



Fond du Lac Public Library

## Breads of the World: U.S. sourdough

Presented 9/19/2017 by David Demezas

**Sourdough bread** is the oldest-known type of leavened bread, dating back to ancient Egypt. French bakers brought the sourdough technique with them to California during the Gold Rush, and prospectors took it along to Alaska when following the trail to gold.



### First, the starter

Sourdough starter (also known as mother culture, sourdough mother or chef) is composed of naturally-occurring yeast and bacteria that inhabit the flour and are floating in the air around us. These yeast and bacteria are responsible for creating the carbon dioxide that causes the bread to rise and the flavor compounds that give the bread its distinctive taste and aroma.

#### Notes:

- For making sourdough, ideal room temperature is 72-78 degrees. A colder home will mean slower proofing times; warmer, shorter
- All temperature measurements in this handout are in Fahrenheit

### Developing your own sourdough culture

From [thefreshloaf.com](http://thefreshloaf.com). This is only one of many different methods that you can find online or in books about sourdough.

1. **Day 1:** In a quart-size canning jar, combine 15 grams (2 Tablespoons) of whole wheat flour (or rye) with 30 grams (2 Tablespoons) of pineapple juice. Mix until smooth. Let stand for 24 hours at room temperature.
2. **Day 2:** Add 15 grams (2 Tablespoons) whole wheat flour (or rye) and 30 grams (2 Tablespoons) pineapple juice. Mix until smooth. Let stand for 24 hours at room temperature.
3. **Day 3:** Add 15 grams (2 Tablespoons) whole wheat flour (or rye) and 30 grams (2 Tablespoons) juice. Mix until smooth. Let stand for 24 hours at room temperature.
4. **Day 4 and once daily** until it starts to expand, form lots of bubbles and smell yeasty, usually in 4-6 days or up to 2 weeks; longer is better: Combine 56 grams (5 Tablespoons) of the starter from day 3 with 28 grams (4 Tablespoons) of whole wheat flour and 28 grams (2 Tablespoons) of water in a pint-size canning jar. Mix until smooth. Let stand for 24 hours at room temperature.

### Maintaining (feeding) your sourdough starter

Combine 10 grams (1 Tablespoon) of starter with 45 grams (6 Tablespoons) of whole wheat flour and 45 grams (3 Tablespoons) of water in a pint-size wide-mouth canning jar. Mix thoroughly. Let sit at room temperature for about 12 hours; the starter should double or more in volume. When it does, put the starter into the refrigerator. Feed starter weekly, e.g., every Saturday.

#### Sourdough starter notes:

1. A sourdough purist may use water instead of pineapple juice. My experience has been that using a bit of pineapple juice increases the probability of making a strong starter.

2. Water contains chlorine that is harmful to the yeast and bacteria found in your starter. You can use filtered water or let the water sit for 24 hours to allow the chlorine to dissipate. Do not use water that has been through a water softener!
3. If you forget about your starter or go on an extended vacation, don't fret it: the starter will be OK. Some folks have neglected their starters for month or longer. A liquid may form on the surface when the starter is neglected. This liquid is called "hooch" because it is alcohol (yeast in the starter make alcohol) and can either be discarded or incorporated into the starter before removing 10 grams of the starter to rejuvenate it. I would feed a neglected starter every 12 or 24 hours for a couple of days to make it feel loved before going back to my weekly feeding schedule.
4. I maintain my starter as described above. There are many variations on maintaining a sourdough culture online and in books. My philosophy is that I do not want to be a slave to the culture. A purist would feed the culture every 12 hours.

## 1, 2, 3 sourdough bread recipe

This is the recipe I will demonstrate in the workshop. It makes a nice loaf of sourdough bread using three ingredients: flour, water and salt. Total prep time is 5.5-6.5 hours if mixed and baked in a single day or 3.5-4.5 hours if mixed one day and an additional 1.5 hours when baked the next. Time estimates for bulk fermentation and proofing can vary significantly due to your house's room temperature.

### Equipment

- 4-quart bowl with a cover, preferably glass
- Scale that measures in grams (highly recommended) or measuring spoons
- 2- or 4-cup glass measuring cup
- 2 clean pint-size canning jars
- Dough scrapers for working with the dough
- Serrated knife or razor on a swizzle stick for scoring the dough
- Parchment paper
- Small dessert plate
- Covered baking dish of choice: Dutch oven (make sure the knob on the top can withstand 475 degrees), ceramic cloche, Romertopf clay baker or Lodge cast iron ComboCooker
- Proofing basket for creating dome shape: willow banneton (examples at right) or colander or small mixing bowl lined with muslin towel
- Small mesh strainer (3-inch) or sifter for dusting the proofing basket
- Digital thermometer, optional



## Ingredients (see chart, below, for amounts)

- Sourdough starter
- Unbleached bread flour
- Whole wheat flour
- Dechlorinated, filtered tap water
- Salt
- Dusting flour (mixture of equal weights of whole wheat flour and rice flour)

## Day 1

The first step takes a full day to use your starter to build the levain, the source of yeast and bacteria for the dough.

1. **At 10 am:** In a pint-sized jar, combine 20 grams (2 Tablespoons) starter, 40 grams (3 Tablespoons) water and 60 grams (8 Tablespoons) whole wheat flour. Let sit on counter at room temperature for 12 hours.
2. **At 10 pm:** In a second pint-sized jar, combine 20 grams (2 Tablespoons) starter from the first jar, 40 grams (3 Tablespoons) water and 60 grams (8 Tablespoons) whole wheat flour. Let sit on counter at room temperature for 10-12 hours.

## Day 2

Dough recipe ingredients	Amounts
Levain (from 2 <sup>nd</sup> jar above)	100 grams (slightly more than ½ cup)
Water	200 grams (slightly more than ¾ cup)
Unbleached bread flour	300 grams (2.5 cups)
Salt	7 grams (heaping teaspoon)
Total	607 grams

1. 8 am (0 hour): Combine 100 grams (slightly more than ½ cup) of the levain, 200 grams (slightly more than ¾ cup) of water and 300 grams (2.5 cups) unbleached bread flour in a 4-quart mixing bowl. Mix thoroughly with your hands. This mixture will be very sticky. Cover and let stand for 1 hour. This step is called autolyze; it allows time for the dry ingredients to absorb water fully.
2. 9 am (1 hour): Add 7 grams (1 heaping teaspoon) of salt and use the stretch-and-fold method to mix the salt into the dough. Stretch and fold numerous times to thoroughly mix the salt with the dough. This is the beginning of bulk fermentation.
3. 9:30 am (1.5 hour) and again at 10 am (2 hour): Stretch and fold the dough. Cover the bowl and let stand at room temperature between each stretch-and-fold session.
4. 11:30 am (3.5 hour): Lightly dust the counter with the dusting mix and form dough into a tight ball. Cover with a tea towel and let sit on floured counter for 30 minutes.
5. Noon (4 hour): Reform the dough into a tight ball and place into a proofing basket, colander or bowl – something to keep the dough from flattening out – that has been dusted with dusting flour mix (see note, below). Cover the bowl and let sit on the counter at room temperature for 2 hours (proofing stage) or 12-24 hours in the refrigerator (retarding stage).
6. Place your baking dish into the oven and preheat oven to 450-475 degrees for 45-60 minutes.

7. After the proofing/retarding stage, turn dough out of the bowl onto a piece of parchment paper supported by the dessert plate.
8. Score the top of the loaf with a razor blade or serrated knife and carefully place it into the preheated baking dish using the parchment paper as a sling.
9. Bake for 20 minutes covered. Uncover and bake an additional 15-20 minutes until the crust is dark brown or to your liking.
10. Test for doneness by inserting the digital thermometer into the bread in several different places. The internal temperature should be 211-212 degrees. Alternatively, thump the bottom of the loaf; it should sound hollow.

#### **Baker's notes:**

1. The 10-12-hour old starter is technically called levain, a French term for a mixture of flour and water that is colonized by yeast and bacteria.
2. Keep your hands wet to prevent dough from sticking, particularly when mixing and stretching and folding.
3. I use King Arthur brand flours and Morton's sea salt without iodine. Iodine is an antimicrobial and can harm the yeast and bacteria in your starter.
4. I find a digital thermometer is very useful. I use a ThermoPen, made by ThermoWorks. There are all sorts of others that work just as well.
5. I encourage you to maintain a diary to record recipes, procedures, dough temperatures and times of bulk fermenting and proofing. A diary will allow you to get a better feel of the effects of time and temperature on the feel of the dough and the resulting loaf. Also, critique each loaf as to its crumb and taste. I take pictures of each finished loaf and the interior crumb.
6. Making sourdough bread is as much an art as a science. With more experience, you will learn to feel the dough and make decisions on when the dough is done fermenting or proofing by the feel of the dough.

#### **Book and web resources:**

- *Bread: A Baker's Book of Techniques and Recipes* by Jeffrey Hamelman (@ FDLPL: 641.815 H178 2013)
- *Tartine Bread* by Chad Robertson (@ FDLPL: 641.815 R545 2010)
- [Breadtopia.com](http://breadtopia.com)
- [TheFreshLoaf.com](http://thefreshloaf.com)
- [NorthwestSourdough.com](http://northwestsourdough.com)
- [KingArthurFlour.com](http://kingarthurfLOUR.com)
- [TheCleverCarrot.com](http://theclevercarrot.com), specifically <http://www.theclevercarrot.com/2014/01/sourdough-bread-a-beginners-guide/>
- [Perfect Sourdough](#) Facebook group of helpful and inspiring people
- Stretch and fold technique video *Sourdough Folding Method* posted by Cup of Flour: <https://youtu.be/1DEKIBYimIQ>
- Google is your best friend: tons of information is available online

#### **Developing a starter**

- <http://www.thefreshloaf.com/node/10901/pineapple-juice-solution-part-2>
- <https://breadtopia.com/make-your-own-sourdough-starter/>
- <https://breadtopia.com/wp-content/uploads/2016/04/Pineapple-Juice-Solution.pdf>