

Knowledge @ Noon

Simply Sourdough: Starters & Such!



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Sourdough

Sourdough, a yeasty starter for leavening hot cakes, waffles, muffins, bread and even cake, is also a word for an Alaska old-timer. For these early Alaskans, who lived alone or in small groups of three or four while mining, trapping or homesteading, sourdough became their staff of life. Bread could not be made without it, so the starter became a precious possession.

Food supplies came once or twice a year by ship. The food supplies were off-loaded to small boats, river steamers, dogsleds or backpacks to reach remote coastal or Interior Alaska destinations. Orders were placed a year in advance and foods were selected for keeping qualities as the arrival time often proved uncertain.

If yeast supplies ran out, replacements could be a long time in coming, especially if unseasonable ice formation and heavy wind or seas delayed a ship's entry into rivers or ports of call. Ordinary yeast plants, sensitive to the extreme cold, refused to grow well, while the combination of wild or adapted yeast in the sourdough starter proved as tough as its old-timer namesake. Or did the old-timer resemble and get his name from the indomitable sourdough starter? Choose whichever theory you prefer.

Sourdough Starters

A good starter contains only flour, water and yeast. It has a clean sour odor. When it stands several days, the liquid will separate from the batter. This does not matter; just stir it in and feed it.

Starters can be made from any type of flour. How-

ever, the type of flour used will make a difference in flavor and how it works in recipes. The recipes in this publication use wheat flour.

Commercial sourdough starters are dried and powdered. Adding water brings it to life. In growing, the yeast gives off carbon dioxide gas, which forms bubbles in sourdough or any other yeast dough.



To start sourdough

You can make your own starter and sponge with this simple recipe:

2 cups flour
2 cups warm water
1 package dry yeast

In a quart-size bowl, dissolve yeast in $\frac{1}{4}$ cup warm water. Add the remaining water and flour and mix well. Place on a plate (to catch any overflow) and put in a warm place or cupboard for 6 to 8 hours.

Set aside $\frac{1}{2}$ cup of the bubbly starter (to store or feed and use again). The remaining $3\frac{1}{2}$ cups of starter can be used for making pancakes, waffles, muffins, bread or cake immediately.

Sourdough can also be started by trying to capture wild yeast. This method is not discussed in this publication.

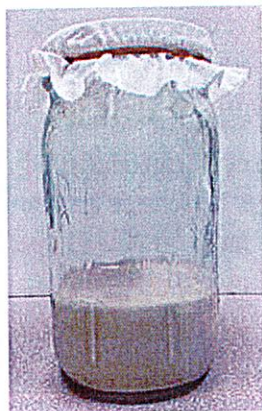
If you have a starter — set the sponge

To set the sponge, place $\frac{1}{2}$ cup of starter in a medium-size mixing bowl. Add equal parts flour and water to feed the yeast. For example, add 2 cups water and 2 cups flour. Beat well and set in a warm place, free from draft, to develop for 6 to 8 hours. The sponge will have gained half again its bulk, will be covered with air bubbles and have a pleasant yeasty odor. The sponge can now be used in recipes for pancakes, muffins, bread or cake.

Storing the starter

Before using the active starter, place $\frac{1}{2}$ cup in a scalded pint jar, cover and store in the refrigerator or a cool place for future use. Leave lots of room for expansion in the container, or put the lid on without tightening it.

Starter will keep well in a clean, covered glass container in the refrigerator. Use of metal containers or spoons is not recommended as the acid may react with the metal. After removing the starter from



the refrigerator, let it come to room temperature before adding the flour and water.

Old-timers added enough flour to their starter to shape it into a ball and then put it in a sack of flour for easy carrying.

Drying and reconstituting a starter

Sourdough starter may be dried for easy storing or sharing. To dry, drop by teaspoonfuls on parchment paper. Turn frequently until completely dry. In Interior Alaska, drying takes about 24 hours. Store in a covered jar or airtight plastic bags.

To reconstitute a starter, crumble two or three circles of starter in $\frac{1}{2}$ cup of warm water. Let stand overnight or until bubbly. Add $\frac{1}{2}$ cup water and $\frac{1}{2}$ cup flour. Stir. Let stand for a second night or until bubbly. Use to prepare the sponge as directed in recipes.

Sharing your starter

To increase your supply of starter, set the sponge as directed above. Six to 8 hours later, instead of preparing a sourdough recipe, remove your portion of starter as usual, then place $\frac{1}{2}$ cup portions of the starter in clean glass or pottery containers for sharing.

Using baking soda in sourdough recipes

Baking soda is added to react with the acids that result from the reaction of the yeast. This forms gas, which makes the batter lighter. If too much baking soda is added, the product may taste bitter and will be quite brown when baked. If too little baking soda is used, the product may be too sour in taste. Add the baking soda just before baking. In any sourdough recipe it is most helpful to reserve 1 tablespoon of the liquid to dissolve the baking soda. Add this to the batter last, mix thoroughly and bake. Baking soda added directly to the starter may kill the yeast.

Baking with sourdough

For all recipes, set the sponge 6 to 8 hours before using by adding equal parts flour and water. When the starter is bubbly and active, save ½ cup for the next starter and use the remainder for today's products. Stir the active sponge and measure the amount of sourdough for the recipe you are using. Flour amounts in the recipe may change depending on how thick or thin your sponge is.

Sourdough Hotcakes, Waffles & Muffins

Sourdough Hotcakes

Sourdough hotcakes differ from other hot cakes because a sponge is leavened with the yeast from the sourdough starter and baking soda. The sponge must be set the night before it is to be used.

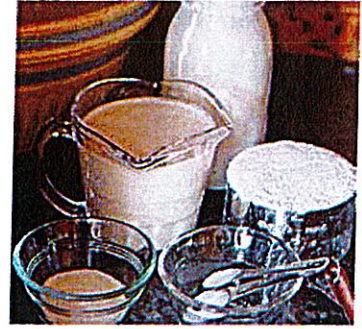
- 2 cups sponge (active sourdough)**
- 1 egg**
- ½ teaspoon salt**
- 1 tablespoon sugar**
- 4 tablespoons nonfat dry milk powder (optional)**
- ½ teaspoon baking soda**
- 1 tablespoon water**

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 2 cups for this recipe; save remaining for starter.

Add to the active sourdough sponge the egg, salt and sugar; beat with a fork to blend in all ingredients. If you like, add nonfat dry milk powder



(optional). Dissolve baking soda in water and stir the baking soda-water mixture into batter just before baking. Bake on a hot griddle. Turn once. Serve with hot brown sugar syrup or honey and melted butter. Molasses, jelly, birch syrup or rose hip syrup are other tasty toppings.



For interesting variations add ½ cup whole wheat flour, cornmeal, wheat germ or bran flakes to the batter. Add another egg to provide the liquid for this addition.

If you prefer a thin pancake, add another egg or a bit more water; for a thicker cake, the sponge should have more flour. At the time of baking, the batter for sourdough should be the same consistency as the batter for other hot cakes that are family favorites.

Sourdough Waffles

Use the basic hot cake recipe, but add 3 tablespoons of oil. Add the oil, then the baking soda-water mixture and bake at once, following to the directions that come with your waffle iron.

Sourdough Muffins

- 2 cups sponge (active sourdough)**
- 1 egg**
- ½ cup vegetable oil or melted butter**
- 1 teaspoon salt**
- ¼ cup nonfat dry milk**
- 1 cup flour**
- ½ cup sugar**
- ½ teaspoon baking soda**
- 1 tablespoon water**
- ¾ cup raisins, blueberries or cranberries**

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 2 cups for this recipe; save remaining for starter.

Mix egg and oil thoroughly with the active sponge. Sift dry ingredients (salt, dry milk powder, flour and sugar) into a separate bowl. Make a well in the cen-

ter; add wet mixture to the well in the flour. Stir only enough to moisten the flour. Dissolve baking soda in water. Add the baking soda-water mixture and raisins or berries to the batter just before filling the muffin tins. Fill greased muffin tins $\frac{3}{4}$ full. Bake in 375°F oven for 30 to 35 minutes. Makes 12 muffins.

Oatmeal Berry Muffins

$\frac{3}{4}$ cup sponge (active sourdough)
1 egg
 $\frac{1}{2}$ cup milk (or 3 tablespoons dry milk + $\frac{1}{2}$ cup water)
 $\frac{1}{2}$ cup oil
2 teaspoons grated orange peel
 $1\frac{1}{2}$ cups flour
 $\frac{1}{2}$ cup oatmeal
 $\frac{1}{2}$ cup brown sugar
 $\frac{1}{2}$ teaspoon salt
 $\frac{1}{2}$ teaspoon baking soda
1 teaspoon water
 $\frac{1}{2}$ cup blueberries or cranberries
muffin pan

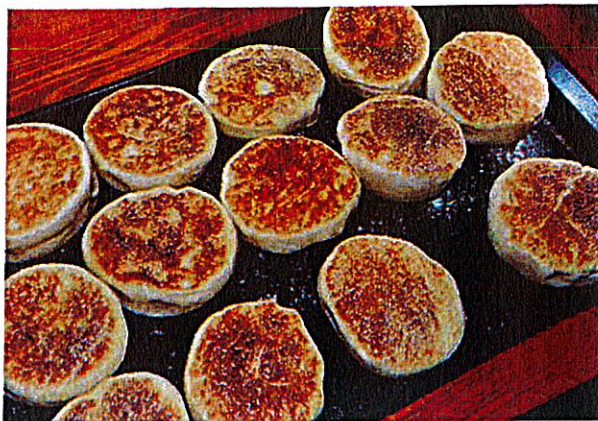
In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure $\frac{3}{4}$ cup for this recipe; save the rest for the next starter or use for another recipe.

Grease muffin tins; set aside. Preheat oven to 375°F.

Mix egg, milk and oil thoroughly with the active sponge. Stir in the orange peel. Whisk dry ingredients (flour, oatmeal, brown sugar and salt) together in a separate bowl. Make a well in the center; add wet mixture to the well in the flour. Stir only enough to moisten the flour. Mix the baking soda and water. Quickly stir the baking soda-water mixture and the berries into the batter. Fill the muffin tins $\frac{3}{4}$ full. Bake in preheated 375°F oven for 30 minutes. Makes 12 muffins.

Sourdough English Muffins

1 cup sponge (active sourdough)
 $\frac{3}{4}$ cup milk or buttermilk
 $2\frac{3}{4}$ cup flour
6 tablespoons cornmeal, divided
 $\frac{1}{2}$ teaspoon baking soda
 $\frac{1}{2}$ teaspoon salt



In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 2 cups for this recipe; save remaining for starter.

Mix together the active sourdough sponge and milk. Combine flour, 4 tablespoons cornmeal, baking soda and salt in a separate bowl. Add to sourdough mixture. Stir to combine well. Turn onto a lightly floured board and knead until smooth and elastic. Roll dough to $\frac{1}{2}$ inch thick and cut with a 3-inch cutter. Sprinkle waxed paper with remaining cornmeal and place the muffins on the cornmeal. Sprinkle with more cornmeal, cover and let rise about 45 minutes. Bake on a medium-hot, lightly greased griddle for 20 to 30 minutes. Turn often. Cool. Split and toast. Serve with butter and blueberry jam. Makes 12 to 14 muffins.

Sourdough Bread

For all bread recipes, set the sponge and let stand in a warm place overnight or for 6 to 8 hours. Save $\frac{1}{2}$ cup sponge for next starter.

Sourdough Bread

2 cups sponge (active sourdough)
2 tablespoons vegetable oil
2 cups flour (or more)
2 tablespoons sugar
1 teaspoon salt

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 2 cups for this recipe; save remaining for starter.

Mix oil thoroughly with active sourdough sponge. Sift dry ingredients (flour, sugar and salt) into a

separate bowl; make a well in the center. Add wet mixture to the well in the dry ingredients. Add enough flour to make a soft dough for kneading. Knead on a floured board for 10 to 15 minutes. Place in a greased bowl. Cover with a towel and let rise in a warm place for two to four hours or until doubled in size. Shape dough into loaves in bread pans and set aside to rise. When doubled, bake at 375°F for 50 to 60 minutes. The loaf is done when a thermometer placed in the center registers 200°F.

Casserole Bread

Use the same ingredients and methods as for Sourdough Bread. Instead of kneading the dough, beat it 2 minutes at medium speed setting of the mixer or 300 strokes by hand. Let stand in mixing bowl until double in bulk. Add ¼ teaspoon baking soda dissolved in 1 tablespoon warm water. Mix 30 seconds, turn into greased casserole or loaf pan and let stand 40 minutes. Bake as for Sourdough Bread. Bread is done when crust sounds hollow when tapped and when a thermometer placed in the center of loaf registers 200°F.

Sourdough Whole Wheat Bread

2 cups sponge (active sourdough)
2 cups whole wheat flour (or more)
2 tablespoons sugar
1½ teaspoons salt

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 2 cups for this recipe; save remaining for starter.

Combine ingredients in a large bowl and mix well with a wooden spoon. This dough will be sticky. Set in a warm cupboard for 2 hours or more. Turn out on a warm, well-floured board.

Knead ½ cup whole wheat flour into the dough for 10 to 15 minutes. Add more flour when kneading, if necessary, for the dough to feel firm but still have moisture in it. Shape into a round loaf and place in a well-greased bread pan. Grease sides and top of loaf, cover with a towel and let rise 1 hour or until doubled. Bake in a preheated oven at 450°F for 10 minutes, then reduce heat to 375°F and bake 30 to 40 minutes longer. The loaf is done when thermom-

eter placed in the center registers 200°F. Makes 1 large loaf.

Sourdough French Bread

Prepare as for Sourdough Bread, but add 1 tablespoon yeast to the starter. Shape into 2 loaves by dividing the dough in half. Roll each half into a 15×12-inch rectangle. Wind up tightly toward you, beginning with the wide side. Seal edges by pinching together. Place rolls diagonally on greased baking sheets that have been lightly sprinkled with cornmeal. Let rise until doubled, about 1 hour. Brush with cold water. Cut with scissors or knife to make one or two lengthwise or several diagonal ¼-inch-deep slits across tops of loaves. Place baking sheets in a hot (400°F) oven with a pan of boiling water placed on a rack below the bread. Bake 15 minutes. Remove from the oven and brush again with water. Reduce the temperature to 350°F and bake 35 to 40 minutes until golden brown. Brush a third time with cold water and bake 2 to 3 minutes longer. The loaf is done when thermometer placed in the center registers 200°F. Makes two French loaves.

Note: The addition of the commercial dry yeast helps give a lighter, airier texture to the bread.

Scandinavian Sourdough Rye Bread

2 tablespoons yeast
1½ cups warm water (110°F)
1 cup sponge (active sourdough)
3 cups rye flour
½ cup molasses
2 tablespoons grated orange peel
¼ cup oil
1 teaspoon crushed fennel or caraway seed (optional)
1 tablespoon salt
2 cups flour
additional flour, as needed

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 1 cups for this recipe; save remaining for starter.

Dissolve yeast in water. Add active sourdough sponge, rye flour and molasses. Beat well, about 3 minutes. Cover and let rise in a warm place until

about double in bulk.

Combine sourdough/rye mixture with remaining ingredients using 2 cups flour. Turn out on a floured board and knead well, adding additional flour to make a smooth, satiny dough. Shape round or oval loaves. Cover and let rise. Slash and bake in preheated 375°F oven for 35 to 40 minutes. When done, loaves sound hollow when tapped and thermometer placed in the center registers 200°F. Cool on wire racks.

Sourdough Pizza Crust

2 cups sponge (active sourdough)
¼ cup olive oil
½ teaspoon salt
½ teaspoon baking soda
2 cups flour, divided

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 2 cups for this recipe; save remaining for starter.

Add oil, salt and baking soda to sourdough and mix well. Stir in 1 cup flour. Add an additional cup of flour or enough to make a soft satiny dough. Knead well. Let dough rest about 15 minutes then roll out into rounds. Let rise again while preparing toppings. Add toppings. Bake in a preheated 425°F oven on the bottom rack for 20 to 25 minutes.

Biscuits, Tortillas & Crackers

Sourdough Biscuits

1½ cups sponge (active sourdough)



⅓ cup vegetable oil
½ teaspoon salt
1 tablespoon sugar
½ teaspoon baking soda dissolved in 1 tablespoon warm water
1½ cups flour
1 teaspoon baking powder

In the evening, or 6 to 8 hours before using, set the sponge. When the sponge is bubbly and active, measure 1½ cups for biscuits; save remaining for starter.

Stir oil, salt, sugar and baking soda dissolved in water into active sourdough sponge until combined. Add flour and baking powder, stirring to form a soft dough. Turn out on a floured board and knead lightly 8 to 10 times. Roll or pat out to ½ inch thick. Cut into rounds and place on a greased baking sheet. Bake at 425°F for 15 to 20 minutes.

Sourdough Tortillas

⅔ cup sponge (active sourdough)
2 tablespoons vegetable oil
⅔ cup very hot water
3 cups flour
1 teaspoon salt

Combine all ingredients until a soft dough forms. If the dough is too sticky, add a bit more flour. Knead well. Divide into 8 pieces and roll into thin circles. Cook tortillas on a hot griddle until they bubble and dark spots appear on the underside. Turn and cook on the opposite side until done.

Sourdough Sesame Crackers

½ cup sponge (active sourdough)
2 tablespoons vegetable oil
1 teaspoon salt
1 cup whole wheat flour
¼ cup sesame seeds (preferably unhulled)

Preheat oven to 400° F.

To the frothy sourdough starter, add the oil, salt and as much of the flour as you can work in. Turn dough onto a floured board and let it rest a few minutes covered with a damp cloth. Knead in the sesame seeds. Add more flour as needed.



When the dough is stiff, roll it out to a thickness of $\frac{1}{16}$ of an inch. Cut the crackers into 1×2-inch rectangles and place on an ungreased cookie sheet. Leave space between each cracker. Prick with a fork and bake for about 8 minutes. The crackers should brown lightly.

Remove from cookie sheet to wire racks to cool. When cool, store in an airtight container.

Desserts

Sourdough Chocolate Cake

- $\frac{1}{2}$ cup thick sponge (active starter)**
- 1 cup water**
- $1\frac{1}{2}$ cups flour**
- $\frac{1}{4}$ cup nonfat dry milk powder**

Mix and ferment 2 to 3 hours in a warm place until bubbly and there is a clean sour milk odor.

- 1 cup sugar**
- $\frac{1}{2}$ cup oil**
- 1 teaspoon vanilla**
- $\frac{1}{2}$ teaspoon salt**
- 1 teaspoon cinnamon**
- $1\frac{1}{2}$ teaspoons baking soda**
- 2 eggs**
- 3 1-ounce squares melted chocolate (semi-sweet, unsweetened or dark)**

Combine sugar, oil, vanilla, salt, and cinnamon. Add eggs one at a time, beating well after each addition. Combine wet mixture and melted chocolate with sourdough mixture. Add baking soda. Stir 300 strokes or mix with an electric mixer at low speed

until blended. Pour into two well-greased 8-inch round pans or one 9×12-inch rectangular pan. Bake at 350°F for 25 to 30 minutes. Cool and frost with Butterscotch-Chocolate frosting or other icing of your choice.

Butterscotch-Chocolate Frosting — In saucepan combine three 1-ounce squares of unsweetened chocolate, $\frac{1}{4}$ cup butter or margarine, $\frac{1}{2}$ cup light cream, $\frac{2}{3}$ cup brown sugar (packed) and $\frac{1}{4}$ teaspoon salt. Bring to a boil, stirring constantly; cook until chocolate is melted. Remove from heat; beat in 1 teaspoon vanilla and about 3 cups confectioners' sugar. Spread over top and sides of cake.

Old Fashioned Spice Cookies

- $\frac{1}{2}$ cup sponge (active sourdough)**
- $\frac{1}{4}$ cup vegetable oil**
- $\frac{1}{2}$ cup brown sugar**
- 1 egg**
- $\frac{1}{2}$ cup molasses**
- 2 cups flour**
- $\frac{1}{4}$ teaspoon salt**
- 1 teaspoon ginger**
- $\frac{1}{2}$ teaspoon cinnamon**
- $\frac{1}{2}$ teaspoon cloves**
- $\frac{1}{2}$ teaspoon nutmeg**
- 1 teaspoon baking soda dissolved in**
- 1 tablespoon water**

Mix together sourdough, oil, brown sugar, egg and molasses in a bowl and set aside. Mix flour and spices together in another bowl. Blend the dissolved baking soda into the sourdough mixture. Add the



dry ingredients and mix well. Drop onto a lightly greased cookie sheet and bake at 400°F about 10 minutes.

When cool, frost with the following: Stir together 1 cup powdered sugar, ¼ teaspoon maple flavoring and 2 tablespoons milk.

Sourdough Yarns

Various stories tell of the sourdough starter's origin. Below are some of the most credible stories.

Sourdough Pete, when a young man, came to Alaska from Michigan at the turn of the century to seek his fortune. His grandmother, who had pioneered in the Michigan woods, knew a thing or two about hardships in a new land. Her parting gift, a crock of yeast starter for hot cakes and bread, made him famous throughout the land. With the help of a sack of flour, Sourdough Pete always had hotcakes to eat, whether he struck it rich or not. He shared it with friends who, the story tells, walked miles to renew or get a starter of the yeast product. Pete became known for his generosity and his starter, hence his name, Sourdough Pete.

In 1900, an Alaska prospector married an Alaska Native girl. They started a sourdough pot and kept the starter going by using it regularly. When she died and the husband became ill, he refused to go to the hospital if he had to leave his sourdough pot. "It is all I have left of my wife," he said. It was given to a woman friend to guard. She kept her promise and used the starter once a week. From it, she gave starters to countless other Alaskans. It is an especially good starter with a clean aroma and flavor.

Other stories of sourdoughs' survival in spite of

hardships and rigors in the far northern Interior explain that the pot of starter needed to be put bed in the coldest weather. Under the covers, sharing its owner's body warmth, the starter survived to leaven the next day's supply of hot cakes. Between camps, it was the last item placed in the pack sack and the first item to be removed upon arrival at the new site.

Another version of the care taken to keep the starter safe on journeys states that the owner wore it in a bag around his neck inside his shirt on long and cold journeys. An old sourdough warns: "If the starter turns orange, it is not spoiled; but if it turns green, it must be discarded." Modern Alaskans do not use discolored starters but keep the starter clean and fresh in a refrigerator or other cool place and use it weekly.



Tanning Hides

Sourdough has other uses too, as this bit of information from an old trapper explains.

To tan small hides such as mink, rabbit, ermine or muskrat, first wash the hide with lukewarm soapy water, using a mild soap. Lay the skin on a flat board, hair side down. Cover it with a thick batter of sourdough. When dough begins to dry, start working the skin. Rub it with a circular motion against the palm of the left hand. Rub and knead the skin until it is dry and soft.

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Understanding and Selecting Sourdough for Health Benefits

Fact Sheet 9.392

Food and Nutrition Series | Food Safety

By M. Bunning, E. Shackelton, A. Pennington, and C. Clark (3/22)

The popularity of sourdough bread has risen in recent years, with both a significant increase in bakery sales and more home bakers making sourdough bread because of its unique flavor, texture, and potential health benefits. Though sourdough bread may be perceived as a healthier choice, not all recipes or breads titled or labeled as 'sourdough' are fermented and leavened solely using wild cultures. Having an understanding of the processes involved in making traditional sourdough bread can help consumers make and/or purchase sourdough products with these potential health benefits.

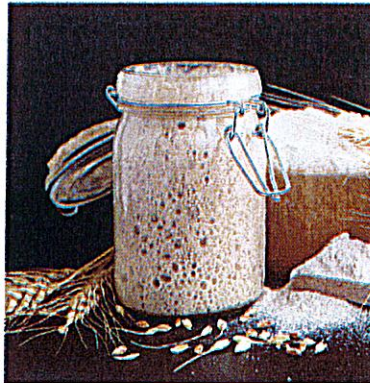
Sourdough Bread Starters

Traditional sourdough bread is made using a 'starter,' which may be obtained from fellow bakers, purchased from food fermentation retailers, or made from 'scratch' by mixing flour and water. A starter contains wild yeasts and bacteria from the surrounding environment. The fermenting microorganisms in a sourdough starter need to be fed fresh flour and water regularly to survive and grow.

For making sourdough bread at home, starters are often shared or they can be created [following best practices](#) to cultivate a healthy and safe starter.

When using wild yeast and bacteria in bread making, the required time for fermenting bread dough (proofing and rising) is less predictable and generally takes longer, sometimes even being intentionally slowed down using refrigeration of the dough to create desired flavors, texture, and nutritional benefits.

In contrast, using a packaged commercial baker's yeast enables the baker to create a bread product in a much shorter amount of time and with more consistent results, but without the potential fermentation benefits and complex flavor.



Sourdough Organisms

The wild yeast in a sourdough starter are present naturally on flour and in the environment. Wild yeast does not need to be intentionally captured from the air, nor does commercial yeast need to be added when making a sourdough starter. The wild yeast consumes the carbohydrates in the flour and produces alcohol and carbon dioxide gas (CO₂) as the primary by-products. The release of CO₂ in the dough helps create bread's airy structure.



Quick Facts

- Sourdough bread was essential to early human societies, and continues to be a staple food in cultures worldwide.
- Sourdough bread is fermented with wild microbes. Both yeast and bacteria participate in the fermentation and leavening of sourdough.
- Not all bread labeled "sourdough" is made using traditional sourdough methods.
- Reading and understanding a bread label can be beneficial for buying sourdough bread for its potential health benefits.

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One common type of yeast present in sourdough starters is wild-type *Saccharomyces cerevisiae*. Different strains of this wild yeast are found naturally in many environments, and each creates distinctly different bread flavors. In contrast, standard bread is made with a single strain of *Saccharomyces cerevisiae* known colloquially as “baker’s yeast.” This strain has extremely high CO₂ output, but it delivers very few flavorful byproducts. The result is a rapid rise but a limited flavor profile.

- The **naturally occurring bacteria** in a sourdough starter are species of *Lactobacillus*. They turn sugars from flour into lactic acid and convert the yeast-produced alcohol into acetic acid. These organic acids give sourdough bread its trademark sour flavor and enhanced preservative qualities.
- The **wild yeast and bacteria** in a sourdough starter are in a symbiotic relationship. Together, they survive better than either organism would survive alone. The bacteria depend on the yeast to break down proteins into peptides (Gänzle, 2014). In return, the bacteria release excess glucose, which is food for yeast fermentation. The bacteria also lower the pH to a point that is optimal for numerous yeast enzymes (Siepmann et al., 2018). There are many different yeasts and bacteria that can be involved in sourdough fermentations. Together, they create countless combinations, each of which gives unique properties to the bread. Some of these combinations are geographically-specific. For example, San Francisco sourdough is famous for the flavor resulting from the combination of wild yeast and bacteria native to that geographic location.



Digestibility

Traditional sourdough bread made with wild yeast and bacteria has several benefits over bread made with commercial baker’s yeast. Because of the organic acids produced by the *Lactobacillus* bacteria, sourdough has a lower pH than standard bread. This not only gives it a desirable “sour” flavor and longer shelf-life, but also makes the bread kinder to your gut (Marti, et al., 2015; Siepmann, et al., 2018).

- The low pH of sourdough bread, combined with its long fermentation time, allows nutrients, like carbohydrates and proteins with a more complex structure, to get a “head start” on digestion by partially breaking down into smaller units. For these reasons, sourdough has been shown to be more digestible than standard bread fermented with baker’s yeast (Rizello et al., 2019).
- Sourdough fermentation also reduces levels of certain FODMAPs, which are a type of carbohydrate that cause bowel irritation in some people. The low levels of this type of carbohydrate in sourdough makes it much more digestible for certain consumers (Menezes et al., 2019). Sourdough has also been shown to produce less gas and bloating overall, and this may also be due to its low-FODMAP profile (Rizello et al., 2019).
- Research has shown that some minerals may be present in a more available form in sourdough bread. Flour is a source of minerals such as calcium, sodium, zinc, and magnesium. However, these minerals can be sequestered in a molecule known as the phytate complex, which must be broken down in order for humans to absorb the minerals. While baker’s yeast is unable to break down the phytate complex, sourdough organisms can break down the complex very effectively. This could increase the amount of minerals available for absorption in the human gut (Leenhardt et al., 2005; Nionelli & Rizzello, 2016).



What About Gluten?

Gluten, composed of two types of proteins named gliadin and glutenin, is produced by wheat, barley, and rye plants and can contribute to the structure and texture of bread products. For individuals with celiac disease, gluten causes damage to the intestinal tract because of an immune system reaction. The only way to manage the symptoms of celiac disease is strict avoidance of gluten in the diet, so any gluten-containing bread (including sourdough bread) would not be tolerated or safe to consume.

For individuals experiencing non-celiac gluten sensitivity, gluten intolerance, or chronic intestinal issues, gluten-containing products are frequently cut from daily diets. Research is ongoing to determine if the natural fermentation processes of sourdough bread made using a wild yeast and bacteria starter may help alleviate some symptoms for those with gluten intolerance. (See the Reference section for more information, and always consult a medical professional if you have gluten sensitivities before eliminating or introducing gluten-containing foods into your diet.)

Impact on Blood Glucose

Some research suggests that the acids produced during the sourdough fermentation process inhibit the enzymes that metabolize starches, causing the starches to be more slowly digested when consumed. This prevents blood glucose and insulin levels from rising quickly. More research is needed to understand these impacts on humans when consuming sourdough bread. The carbohydrate content should still be factored in when considering impacts on blood glucose levels, especially for those with diabetes.



Buying Sourdough Bread for the Potential Health Benefits

Many food products have Standards of Identity (SI) set by the U.S. Food and Drug Administration which outline necessary requirements for that food to be marketed and labeled for sale under a particular name. The SI may include how the food must be produced, what it contains, and the proportions of ingredients. This system of standards provides information for consumers to help make informed decisions regarding the nutrition and safety of their food.

- There is currently **no standard of identity** for sourdough bread in the U.S. Therefore, checking the ingredient list on the label can help consumers make a more informed sourdough purchase.

Read the Label!

When buying sourdough bread from a bakery, market, or store, knowing how to read the label (or asking the right questions) is important for understanding what you are buying.

- The source of fermenting microorganisms is the key determinant in what distinguishes a naturally-leavened sourdough bread from a bread labeled 'sourdough' that may actually be made using commercial baker's yeast.



Trade or brand names mentioned are used only for the purpose of information with the understanding that no discrimination is intended and no endorsement by Extension is implied.

Naturally-Leavened Sourdough:

Traditional sourdough bread is created through spontaneous fermentation by wild yeast and lactic acid bacteria using flour, salt, and water. (Other ingredients can be baked into the sourdough for a more unique flavor or texture profile, for example whole grains, nuts, seeds, herbs, spices, olives, or dried fruits.) In addition to potential health benefits, lactic acid bacteria in sourdough help limit the growth of harmful microorganisms—including mold—to naturally delay staleness and extend shelf life. The following simple ingredients are what you would expect to find in a naturally-leavened bread:

- **Flour**
- **Water**
- **Salt**
- **Culture or Starter** (fermented leaven made using flour and water) may or may not be listed separately on the label but is necessary for making the bread rise.



Sourdough Made Using Commercial Yeast:

Some sourdough breads that are labeled as ‘San Francisco,’ ‘Seattle,’ ‘Artisan,’ ‘Extra Sourdough,’ or ‘Sprouted Sourdough’ may have increased consumer appeal but reading the ingredient list could reveal that the product was not produced using traditional sourdough methods and/or ingredients. If a sourdough bread label has any of the following ingredients, the bread may not confer the same health benefits of a naturally-leavened sourdough bread:

- Leavening agents: baker’s yeast, baking soda, etc.
- Ingredients that are added to mimic ‘sour’ flavor: vinegar, acetic acid, yogurt, or cultured wheat/flour
- Added ingredients that can speed up and/or interfere with the longer wild yeast fermentation process: vegetable oils and sugars or sweeteners, including honey
- Preservatives to extend shelf life: for example, benzoic acid or cultured wheat

So Many Choices!

Bread was essential to early human societies and continues to be a staple food in cultures worldwide. The most common source of leavening in antiquity was to retain a piece of dough from the previous day as a form of a ‘starter’ to be used in subsequent days. With industrialization, the availability of commercial baker’s yeast and chemical additives has made baking more predictable, easier, faster, and cheaper but some sensory and nutritional qualities are reduced. For people seeking to make and/or buy breads with enhanced health benefits, as well as those with digestive challenges, exploring sourdough bread may be a great option.



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How To Start a Sourdough Starter

There are three main ways to start a sourdough starter: borrow, buy, or trap.

Borrow

My favorite method of acquiring sourdough is definitely from a friend. If you can find someone with a healthy, active sourdough starter who is willing to part with some then you can be baking as soon as the next day! Sourdough is a joyful and loving hobby and most sourdough bakers will be happy to share that passion with a beginner.

Buy

You can also purchase a dried starter from many different sources. My first starter was originally given to me as a gift from my husband before we were married. Little did he know how important that gift would be to our health! There are some really awesome choices for sourdough starter on the market and I will list a few below that I personally trust.

Trap

If you want to get super authentic you can start your own starter by trapping wild yeast off of wheat flour, fruits, herbs, or vegetables.

To start a starter with flour you will want to use organic, freshly milled flour if that is available. Flour that still has some of the hull will help you start a vigorous starter quickly.

Organic whole wheat or rye flour is a good choice for starting a vigorous starter. Rye flour tends to have plenty of wild yeast and bacteria and (in my case) makes a sweet-smelling ferment.

Again, any organic flour will work, but those that are milled with the hull start sourdough cultures faster.

YIELD: 1 SOURDOUGH STARTER BABY

Homemade Sourdough Starter

Easy instructions for trapping your own wild yeast and bacteria strains to make a 100% hydration sourdough starter. This process takes fourteen days to complete so plan accordingly. You will end up with a sourdough starter that can be used for baking breads, cakes, tortillas and more!



PREP TIME	TOTAL TIME
14 days	14 days

Ingredients

- 575 grams organic flour, divided
- 575 grams water, divided

Instructions

Day 1

Mix 50g of flour (1/4c + 2t) and 50g (3T + 1t) of water into a paste. Store it in a clean locking lid jar with the rubber seal removed. Keep your jar in a draft-free place at room temperature. This is the beginning of your starter!

Day 2 -7, feed your starter once a day.

Remove 50g of starter (half) from the jar and replace it with 25g (2T + 1/2t) of flour and 25g (1T + 2t) of water. Stir well and store it at room temperature.

1. By day seven you should be seeing some signs of activity. The starter should be bubbling, smell fermented (slightly sweet, sour, or alcoholic). You may even see it rise after feeding.
2. If there is mold, off color, off smell and little to no activity do not continue the feedings and please see my troubleshooting guide in the body of this article.

Day 8-14, feed your starter twice a day.

1. Morning: Remove 50g of starter (half) from the jar and replace it with 25g (2T + 1/2t) of flour and 25g (1T + 2t) of water. Stir well and store it at room temperature.

2. Evening: Remove 50g of starter (half) from the jar and replace it with 25g (2T + 1/2t) of flour and 25g (1T + 2t) of water. Stir well and store it at room temperature.

Day 15, your starter should be ready to bake with!

Notes

- Some people have found that their starter is ready to bake with by day 7. I add an extra 7 days of double feedings to insure that the starter is powerful, active and ready for all the baking projects!
- Keep in mind, sourdough is as unique as you are. Results may vary!
- To build your starter up prior to baking just add a larger amount of flour and water to the last feeding. If you need 250g of starter for your recipe add at least 125g each flour and water!
- All cups and spoons measurements are approximate, please weight your ingredients for accuracy!

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CUISINE: American / **CATEGORY:** Sourdough

<https://www.butterforall.com/traditional-cooking-traditional-living/demystifying-sourdough-everything-youve-ever-wanted-to-know-about-sourdough-starter/>

Sourdough Baking Conversions

Flour: All-Purpose, Speltz, Whole Wheat

1 cup - 150 g

1/2 cup - 75 g

1/3 cup - 50 g

1/4 cup - 37 g

Water/Milk

1 cup - 236 g

1/2 cup - 118 g

1/3 cup - 79 g

1/4 cup - 59 g

Sourdough Starter: Active

1 cup - 227 g

1/2 cup - 113 g

1/3 cup - 75 g

1/4 cup - 57 g

Sourdough Starter: Discard

1 cup - 285 g

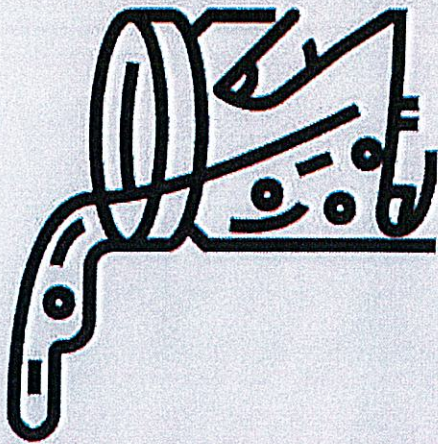
1/2 cup - 142 g

1/3 cup - 95 g

1/4 cup - 71 g



DIFFERENCE BETWEEN STARTER + DISCARD



SOURODUGH DISCARD is the unfed portion of starter you remove prior to feeding.

Starter + Discard come from the same jar, but one is fed and one is not. They can be used in different ways.

SOURODUGH STARTER is the fed + bubbly stuff you use to rise your bread. Discard, feed and use it once it doubles.



www.pantrymama.com

HOW TO ADD *sourdough discard* TO ANY RECIPE

- 1 Weigh out how much discard you want to add to the recipe (no more than 200g).
- 2 Divide the weight into 2. Subtract this amount of flour and water (or other liquid) from the recipe.
- 3 Add the sourdough discard in place of these amounts of flour and water.
- 4 Bake the recipe following the instructions. Treat sourdough starter as a liquid.

www.thefoodpeeps.com

Oatmeal Chocolate Chip Sourdough Muffins

These muffins are a delicious and nutritious way to start your day! They are quick, easy and full of oatmeal and whole wheat goodness yet they are soft and yummy. So good!

PREP TIME: 10 minutes COOK TIME: 25 minutes

SERVINGS: 12 Muffins CALORIES: 245 kcal

INGREDIENTS

1 cup rolled oats	½ cup milk
½ cup plain yogurt*	1 teaspoon vanilla
½ cup sourdough starter discard or fresh from the fridge works great	
⅓ cup granulated sugar	1 cup all purpose flour
½ cup white whole wheat flour can sub in all-purpose if you prefer	
1½ teaspoon baking powder	¼ teaspoon baking soda
½ teaspoon salt	½ teaspoon cinnamon
⅓ cup neutral flavored cooking oil*	1 large egg beaten
¾ cup mini chocolate chips	

INSTRUCTIONS

Stir together oats, milk, vanilla and yogurt right away and let sit while you gather up the rest of the ingredients and get ready. You want the oats to have a chance to soften up a bit.

Preheat the oven to 400°F and grease a 12 cup muffin tin. Stir sourdough starter and sugar into oats.

In a small bowl, mix together flours, baking powder, baking soda, cinnamon, and salt. Stir oil and egg into oat mixture. Then stir in dry ingredients until just mixed. Fold in chocolate chips. Spoon into prepared muffin tin. Bake 20-25 minutes or until golden brown. Remove from muffin tin and cool on wire rack.

NOTES

*You can also use vanilla yogurt. In a pinch, you can substitute milk, but the yogurt really makes the muffins extra good. Use any neutral flavored oil such as vegetable, canola, melted coconut oil or even melted butter. Some folks have subbed applesauce for the oil with good results as well.

NUTRITION Serving: 1 Serving Calories: 245kcal

Carbohydrates: 34g

Protein: 5g

Fat: 11g

Saturated Fat: 3g

Polyunsaturated Fat: 8g

Cholesterol: 17mg

Sodium: 204mg

Fiber: 3g

Sugar: 12g

Sourdough Apple Bread

This Sourdough Apple Bread is a sweet sourdough discard recipe. Made with juicy apples, cinnamon, and sugar, it is the perfect blend of flavors. It goes great with a hot cup of coffee or tea!

PREP TIME 15 mins COOK TIME 55 mins

INGREDIENTS

For the apple bread

- 1/3 cup brown sugar
- 1 teaspoon cinnamon
- 1 teaspoon vanilla extract
- 2 teaspoons baking powder
- 1/2 cup sourdough discard
- 1/3 cup sugar
- 1/4 teaspoon nutmeg
- 2 cups all purpose flour
- 1/2 cup milk
- 2 large eggs

Apple Filling Mixture

- 2 cups apples peeled and chopped (about 2 medium apples)
- 1/2 teaspoon cinnamon
- 2 tablespoons brown sugar

Glaze

- 1/2 cup powdered sugar
- 2 tablespoons butter melted and cooled
- 1 tablespoon milk
- 1 pinch salt optional

INSTRUCTIONS

Begin by preheating your oven to 350° and greasing a 9 x 5 inch loaf pan. Peel, core, and chop your apples. Stir them with the apple filling mixture in a large bowl. (2 c. apples, 1/2 t. cinnamon, 2 T. brown sugar) Next, in a large mixing bowl combine the dry ingredients and stir well. (1/3 c. brown sugar, 1/3 c. sugar, 1 t. cinnamon, 1/4 t. nutmeg, 2 c. all purpose flour, 2 t. baking powder) Add in the wet ingredients and mix with a mixer until well combined. (1 t. vanilla extract, 1/2 c. milk, 1/2 c. sourdough discard, 2 large eggs) Stir in the apple filling mixture with a large spoon. Pour the batter into the greased 9 x 5 inch loaf pan. Bake for 55 to 60 minutes or until a toothpick comes out clean from the middle.

While the loaf is cooling, combine the ingredients for the glaze in a mixing bowl.

1/2 cup powdered sugar, 1 tablespoon milk, 2 tablespoons butter, 1 pinch salt Whisk until smooth then drizzle over the bread before serving.

NUTRITION Serving: 1 slice

Calories: 338kcal	Carbohydrates: 69g	Protein: 6g
Fat: 5g	Saturated Fat: 3g	Polyunsaturated Fat: 0.5g
Monounsaturated Fat: 1g	Trans Fat: 0.1g	Cholesterol: 51mg
Sodium: 160mg	Potassium: 128mg	Fiber: 2g
Sugar: 40g	Vitamin A: 193IU	Vitamin C: 1mg
Calcium: 108mg	Iron: 2mg	Submitted by Beverly Burke, MFV

Sourdough Carrot Cake Muffins

These sourdough carrot cake muffins are made with sourdough discard! With grated carrots, shredded coconut and optional raisins for a range of delicious textures. Enjoy these delicious muffins for breakfast or snacks!

Prep Time 20 min Cook Time 20 min

Servings 12 muffins

Ingredients

1 cup sourdough discard	½ cup coconut oil (melted and cooled)
½ cup cane sugar	½ cup coconut sugar or brown sugar
½ cup full fat coconut milk (or sub Greek yogurt)	2 eggs (room temp)
2 teaspoons vanilla extract	1 ½ cups grated carrots
1 ½ cups all-purpose flour (unbleached)	⅓ cup shredded coconut (unsweetened)
1 ¼ teaspoon baking soda	1 teaspoon cinnamon
½ teaspoon sea salt	½ cup raisins (optional)

Instructions

Preheat your oven to 425 degrees F. and line 12 muffin cups with liners. (YOU'LL TURN DOWN THE OVEN TEMP PARTWAY THROUGH BAKING). In a large mixing bowl, whisk sourdough discard, melted coconut oil, cane sugar, coconut sugar, coconut milk, eggs and vanilla extract. Add in grated carrots and whisk until fully incorporated. In a separate mixing bowl, stir together all-purpose flour, shredded coconut, baking soda, cinnamon and sea salt. Transfer dry ingredients to bowl of wet ingredients and mix until almost combined. Then add in your raisins if using and finish stirring. Divide the batter evenly among your 12 lined muffin cups. Place in 425 degree oven and bake for 5 minutes. Without opening the oven door, turn down the temperature to 350 bake for another 12-16 minutes (or until an inserted toothpick comes out clean).

Let your muffins cool slightly before removing from pan.

Store any leftovers in an airtight container for 4-5 days.

Note: it made more than 12 when I made it-I ended up with 16.

Submitted by Beverly Burke, MFV

Nutrition Facts

Servings: 12

Amount per serving

Calories **230**

% Daily Value*

Total Fat 8g	10%
Saturated Fat 5.9g	29%
Cholesterol 62mg	21%
Sodium 4504mg	196%
Total Carbohydrate 23.6g	10%
Dietary Fiber 5.4g	19%
Total Sugars 11.6g	
Protein 4g	
Vitamin D 6mcg	29%
Calcium 103mg	8%
Iron 2mg	12%
Potassium 163mg	3%

*The % Daily Value (DV) tells you how much a nutrient in a food serving contributes to a daily diet. [2,000 calorie a day](#) is used for general nutrition advice.

SOURDOUGH COOKY SHEET CAKE

Mix in a large mixing bowl:

- 2 cups flour
- 1 $\frac{3}{4}$ cups sugar
- $\frac{1}{2}$ tsp salt

Bring the following ingredients to a boil while stirring constantly:

- 1 cup water
- 1 stick butter
- $\frac{1}{2}$ vegetable oil
- $\frac{1}{4}$ cup cocoa

Add and mix well:

- 2 eggs
- 1 tsp soda
- $\frac{1}{2}$ cup sourdough starter
- 1 tsp vanilla

Pour onto ungreased cooling sheet and bake for 20 minutes at 350 degrees.

Submitted by Judy Welter, MFV

Nutrition Facts	
Servings: 24	
Amount per serving	
Calories	132
	% Daily Value*
Total Fat 6.5g	8%
Saturated Fat 2.9g	15%
Cholesterol 40mg	13%
Sodium 1984mg	86%
Total Carbohydrate 14.8g	5%
Dietary Fiber 0.5g	2%
Total Sugars 7.9g	
Protein 2.1g	
Vitamin D 5mcg	26%
Calcium 9mg	1%
Iron 1mg	4%
Potassium 54mg	1%

*The % Daily Value (DV) tells you how much a nutrient in a food serving contributes to a daily diet. **2,000** calories a day is used for general nutrition advice.

Sourdough Discard French Bread

Yield: 2 loaves Prep Time: 10 minutes Cook Time: 25 minutes Rest Time: 8 hours

Quick and easy discard sourdough French bread recipe. You can make this crunchy soft homemade bread the same day!

Ingredients

1 cup sourdough discard starter	1 cup water
2 tsp sea salt	1 tbsp honey or raw sugar
3 tbsp olive oil	4 cups flour

Instructions

Add all the ingredients into a bowl. You can either place the dough hook on your mixer and turn it on number 2 for about 10 minutes or you can hand knead the dough until it passes the windowpane test. It should feel like a soft playdough in your hands but still maintain its shape. Let the ball rest in an oiled bowl and cover with either plastic or wet hand towel on top. Let it sit until it doubles which is usually about 4-5 hours.

Take your fermented bread ball out of the ball and place onto your parchment paper or silicone mat. Divide the mixture in half. Take one of the halves and flatten it out to a rectangle shape the same and then roll it up from the long side. Pinch the two ends in and the seams.

Place your bread on a baking tray covered with either baking paper or silicon mat. Cover with a wet towel, I like to lightly oil the tops as well to keep it from forming a hard crust. Let it rise another 2-3 hours.

Preheat oven to 400°F. Once it's preheated, place your sourdough discard French bread in the oven to bake for about 25 minutes.

Once it's done baking take it out and let it cool for about an hour before cutting into it as it's still cooking on the inside.

Tips

It's better to have a wetter dough than a drier dough so you have a nice soft bread at the end.

Place ice cubes at the bottom of the oven to increase steam. This allows your bread to rise more and gives it a more golden crust.

Make sure your dough passes the windowpane test. You take a little piece of it after kneading and stretch it out between two fingers. You should be able to see light come through it without it breaking. This indicates the gluten has broken down and your bread will rise well.

Sourdough Bread

Starter must be kept in icebox. Must be fed every 5-7 days. Morning or evening, take starter out of the icebox and add:

-1/3 cup very warm water.

-3/4 cup of sugar or less.

-3 Tablespoons of instant potato flakes.

Let starter sit out all night or day.

The next morning or evening, stir starter and take out 1 cup for bread, to give away or whatever.

To make bread:

- One cup of starter in bowl
- 1/2 sugar or less
- 1/2 cup vegetable oil
- 1 1/4 cup of very warm water
- 1 heaping teaspoon salt
- 6 cups bread flour

Mix dough of stiff batter (may be sticky) well, into one ball. Cover bowl with saran wrap or towel. Leave all day or night to rise. Bread may not always rise well, but go on to next step anyway.

Next morning or evening, punch bread down with fist. Using flour to knead, knead 4 or 5 times. Divide into 3 or 4 loaves, dinner rolls or cinnamon rolls. Place into greased pans (use PAM).

Place in warm place and cover with a towel. Let rise 6-12 hours, or until doubled in size. The weather has a lot to do with rising, and this dough is very fragile. Bake on the bottom rack of the oven at 325, for 50 minutes. Remove from oven and brush top with butter while hot.

Feed on Friday evening to bake on Sunday morning

Hailey and Kathy Poss

Nutrition Facts

Servings: 12

Amount per serving

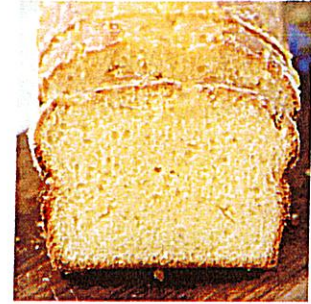
Calories **235**

% Daily Value*

Total Fat 4.7g	6%
Saturated Fat 0.9g	5%
Cholesterol 0mg	0%
Sodium 3230mg	140%
Total Carbohydrate 42.3g	15%
Dietary Fiber 1.4g	5%
Total Sugars 4.3g	
Protein 5.2g	
Vitamin D 0mcg	0%
Calcium 10mg	1%
Iron 2mg	13%
Potassium 54mg	1%

Glazed Sourdough Lemon Cake

A sweet and delicious lemon cake made with your discarded sourdough starter. Perfect as a breakfast, snack, or dessert!



Prep Time	Cook Time	Total Time
20 mins	50 mins	1 hr 10 mins

Course: Dessert Cuisine: American



4.68 from 78 votes

Keyword: sourdough breakfast recipe, sourdough discard recipes, sourdough lemon cake, sourdough quick bread

Servings: 12 slices Calories: 242kcal Author: Katie Shaw

Ingredients

For the Cake

- ½ cup vegetable oil (or melted butter)
- ¾ cup granulated sugar
- 2 eggs
- 1½ cups flour
- 1½ teaspoons baking powder
- ½ teaspoon salt
- 1 tablespoon fresh lemon zest
- 1 tablespoon fresh lemon juice
- ½ cup sourdough starter **discard**
- ¾ cup milk

For the Glaze

- ½ cup powdered sugar
- 2 teaspoons lemon zest
- 2 teaspoons lemon juice

Instructions

1. **Prep.** Preheat oven to 350 degrees with the rack in the center. Prepare a loaf pan or 9 x 9 square cake pan with cooking spray.
2. **Wet ingredients.** Combine the vegetable oil, eggs, and sugar in a large mixing bowl with an electric mixer until well combined.
3. **Dry ingredients and milk.** Mix the flour, baking powder, and salt in a separate bowl and add to the sugar mixture 1/3 at a time, alternating with the milk and the sourdough starter. Mix on low until just combined. Stir in the lemon juice and lemon zest by hand. Pour the batter into the prepared pan.
4. **Bake and cool.** Bake for 50-60 minutes (for the loaf pan) or 40-50 minutes (for the square pan) until golden brown and a toothpick inserted into the center comes out clean. Place on a wire rack. Allow to cool for about 15 minutes in the pan.

Make The Glaze

1. In a small bowl, combine the powdered sugar, lemon zest, and lemon juice for the glaze. Pour over the still-warm cake.
2. After the glaze has soaked in and hardened, remove cake from pan and allow to finish cooling on wire rack. Slice and serve once cool.

Nutrition

Calories: 242kcal | Carbohydrates: 35g | Protein: 3g | Fat: 10g | Saturated Fat: 8g | Cholesterol: 29mg | Sodium: 259mg | Potassium: 47mg | Fiber: 1g | Sugar: 21g | Vitamin A: 64IU | Vitamin C: 1mg | Calcium: 53mg | Iron: 1mg

Cucumber Sandwiches

Allrecipes

35 Servings

- 1 8 Oz. Package cream cheese - softened
- 1/2 Mayonnaise (cup)
- 1 package dry Italian salad dressing mix
- 2 loaves French Bread cut into 1" slices
- 2 medium cucumbers, sliced
- Dried dill weed

Nutrition Facts	
Servings: 35	
Amount per serving	
Calories	54
	% Daily Value*
Total Fat 3g	4%
Saturated Fat 1.5g	8%
Cholesterol 7mg	2%
Sodium 221mg	10%
Total Carbohydrate 5.8g	2%
Dietary Fiber 0.2g	1%
Total Sugars 0.4g	
Protein 1.3g	
Vitamin D 0mcg	0%
Calcium 9mg	1%
Iron 0mg	2%
Potassium 35mg	1%

*The % Daily Value (DV) tells you how much a nutrient in a food serving contributes to a daily diet. [2,000 calorie a day](#) is used for general nutrition advice.

In a medium mixing bowl, mix cream cheese, mayonnaise and Italian dressing mix. Refrigerate for at least 6 hours or overnight.

Spread the cream cheese mix onto slices of French bread. Top with a cucumber slice and sprinkle with dill weed.

Sourdough Brownie Recipe

The Pantry Mama

Ingredients

2/3 cup Butter, melted

1 cup chocolate, milk or dark

1 cup Sourdough starter , can be unfed or active and bubbly.

1 cup dark brown sugar

3 eggs

1 tsp vanilla extract

1/3 cup cocoa powder

¾ cup all purpose flour

Pinch salt

½ cup chocolate pieces optional, for poking in batter.

Instructions

- 1) Preheat oven to 350F
- 2) Melt 1 cup of chocolate together with butter. I do this in the microwave- place both ingredients in a glass bowl and do 30 second bursts until they are melted. Stir together.
- 3) Once chocolate and butter are melted together, add eggs, vanilla, sugar and sourdough starter to the same bowl and mix until well combined.
- 4) Add cocoa, flour and salt to the same bowl.
- 5) Mix until liquid, molten batter forms.
- 6) Pour the batter into a brownie tin lined with parchment paper.
- 7) If using, poke the chocolate pieces into the batter.
- 8) Bake the brownies at 350F for around 30 – 35 minutes (depending on your oven)
- 9) Dust with cocoa powder once removed from the oven.

Nutrition Facts	
Servings: 12	
Amount per serving	
Calories	1120
	% Daily Value*
Total Fat 94.6g	121%
Saturated Fat 60.2g	301%
Cholesterol 304mg	101%
Sodium 613mg	27%
Total Carbohydrate 56.8g	21%
Dietary Fiber 3.2g	11%
Total Sugars 39.5g	
Protein 10.4g	
Vitamin D 60mcg	300%
Calcium 159mg	12%
Iron 3mg	17%
Potassium 381mg	8%