownyc.org

Heirloom by Sarah Owens

Oregon State University’s Barley World: barleyworld.org

Palouse Heritage Grains: palouseheritage.com

Real Bread Campaign: sustainweb.org/realbread

Rocky Mountain Heritage Grain Trials Project: rockymountainseeds.org

Scotland the Bread: scotlandthebread.org

Small Food Bakery / owner Kimberley Bell: smallfoodbakery.com

Tartine No. 3 by Chad Robertson

The Lexicon of Sustainability: thelexicon.org

The New Bread Basket: How the New Crop of Grain Growers, Plant Breeders, Millers, Maltsters, Bakers, Brewers, and Local Food Activists Are Redefining Our Daily Loaf by Amy Halloran

The Sourdough Podcast

UK Grain Lab: ukgrainlab.com

Up Rye Zine! by Sophie Williams, owner of Raven Bread

Whole Grains Council: wholegrainscouncil.org

WSU Bread Lab: thebreadlab.wsu.edu

Yes! Magazine: “Decolonize Your Grain” by Liz Carlisle

Yes! Magazine: “Wild Yeasts and Ancient Grains” by Alexandra Van Alebeek



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