

barley world

a zine

flavor | health | satiety



Barley World

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barley world

a collection of barley information &
inspiration

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introduction

Barley is one of the oldest known domesticated crops and remains the fourth most widely grown cereal crop in the world today. Barley has three principal end-uses: feed, food, and malt. Despite being domesticated for human consumption originally, today barley is mainly produced for animal feed or malted for use in brewing and distilling. Wheat and rice have widely replaced it as a food product. However, there are still many areas of the world where barley remains a staple food crop with significant spiritual, nutritional, and cultural importance. In the United States, there is a renewed enthusiasm for barley as a food accompanying increasing public awareness of the value of healthy eating. Adding barley to one's diet not only adds a diversity of flavors, colors, and aromas but also increases the diversity of healthy cereal fiber sources.

The Oregon State Barley Breeding Program is a team of barley enthusiasts dedicated to generating fundamental knowledge about barley, applying that knowledge to stimulate economic development through the release of new barley varieties, sharing barley genetic resources, and encouraging barley use and consumption. This zine is a part of our USDA-NIFA-OREI funded project (grant number 2017-51300-

26809) on "Developing Multi-use Naked Barley for Organic Farming Systems." The development, assessment, and participatory breeding of naked multi-use barley is being conducted in five representative regions: Pacific Northwest (OR, WA), Upper Midwest (MN, WI) and North East (NY). Organic growers need new crops, markets, and rotation options supported by varieties that are developed specifically for organic conditions. The long-term goal of this research project is to provide organic gardeners, growers, processors, and consumers with an alternative crop, food, and raw material that will be economically rewarding and sustainable.

In this project, we are working to assess naked barley varieties under organic conditions in school and home gardens, on university research stations, and in on-farm trials. We have been evaluating agronomic, food, feed, malting, and brewing performance. Members of the project have been assessing food quality and functionality, as well as doing product development work.

Many of the recipes in this zine were created for outreach events associated with this project. We hope you enjoy experimenting with the world of barley!

glossary

Types of barley:

Covered (hulled)

has an adhering hull, the husk is essentially glued to the outside of the kernel. The hull is primarily composed of cellulose (insoluble fiber) and is not palatable. Covered barley is most often used for malting or animal feed. To be consumed as a human food product, covered barley is almost always pearled. Occasionally, bulk bins will list naked or pearled barley as "hulled" when they actually mean "dehulled".



Naked (hull-less)

is a whole grain and can be cooked and consumed directly without needing to remove a hull because this type of barley threshes freely from the hull during harvest or cleaning, similar to bread wheat. Naked barley is most often used for human food or animal feed. It can be milled into flour, flaked, steamed, or added to soups.



Flaked

barley that has been rolled into flakes. Naked or pearled barley is tempered, rolled, and then toasted to produce barley flakes. They can be used in granola, porridge, as well as in baking, cooking, and brewing.



Pearled

pearling involves a mechanical abrasion process to remove the hull. This process also removes some of the bran and germ layer where many of the minerals and micronutrients are located, so pearled barley is not considered a whole grain. The soluble fiber in barley is located throughout the grain and remains intact during the pearling process. An advantage of pearling is that it shortens cooking time.



Quick-cooking

a pearled barley or naked barley that has been par-boiled and then dried. This par-boiled grain is sometimes cracked into bulgur. Par-boiling grain reduces its cooking time.



Malted

malting is a modified germination process that involves putting the barley through a three step process: steeping, germination, and kilning. This process breaks down cell walls and produces enzymes that convert complex carbohydrates into simple sugars during the mashing step in the beer brewing process. Diastatic malt contains active enzymes and non-diastatic malt has no active enzymes. Diastatic malt is often added to help leaven breads.

Barley Terminology:

Hordeum vulgare

the Latin name for Barley. Hordeum is the genus and vulgare is the species

Beta-glucan

a soluble dietary fiber found primarily in barley and oats. Reported naturally occurring levels of β -glucan content in barley grain range from 2-11%, but most varieties contain between 4-7%. Numerous studies have shown that beta-glucan contributes to the health benefits of the barley grain.

Barley starch type

barley can either contain normal, "waxy", or high-amylose starch. Normal starch consists of a 3:1 ratio of amylopectin to amylose (both are polysaccharides with chemical and structural differences that comprise starch). Waxy starch is approximately 95% amylopectin and 5% amylose. High-amylose starch is approximately 45% amylose and 55% amylopectin. Starch type can affect the functionality of the barley flour during baking.

did you know....



In the 14th century, the king of England issued a decree that barley grains were to be used for measurement: an inch would be the measure of three barleycorns. Shoe sizing also became based on barleycorns: a shoe that measured 39 barleycorns became a size 39. This sizing still holds today.



The Irish ballad *The Wind That Shakes the Barley*, written by Robert Dwyer Joyce, refers to the fact that Irish rebels often carried barley or oats in their pockets as provisions. This led to the post-rebellion phenomenon of barley growing up from unmarked mass graves of rebels who had grain in their pockets. Subsequently, the crop began to symbolize the regenerative nature of Irish resistance to British rule.



Roman gladiators were known as *horearii* ("barley eaters") because they subsisted on barley bread.



Archaeological evidence suggests that barley was consumed in the Fertile Crescent both as a fermented dough that was ground into meal and mixed with spices and as an alcoholic drink. Barley beer was likely one of the first alcoholic drinks developed by Neolithic humans.



In Tibet, barley has been a staple food since the fifth century CE. Toasted barley flour, known as *tsampa*, is mixed with butter tea to form a stiff dough that is eaten in small balls, known as *pa*.



In 2006 the USDA-FDA approved a health claim for barley based on its ability to reduce cholesterol. It allows: "foods containing barley to claim that they reduce the risk of coronary heart disease. Specifically, whole grain barley and dry milled barley products such as flakes, grits, flour, and pearled barley, which provide at least 0.75 grams of soluble fiber per serving" (21 CFR 101.81)

recipes



whole grain | barley flakes | barley flour

basic steamed grain



difficulty: ★☆☆☆☆

For stove top cooking: use a ratio of 1 part barley: 3 parts water. Bring barley and water to a vigorous boil until water is almost gone and the grains are soft but still toothsome. Cover pot and let rest with low (or no) heat for 20 minutes. Approximate total cooking time is 40 - 60 minutes for 1 cup of barley. Drain any remaining water. Pearled barley will cook more quickly than naked barley.

For a rice cooker or Instant Pot: use a ratio of 1 barley: 3 water. Use the multigrain setting for approximately 22 minutes. There will be some leftover water to drain.

Steamed barley grain easily can be substituted in recipes calling for brown rice, wheat berries, or farro.

buttered barley with lemon

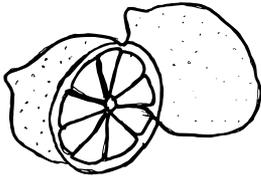


by Adrian Hale

serves: 2-4

difficulty: ★★☆☆☆

- 1/2 cup barley
- 4 cups water (or light chicken broth)
- 1 bay leaf
- 1 strip of lemon zest
- 1/2 teaspoon salt
- 4 tablespoons unsalted butter, divided
- 2 tablespoons walnuts, chopped
- juice of 1 lemon
- 2 teaspoons fresh dill, chopped
- Salt & pepper to taste



Put the barley in a blender or food processor and pulse it on high for a few minutes to crack the grain roughly. This will give you more access to the starchy parts when cooking and make this dish more risotto-like.

In a heavy-bottomed medium saucepan, combine the water, bay leaf, lemon zest, and salt. Bring to a boil, and then immediately reduce to a simmer.

In a separate pot, heat 2 tablespoons of butter on medium heat and drop in the cracked barley. Stir to coat with the butter and cook for about 5 minutes, stirring, until the butter and risotto smell toasty. Using a ladle, add about a cup of water to the barley and stir until the water is absorbed. Pour in the rest of the warmed water and bring to a swift boil. Cover, and reduce the heat to simmer. Let it gently simmer for about 30 to 40 minutes until tender. Remove from the heat and drain if there is excess water, leaving the grain in the pot. Cover with a kitchen towel, and replace the lid. Let it stand for about 10 minutes to steam and absorb any excess moisture.

Meanwhile, melt the remaining 2 tablespoons of butter in a small pan. Add the walnuts and toast until the butter is a bit browned and the walnuts are starting to smell irresistible. Remove from heat and add the lemon juice and dill. Season with salt and pepper. Serve immediately.

If you have leftovers, turn it into a delightful grain salad by adding leftover roasted seasonal vegetables, and/or whatever greens you happen to have lying around.

Savor with delight and gratitude.

winter barley salad



by Jordyn Bunting

serves: approx. 6

difficulty: ★☆☆☆☆

for the salad:

- 1 cup barley (hull-less, not pearled)
- 1 1/4 cups of hazelnuts
- 1 head cauliflower, base removed and chopped
- 2 cups Brussels sprouts, quartered
- Olive oil (or preferred oil for roasting)
- 1 head radicchio
- about 2/3 cup dried tart cherries
- seeds from 1 large pomegranate
- 1/2 cup of crumbled blue cheese (optional)
- Salt to taste

for the vinaigrette:

- 1/3 cup red wine vinegar
- 2 teaspoons Dijon mustard
- 1 shallot, minced
- 2 teaspoons miso
- 2 teaspoons fresh rosemary, minced
- 1 garlic clove, minced
- 3/4 teaspoon salt, adjusted to taste
- 1/4 cup canola oil
- 1/2 cup olive oil

Rinse the barley and add to a pot, covered, with about 3 inches of generously salted water. Bring to a boil over high heat, then reduce heat and simmer for about 1 hour. Check for doneness by biting a few kernels to see if the starch is cooked through. When kernels are soft but still have a toothsome bite, remove from heat and drain any remaining water.

While the barley is cooking: spread the hazelnuts evenly on a sheet pan and roast at 300° F for about 15 minutes, until toasty and fragrant. Rotate the pan and give the nuts a stir halfway through to prevent burning. Let cool completely before chopping. You can also place nuts in a bag and crush them with a rolling pin.

Raise the oven temperature to 375° F. Toss chopped cauliflower and Brussels sprouts in a bowl with a glug of olive oil and season them with salt to taste. Spread evenly on a sheet pan lined with foil (use multiple pans if needed to avoid overcrowding). Roast for about 25 minutes, or until fork tender and a bit crispy.

Cut the head of radicchio in half and lightly coat the cut side in oil. Season with salt to taste. Place cut-side-down on a sheet pan lined with foil. Roast at 375°F for about 15 minutes. Once it is cool to touch, roughly chop. For a bit of extra bitterness, you can leave a portion of the radicchio raw.

While the barley cooks and vegetables roast, make the vinaigrette (this can also be made days ahead of time). Combine red wine vinegar, Dijon mustard, minced shallot, miso, minced rosemary, minced garlic, and salt in a small bowl. Whisk together and slowly pour in oils while whisking to emulsify.

In a large bowl, combine the cooked barley, roasted vegetables, dried cherries, pomegranate seeds, chopped hazelnuts, and blue cheese (if using). Add about 1/2 cup vinaigrette. Toss to combine. Taste and season with salt, pepper, and more vinaigrette to your liking.

Serve and enjoy!



. . . customize your own barley salad. . .

Don't feel limited to winter flavors for this salad! Variations for all seasons can be made to fit what flavors are growing on your farmer's fields or in your kitchen garden. A grain salad is a perfect starting point for experimenting with what you have available and what tastes good to you. Here are some suggestions for how to tailor the ingredients list to create your own recipe:

acid

Choose any vinegar, lemon or other citrus, tamarind, kombucha, fermented vegetables along with their acidic brine, or pickled vegetables along with their pickling liquid.

crunch

Choose your favorite roasted nuts and seeds like hazelnuts, almonds, cashews, pistachio, sunflower seeds, pumpkin seeds, or pomegranate.

raw & roasted vegetables

Pick a mixture of textures and seasonal colors such as carrots, broccoli, brussel sprouts, parsnip, radicchio, tomato, green onions, celeriac, mushrooms, fresh or sautéed leafy greens, or arugula. This list is truly never ending.

sweetness

Another never-ending list like apples, pears, peaches, dates, nectarines, cherries, persimmon, figs, or various dried fruits.

salty & savory

There is more than one way to add salt and savoriness to dishes. Try adding Miso, Shoyu, or Tamari in the vinaigrette. Cheese is also easy to incorporate in these salads as a final topping. From shreds of hard cheeses like parmesan to your favorite crumbly cheeses like blue cheese or feta and to chunks of soft cheeses like burrata or brie. Olives and capers are also great ways to introduce salt.

herbs & spices

The combinations are endless and are easily incorporated by adding various fresh herbs & spices, dried herbs, mustard, ginger, garlic, chili flake, or really anything you have on hand that sounds good.

barley tempeh



by Jordyn Bunting

makes: two bricks of tempeh
(700 grams each)

difficulty: ★★★★★

Tempeh is a traditional Indonesian fermented food, often made from soybeans. Species of *Rhizopus* mold are used to create a cohesive brick, knitted together by mycelium, which can then be sliced and cooked. Other types of beans and grains can be used as well to make unique types of tempeh with different flavors and textures. Barley brings a great texture to the tempeh. There are entire books dedicated to teaching people how to make tempeh at home. I highly recommend purchasing *Miso Tempeh Natto & Other Tasty Ferments* by *Kirsten & Christopher Shockey* to learn the basics on how to make delicious tempeh at home.

- 250 grams whole grain barley (hull-less, not pearly) (1 generous cup)
- 400 grams dried chickpeas (2 cups)
- 30 grams (2 tablespoons) distilled vinegar
- 1 teaspoon *Rhizopus Culture**

*Can be purchased online from tempehstarter.com

Cook the barley and dried chickpeas separately until they are tender but not mushy.

Allow the beans and grains to cool completely. If there is a lot of moisture remaining, place on a sheet pan in front of a fan or use a hair drier to dry them up. You don't want them to be bone dry, but not wet either.

Add the vinegar and tempeh culture and stir well.

Divide the mixture into 2-quart size freezer bags, punctured with holes throughout using the tip of a knife

Place the bags in a dehydrator at 85-95°F for 24 hours, followed by 75°F for an additional 16-24 hours. Take out of the dehydrator when the white mycelium has covered nearly all the beans and grains.

If you see black spots appear (likely near the holes in the bag), those are *Rhizopus* spores and are perfectly safe. This is an indicator that your tempeh is definitely finished and ready to be cooked.

You can slice the tempeh bricks into rectangles and cook them in a pan with oil and salt, searing both sides on a medium high heat for about 2 minutes per side.

marinated tempeh

w. cilantro & ginger sauce



by Jordyn Bunting

difficulty: ★★★★★

This recipe makes enough to marinate the tempeh recipe above, plus a little extra to use as a sauce for other dishes. I like to use about 3/4 cup of marinade per block of tempeh. Marinated tempeh is great on its own or served alongside rice dishes like fried rice or grain bowls. The cilantro & ginger sauce pairs very well with barley chickpea tempeh and is very versatile to dress a variety of dishes

For the marinade:

- 1/2 cup gochujang (fermented red chili paste)
- 1 cup soy sauce
- 1/2 cup rice vinegar or other acidic liquid of your choice

For the sauce

- 1 bunch of cilantro, roughly chopped leaves and small stems
- 3/4 inch fresh ginger, minced
- 1 clove garlic, minced
- 6 green onions, roughly chopped
- 1 small serrano pepper, chopped(optional)
- 2 1/2 tablespoons vinegar of your choice
- 1 1/2 tablespoon olive oil
- 1 teaspoon salt

Make the marinade by whisking all ingredients together by hand or in a blender (makes about 2 cups of marinate).

Cut one block of tempeh into rectangles that are about 1/2-inch thick and place slices in a large plastic bag.

Pour about 3/4 cup marinade into the bag with the tempeh. Seal the bag and gently massage the marinade so it surrounds all the tempeh. Keep it stored in the refrigerator for at least a few hours or up to a week.

While the tempeh is marinating, make the sauce. Add all the ingredients into a food processor or blender and blend to your desired consistency. You can thin down with water if you want. Add additional salt or vinegar to taste.

To serve, take out the amount of slices you want to cook and wipe off excess marinade.

Heat oil in a pan over medium-high heat. Place tempeh slices in pan and cook each side until well crisped, about 2 -3 minutes per side.

Top slices of tempeh with a generous portion of cilantro & ginger sauce and enjoy!

barley cornbread



by Dillon DeBauche

makes: one 9x5 inch loaf

difficulty: ★★☆☆☆

- 1 cup (120 grams) Red Flint Cornmeal
- generous 3/4 cup (125 grams) barley flour
- 1/2 cup (50 grams) pastry flour
- 1/2 teaspoon baking soda
- 1/2 teaspoon baking powder
- 1/2 teaspoon salt
- 1 cup (240 grams) buttermilk
- 1 large egg
- 2 tablespoons honey(40 grams)

Preheat the oven to 400° F. Butter a 9x5 inch loaf pan

In a medium bowl, mix cornmeal, barley flour, pastry flour, baking soda, baking powder and salt together.

In a separate bowl, mix buttermilk, egg, and honey together and mix well.

Make a well in the dry ingredient and add the liquid mixture. Mix with a rubber spatula until combined.

Pour into prepared loaf pan.

Bake for about 20 minutes, until golden on top and a toothpick inserted in the center comes out clean. Remove from oven and allow to cool in pan for 5 minutes. Turn out from the pan and transfer to a cooling rack.

Slice and enjoy, perhaps warm and slathered with butter!

barley crêpes



by Kim Boyce

makes: 14 crêpes

difficulty: ★★☆☆☆

Whole grain expert and James Beard Award winning pastry chef, Kim Boyce recommends you slather these crêpes with homemade apple butter (see page 198 of Kim's book, *Good to the Grain*, for her recipe) and have them at the end of a meal for dessert, served with the rest of the beer.

- 3/4 cup whole milk
- 1/2 cup medium-bodied beer
- 2 tablespoons unsalted butter, melted and cooled slightly
- 2 teaspoons unsulphured molasses (not backstrap)
- 2 eggs
- 1 cup barley flour
- 1/2 teaspoon kosher salt

Note:

Crêpe batter can be made in advance and chilled for up to one day. Before you griddle the crêpes, bring the batter to room temperature. This may take about two hours - be patient, for it's very important to the success of this recipe. Room-temperature crêpe batter will yield a crêpe that is lighter and thinner than one made with chilled butter.

In the order listed, measure all the ingredients into a blender jar. Blend the batter until it is smooth and free of clumps. Pour the batter into a bowl or a pitcher. Cover and leave the batter at room temperature for at least 1 hour.

Use a spoon to stir the batter together, incorporating any of the liquid that may have separated.

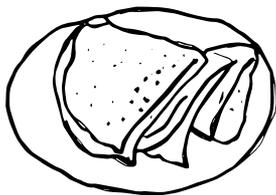
Heat an 8-inch cast-iron or nonstick pan over medium high heat until a splash of water sizzles when it hits the pan. Rub the pan with butter and hold it at an angle so the handle is close to your body and tilted up, with the edge across from the handle tilted down toward the flame.

Using a 2-ounce ladle or 1/4 cup measuring cup, scoop up some batter. Pour the batter just off-center in the pan and quickly swirl it around, aiming for one circular motion that creates a thin, even spread of batter in the pan. Do not add more batter to make up for empty space.

Cook the crêpe for about 1 minute, until the batter begins to bubble and the edges begin to brown. Slide a metal spatula along the edge to loosen the crêpe, pinch the edge, and flip the crêpe over in one motion. Cook for 45 seconds longer, or until the crêpe is speckled brown and crisp around the edges.

The crêpes are best eaten straight from the pan after being folded in half and then in half again, making frilly-edged triangles.

If the crêpes are made in advance, lay them individually on a baking sheet in a 400°F oven for 5-6 minutes, or until they are warm and tender. The crêpes can also be warmed individually in a pan. They can also be frozen, with parchment paper layered between each crêpe, wrapped tightly in plastic.



friselle crackers



by Adrian Hale

difficulty: ★★☆☆

According to legend, this is the bread of travelers that was brought from ancient Greece to the Italian region of Puglia by Aeneas. It is baked twice and can easily be mistaken for a bagel that is as hard as a cracker. Don't be fooled. This bread can be packed away until ready to serve, in which time you soak the puck in either salt water, or if the season is right, tomato water. I like to think of this bread as the breezy first bruschetta that sailed over the ocean blue.

- 300 grams water or (for something really special) wine (1 1/4 cup)
- 30 grams sourdough starter (1/4 cup) (or 1/8 teaspoon instant yeast)
- 250 grams durum flour (1 1/2 cups)
- 250 grams barley flour (1 1/2 cups)
- 30 grams olive oil (1/4 cup)
- 10 grams salt

Mix all the ingredients together and let the dough rest for one hour. Wet your hands, and fold the dough by imagining the bowl in front of you as a clock. Stretch the dough at the 9 o'clock position by pulling it up as far as it can stretch without tearing, and then fold it onto itself so that the tip of the stretched dough is now in the center of the bowl. Repeat this process with the 3 o'clock position, then the 12 and 6 o'clock positions. Let it rest overnight.

In the morning, it should be close to doubled in size. Divide the dough into 8 equal pieces about 100 to 110 grams each. Roll each piece into a rope and wrap it around your hand to make a ring. Press the ends of the rope together and let it rest on a baking sheet for an hour.

While the frisella are resting, heat the oven to 450°F.

Bake the rings for 15 minutes until puffed and cooked through. Remove to a cooling rack and cool to room temperature. Meanwhile, lower the oven temperature to 350°F.

When cool to the touch, slice each frisella in half and bake again for 30 minutes until crispy and hard.

Let cool completely and store in an airtight container at room temperature.

When you're ready to eat, dip the frisella in salted water to soften, or for an extra special treat during tomato season, use tomato water with a splash of balsamic. Top with your favorite fresh vegetables and enjoy like a weary traveler.

barley graham crackers



by Annie Moss

difficulty: ★☆☆☆☆

- 2 1/2 cups + 2 tablespoons barley flour
- 3/4 cup brown sugar
- 1 teaspoon baking soda
- 1 teaspoon salt
- 7 tablespoons cold butter
- 1/3 cup honey
- 5 tablespoons milk

Preheat oven to 350°F.

In the bowl of a food processor, combine flour, brown sugar, baking soda, and salt in the bowl of a food processor. Pulse on low to mix. Add butter, in cubes, and pulse several times until the mixture is the consistency of coarse meal.

In a small bowl, whisk together milk and honey. Add to flour mixture and pulse a few times, until it just comes together. It will be soft and sticky.

Put dough on a floured piece of plastic. Form into a 1 inch thick rectangle. Wrap and refrigerate, 2 hours or overnight.

Once fully chilled, roll out dough to 1/8 inch thick. Try to maintain a roughly rectangular shape. Flour surface of counter, dough, and rolling pin as necessary to prevent from sticking. Trim edges, then cut dough into crackers 2 1/2 by 3 1/2 inches. Work quickly, so the dough doesn't get warm. Finished crackers can be baked immediately or chilled or frozen on a sheet tray until you're ready to bake.

Any scraps of dough can be kneaded together and re-chilled until firm again. Then re-roll and cut into into crackers as above.

Before baking, use a toothpick, fork, or skewer to poke holes in each cracker. Bake for about 6-8 minutes, until lightly brown. They will be soft when pulled from the oven, but should crisp when they cool.

Enjoy!

barley shortbread



by Andrew Ross

makes: one 8 x 8 pan

difficulty: ★★☆☆

- 2 3/4 cups whole grain barley flour
- 1 1/4 teaspoon salt
- 1 teaspoon baking powder
- 1/2 cup sugar
- 1 1/8 cups (2 1/4 sticks) unsalted butter

Preheat oven to 325°F. Butter a 8'x8' baking pan

In a medium mixing bowl, mix flour, salt, and baking powder.

Cream the butter and sugar together in the bowl of a stand mixer with the paddle attachment (this step can be done by hand if you do not have a mixer).

Fold the dry ingredients into the butter and sugar mixture and mix until a dough just comes together.

Press the dough into the prepared pan.

Bake until a toothpick comes out clean and the shortbread is golden brown.

Allow shortbread to cool 5 to 10 minutes then cut into whatever shape you desire with a dull knife.

flaked barley cookies

w/ dark chocolate & sea salt



by Katie Gourley

makes: -24 cookies

difficulty: ★★☆☆☆

This recipe uses 100% whole grain barley flour as well as flaked streaker barley, resulting in twist on a oatmeal chocolate chip cookie that highlights the terroir and flavor of Pacific Northwest regional grains.

- 1 cup barley flakes
- 2 cups barley flour
- 1 1/2 teaspoons baking powder
- 1 teaspoon baking soda
- 1 1/2 teaspoons fine salt
- 1 cup (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 teaspoons vanilla extract
- 6-8 ounces dark chocolate, coarsely chopped from a bar
- Flakey sea salt, such as Maldon

notes

I recommend using an extra dark (80-85%) chocolate. I like how the sharp bitter and acidic notes of super dark chocolate compliment the sweet nuttiness of the barley flour,

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

Toast the barley flakes in a heavy-bottomed skillet. Cook over medium heat for about 5-7 minutes, stirring frequently, until the flakes become golden brown and smell very fragrant and nutty. Watch them carefully because they can go from perfectly toasted to burnt quickly.

Mix the barley flour, toasted flakes, baking powder, baking soda, and salt in a medium bowl with a whisk or fork.

In the bowl of a stand mixer with the paddle attachment, or with a hand mixer, beat the butter and sugars together until just creamy. Use 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 in three batches, mixing on slow speed until the flour is just incorporated.

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

Using a large spoon or ice cream scooper, measure out mounded balls of dough (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 flakey salt and use your fingers to press the salt lightly into the dough so it doesn't slide off while baking.

Bake for 15-18 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 (if you have the patience) allow to cool fully on a wire rack and store in an airtight container for up to about 4 days. The barley flavor in these cookies seems to continue to mature and develop after a few days on the counter.



barley sandwich loaf



by Dillon DeBauche

makes: one 9 x 5 inch loaf

difficulty: ★★☆☆

Dillon is one of the most experienced bread bakers we know, and he also works at a mill in Oregon that uses a diverse range of grains, which he gets to test for the rest of us. He generously provided this recipe for sandwich loaves that use a high percentage of barley. We are providing cup measurements, but if you really want these loaves to shine, do it how Dillon and bakers the world over do it: use a scale. Volume measurements just don't quite translate when it comes to bread.

For the levain:

- 100 grams Purple Valley Barley Flour (or other naked barley flour) (1 cup)
- 100 grams Water (1/2 cup)
- 25 grams active sourdough starter, refreshed and 'active' (1/4 cup)

For the final Dough

- 500 grams T85 sifted White Wheat flour (4 cups)*
- 450 grams water (2 cups)
- 225g levain (all of what you made from above)
- 12 grams salt (2 teaspoons)

* This is available from Camas Country Mills sold as "Sifted Flour" this can also be substituted with any sifted or bread flour you have available.

Mix all ingredients listed for the levain together until combined.

Leave at a warm room temperature, loosely covered with a wet tea towel or plate for 8-12 hours.

Mix all the ingredients, including the full amount of the levain from above. Make sure there are no hidden pockets of dry flour and that the water is well-incorporated. Cover the bowl and let it rest at room temperature for 30 minutes to 1 hour to let the water absorb and the gluten start to develop.

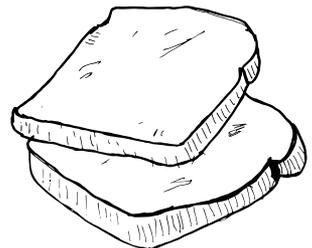
Fold the dough by stretching one side up and back over itself. Turn the bowl a quarter turn, and repeat this action at every quarter until all surfaces of the dough have been worked.

Cover and refrigerate for 18 hours.

When you're ready to bake, butter a loaf or Pullman pan and roll the dough into a loaf shape. Place in the prepared pan and let the dough rise at room temperature until it just about fills the pan. Cover with the Pullman pan top or a foil tent.

Bake at 450°F for 20 minutes covered. Remove the lid or foil and bake for an additional 20 minutes.

Remove to a rack and let cool completely before slicing. Enjoy within a week.



barley porridge sourdough



by Jordyn Bunting

makes: two boules

difficulty: ★★★★★

There are few things more satisfying and hearty than a thick slice of grilled porridge bread. This recipe was adapted by Jordyn from *Tartine No. 3* by Chad Robertson. Porridge breads keep remarkably well without getting stale because they hold onto a lot of moisture. You will really get appreciate the taste of barley in this bread. This recipe assumes some experience and familiarity with sourdough bread baking and therefore ingredients are given in weight measurements.

for the levain:

- 100 grams whole grain wheat flour
- 100 grams all purpose flour
- 200 grams water
- 15 grams sourdough starter, refreshed and 'active'

for the barley porridge:

- 250 grams flaked barley
- 500 grams water
- pinch of salt

for the autolyse:

- 250 whole grain wheat flour
- 750 grams all purpose or bread flour
- 750 grams water
- 150 grams levain (from above)

for the final dough

- all of autolyse (above)
- 25 grams salt
- 500 grams cooled barley porridge

The following instructions are based on maintaining a dough temperature of around 82° F. Your fermentation times will vary if your environment is colder or warmer than this.

Two days prior to baking, begin by feeding your sourdough starter every 12 hours while storing it at room temperature. (For my feedings I use 50 grams whole wheat flour + 50 grams all purpose flour + 100 grams water + 50 grams starter)

One day before baking: In the morning, use your active starter to make the levain by adding all the ingredients listed for the levain. Allow to develop at a warm room temperature for about 4-5 hours. To test if it is ready, take a small spoonful and place it in a bowl of water. If it floats, it is ready to use in your final dough. If it sinks, allow it more time to develop.

While the levain is fermenting, make the porridge by combining the barley flakes, water, and salt in a pot. Bring to a boil and then reduce the heat to a simmer and cook for about 7-10 minutes, stirring every so often to prevent sticking on the bottom. When cooked, remove from heat and empty out onto a large sheet pan so it can cool down. You will have leftover porridge, so save leftovers and eat similar to how you would oatmeal. Note: Do not add hot porridge to your bread dough!

Once your levain is ready, it is time to autolyse. Mix together all of the ingredients listed for the autolyse in a large ceramic or glass bowl (avoid using metal). Loosely cover with a wet tea towel and allow to sit at warm room temperature for an hour. Store the remaining levain in the refrigerator and use it as a new starter for future sourdough baking.

After an hour, add the salt and mix it into the dough by pinching and folding the dough onto itself.

Get your hands wet and grab the underside of the dough and stretch it over to the top side of the dough. Rotate your container 1/2 turn and repeat 3 times to make a full circle of folds. This is your first "stretch and fold". You will perform 6 sets of folds over the course of the bulk ferment, which will take 3-4 hours. Perform a fold every 30 minutes until you reach 6 folds.

continued on next page...

...barley porridge loaf continued

After the second fold, add the cooled barley porridge into the dough. Break up any large chunks of porridge and thoroughly mix it into the dough during folding.

After the sixth set of folds let the bulk ferment continue for another half hour to an hour. The dough should have increased in volume by about a third and appear billowy.

When the bulk ferment is finished, turn the dough out from the bowl onto a floured countertop. Flour the top of the dough lightly and cut evenly into two pieces. Pre-shape the dough into round balls using a bench scraper. Allow to rest covered in a wet towel for 20 minutes.

Generously flour two banneton proofing baskets (or use two bowls lined with tea towels). I use a 50/50 mix of wheat and rice flour (which is more absorbant) for this step.

After a 20 minute bench rest, use a bench scraper to flip the dough over so the floured side is down on the countertop. Take the bottom of the dough and fold it up about 1/3 of the way. Fold in the two sides in a similar manner. Finally, fold the top portion of the dough to the center on top of the other folds. Flip the dough over so the seam side is down and pull the round towards yourself using cupping motion with your hands so it builds tension on the top of the dough. Allow to rest for a few minutes so the seam can seal.

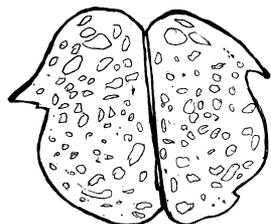
Transfer to the floured proofing baskets, seam side up. Cover loosely with a towel or large plastic bag and let slowly ferment in the refrigerator for 12-14 hours.

When ready to bake, preheat the oven to 500°F with a dutch oven with the lid on inside. Allow to get up to temperature for 30 minutes. Carefully flip your dough into the dutch oven, seam side down. Score the top of the dough using a sharp blade and replace the lid on the dutch oven.

Bake for 20 minutes at 500°F. Turn down the heat to 450° F and bake for 10 minutes. Remove the lid and admire. Bake for another 15 minutes with the lid removed. Remove the dutch oven and carefully transfer to cool on a wire rack.

Wipe out any residual flour in the dutch oven carefully with a towel and replace the lid. Raise the oven temperature back to 500°F with the dutch oven inside. Repeat the baking process for the second boule.

Enjoy! In my opinion, this bread is best eaten after a day's rest because it takes some time for the flavors to settle.



barley milk



by Jordyn Bunting

makes: ~7 cups

difficulty: ★★☆☆☆

This dairy free beverage is a alternative to oat milk and makes a great fiber-rich replacer to half and half/cream. If desired, you can toast about 1/4 cup of the barley flakes prior to beginning the recipe, which changes the flavor to be more toasty and nutty rather than grassy.

- 2 cups barley flakes
- 7 1/2 cups water
- 1 1/2 tablespoons maple syrup
- Pinch of salt

Combine flakes with the water and let soak in the fridge for 4 – 6 hours.

Blend in blender until the flakes are all broken up finely and it resembles porridge.

Pass through a nut milk bag or cheesecloth and squeeze to get as much liquid as possible.

If the final beverage is too thick to your liking, just add water until it reaches your desired consistency.

Add salt and maple syrup to filtered barley milk. Whisk to combine. Keep refrigerated and enjoy on its own or add it to anything where you add cream such as coffee. You will need to shake it before each use since it will separate into layers.

roasted barley tea



from The Barley Project

makes: 1 liter

difficulty: ★☆☆☆☆

Looking for a healthy and tasty beverage with no caffeine or alcohol? Hot or cold, roasted barley tea could be the answer. For thousands of years, roasted barley tea (maicha, mugicha, and boricha in Chinese, Japanese, and Korean, respectively) has been a staple in Asia. It is both satisfying and reported to be healthful. You can buy barley that is already toasted or toast your own at home by sourcing naked or pearled barley from the bulk bins at your local grocery store.

- 50 grams roasted barley kernels
- 1 liter water

If using un-roasted barley, toss washed grains into a heavy skillet and toast on medium-high heat, stirring frequently until the grains are an even shade of dark golden brown.

Boil 50 grams roasted whole grain in 1 liter of water for 15 minutes; pour the tea through a strainer to separate the liquid from the boiled grains.

Barley tea can be enjoyed hot or chilled.

roasted barley kombucha



from The Barley Project at
Oregon State University

makes: ~7 cups

difficulty: ★★☆☆

Kombucha is a fermented, lightly effervescent tea drink. This recipe was developed by Barley World at Oregon State University using barley roasted in a drum roaster. The roasted barley available online may come in a different roast profile. Practice brewing your source of roasted barley first to find a strength you like then scale up to the water weight of this recipe.

- 16.5 grams roasted barley for tea (can be purchased online) (1 heaping tablespoon)
- 100 grams sugar (1/2 cup)
- 750 grams water, divided (3 cups)
- 85 grams mature kombucha with a living SCOBY (1/4 to 1/2-inch thick)

Combine sugar with 150 grams of the water in a pot. Bring to a boil until the sugar is dissolved.

Add the roasted barley and remove from heat. Let steep for at least 5 minutes. Steep longer for a stronger flavor.

Add the remaining 600 grams of water to the pot to it cool down.

Pass through a fine mesh filter to strain out the barley kernels into a large jar or similar vessel that you will ferment in.

Once the mixture reaches room temperature, add the mature Kombucha along with the SCOBY.

Allow to ferment at room temperature or in a warm environment for 10 -14 days or until the taste is to your liking. The length of fermentation time is highly dependent on the temperature. In a room at 85°, it will take about 10 days to ferment.

Remove SCOBY from the jar and pass the tea through a fine mesh filter into a bottle. If you would like to produce a more carbonated beverage, perform a second fermentation in a flip-top sealed jar

Refrigerate and enjoy!

about the contributors

Adrian Hale (battered barley with lemon; friselle crackers)

is a longtime food writer with an obsession for baking bread with locally-grown, stone-milled flour. Over the years, she's been published in magazines such as *Saveur*, *Edible Portland*, *Culture*, and others. She runs *Thousand Bites of Bread*, a blog dedicated to uncovering local grain sheds and how they connect to the larger picture of what we eat. She is also involved in leading the Portland Whole Grain Bakers Guild.

Annie Moss (barley graham crackers)

co-owns *Seastar Bakery + Handsome Pizza* in Portland, Oregon, with her two devastatingly handsome business partners, Katia and Will. When she's not running a restaurant and baking professionally, she bakes at home, gardens ferociously, organizes for equitable distribution of wealth, loves her cats, crafts, and moves her body all around.

Andrew Ross (barley shortbread cookies)

is a baker, scientist, and teacher. He has been a Professor in the Crop and Soil Science Department at Oregon State University for 17 years where he is the quality specialist for the Wheat and Barley Breeding programs and a Professor in the Food Science Department. For the past 35 years, Andrew has worked with, studied, and taught about the sciences of baking and cereal-based foods across the globe.

Dillon DeBauche (barley cornbread, barley sandwich loaf)

is a Wisconsin expatriate and bread baker of 18 years. Currently he is the head baker at *Camas Country Mill and Bakery* in Junction City. Dillon has been a baker in many kitchens in the Northwest, including as head baker at *Little T American Bakery*.

Kim Boyce (barley crêpes)

is the James Beard Award winning pastry chef and owner of *Bakeshop*, a retail and wholesale bakery in Portland specializing in whole-grain pastries, pies and more. Kim is also the author of the cookbook, *Good to the Grain: Baking with Whole Grain Flours*.

Katie Gourley (flaked barley cookies w/ dark chocolate & sea salt)

is a baker, writer, zine maker and biodiversity activist. She is also involved in leading the Portland Whole Grain Bakers Guild.

Jordyn Bunting (winter barley salad, tempeh, roasted barley kombucha, barley porridge sourdough)

Jordyn is a Food Science & Technology Master's student and studies food quality and applications of barley as part of the OSU Barley Breeding Program.

further reading

Cookbooks

- *Go Barley: Modern Recipes for an Ancient Grain*, by Linda Whitworth (focused on pearled barley)
- *Barley is Better: 160 Recipes and 100 Vegan Alternatives Made with the World's Healthiest Grain*, by Rosemary and Walter Newman (focuses on pearled barley)

Other books

- *Barley for Food and Health: Science, Technology, and Products*, by Rosemary and Walter Newman
- *One Man's Life with Barley*, by Harry Harlan

Research articles:

- Meints, B. and Hayes, P.M., 2019. Breeding Naked Barley for Food, Feed, and Malt. *Plant Breeding Reviews*, 43, pp.95-119.
- Meints, B., Cuesta-Marcos, A., Fisk, S., Ross, A. and Hayes, P., 2016. Food barley quality improvement and germplasm utilization. In *Exploration, Identification and Utilization of Barley Germplasm* (pp. 41-73). Academic Press.

Websites:

- barleyworld.org
- eorganic.info/barley
- gobarley.com

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- Facebook and Instagram: @barleyworld, @multibarley

