Since California's gold mining days, sourdough has been a Western staple, delighting generations with its tangy flavor in breads, pancakes, and other baked foods. The West didn't invent sourdough, of course. This style of baking goes back to the ancient Egyptians, and Europeans have baked with sourdough starters for centuries.

How Sourdough Works

A sourdough starter is a portion of dough that is allowed to ferment. When this happens, the wild yeast and bacteria in the flour, in the liquid, and even in the air break down natural sugars and produce carbon dioxide, which enables bread baked with the starter to rise. As it ferments, the starter also produces acidity—in the form of lactic acid and some acetic acid—creating the "sour" in sourdough.

Starters vary from place to place (because wild yeasts are different everywhere) and baker to baker. The ones that developed in the San Francisco area were uniquely sour. In fact, the bacterial strain that's responsible for that sour flavor was eventually identified and named ***Lactobacillus sanfranciscensis*** in honor of San Francisco.

Once established, a starter can be kept going for decades. Boudin Bakery, founded in San Francisco in 1849 and still operating, traces its sourdough starter to one begun more than 150 years ago by Isidore Boudin. (The Boudin starter was borrowed, so the story goes, from one of the actual “sourdoughs”—the name given to gold miners because they relied so heavily on sourdough starters for bread baking out in the gold fields.)

A Bread Revolution

In the 1980s, sourdough helped fire up an artisanal bread–making revolution when Steve Sullivan and his wife, Susie, founded Acme Bread Company in Berkeley, California; to create the leavener for their levain bread, which sets the standard for artisan-style bread in America, he created a starter inoculated with wild yeast from wine grapes.

Sourdough has been a standby at Sunset since 1933, when we published the first recipes. However, we discovered that capturing the right bacteria and yeasts to establish a good starter can be hit or miss—some mixtures never fermented at all, while others were weak or inconsistent. In 1973, staff food writer Kandace Reeves, working with microbiologist Dr. George K. York from the University of California, Davis, finally hit upon a truly dependable starter using yogurt.

Sourdough Starter

As with a classic starter, ours ferments flour and liquid—milk, in this case—with some yogurt, already packed with helpful bacteria to get things off to a good beginning. Yogurt also produces a very active, bubbly starter and gives a wonderful zesty flavor to the bread. After a few days' incubation in a warm place, the bacteria multiply to break down sugars in the flour and milk and give the characteristic sour smell and tang, and the starter is ready to use. Despite its terrific souring qualities, yogurt-based starters don't always have a reliable yeast component (their high levels of acidity can inhibit yeast's gas production), so we add dry yeast when baking. For best results, use milk (nonfat or low-fat for tangiest flavor) and yogurt that are as fresh as possible (check the sell-by date) and use them right after opening.

Makes: About 1 1/3 cups starter | Time: 1 week

Ingredients

- 1 cup nonfat or low-fat milk
- 3 Tablespoons plain yogurt (any fat level; use a brand with live cultures and no gelatin)
- 1 cup all-purpose or bread flour

Instructions

1. In a 1-qt. pan over medium heat, heat milk to 90° to 100°. Remove from heat and stir in yogurt. Pour into a warm 3- to 6-cup container with a tight lid.
2. Cover and let stand in a warm (80° to 90°) place until mixture is consistency of yogurt, a curd has formed, and mixture doesn't flow readily when container is tilted. (It may also form smaller curds suspended in clear liquid.) The process takes 18 to 24 hours. If some clear liquid has risen to the top of the milk during this time, stir it back in. If liquid has turned light pink, discard batch and start again.
3. Once curd has formed, stir in flour until smooth. Cover tightly and let stand in a warm place until mixture is full of bubbles and has a good sour smell, 2 to 5 days. Again, if clear liquid forms during this time, stir it back into starter. If liquid turns pink, start over. To store, cover and refrigerate.

Care and Feeding of Your Starter

To keep bacteria and yeasts healthy, the yogurt starter must be nourished occasionally with flour and milk.

Environment. When creating the starter, incubate it between 80° and 90°. Any hotter and the bacteria may die; any cooler and the starter could develop mold. Set it on top of your water heater, on a counter with a lamp warming it, or in an oven warmed with pans of boiling water. An established starter is stronger; after feeding, it can stand at room temperature.

To feed the starter and keep it going. For best results, try to feed the starter at least once a month, even if you're not baking. To feed, add warm (90° to 100°) nonfat or low-fat milk and all-purpose flour to the starter, each in quantities equal to what you'll be using in the recipe. For example, if the recipe calls for 1 cup starter, add 1 cup milk and 1 cup flour. (This is also the right amount for a monthly feeding even if you're not baking.) Cover tightly and let stand in a warm (80° to 90°) place until bubbly and sour-smelling and a clear liquid has formed on top, 12 to 24 hours. The clear liquid shows that the acid level has risen and is starting to break down milk protein, and high acid means sour flavor. Use at this point (just give it a stir first) or cover and chill.

To increase the starter supply (for gift-giving or quantity baking), you can add up to 10 cups each of milk and flour to 1 cup of starter (use a large container). The mixture may need to stand up to 2 days before the clear liquid forms on top.

Reference: *Sourdough French Bread* by George K. York, 1979, University of CA, Division of Agricultural Sciences Leaflet 2420 and an article in Sunset Magazine October 12, 2012 |Updated April 15, 2020 *Sourdough: Wild Bread of the West* https://www.sunset.com/food-wine/techniques/sourdough-starter

Sourdough Starter FAQs

What if I neglect my starter?

Even with the best intentions, it's easy to forget to feed a starter, but they can be surprisingly resilient. If you rediscover yours in the back of the fridge, take its "pulse." An "old" smell, no bubbles at room temperature, a top layer of dark brown liquid, or slight mold growth indicate your starter isn't feeling its best. First spoon off and discard any mold, then stir the starter. Feed it 1 cup each of flour and milk and let stand as directed in To Feed the Starter and Keep It Going, left. After 24 hours, discard half the starter and repeat feeding and standing. Repeat a third time, if needed, until the starter bubbles and has a "fresh" sour smell. If, after repeated feedings, your starter still smells "off" and won't bubble, throw it away. Also begin a new starter if mold growth is heavy.

Can you use a starter too often?

Overuse isn't a problem per se; if you bake several times a week or feed your starter a lot all at once (to increase quantity), it may take longer than usual to regain normal sourness. After feeding, let it stand as directed in To Feed the Starter and Keep It Going, left.

Why do starters "die"?

The longer a starter stands without new food, the higher the acidity gets; too much acid, and beneficial bacteria can't survive. Mold infestations may also kill off good bacteria.

Can I freeze it when I'm not going to use it for a while?

Starters generally freeze successfully for up to a few months, but freezing does change the bacteria's cell structure. Longer freezing brings more changes and decreases the chance of success with the thawed starter.

Making the Bread

Ingredients:

5 to 6 cups Bread Flour or All-Purpose Flour *
1 Tablespoon salt
2 Tablespoons honey
1 cup sourdough starter, room temperature fed at least 24 hours prior to baking
1¾ cups lukewarm water

Directions:

- Measure the flour by scooping flour gently in a cup. Stir in measured salt. Mix well.
- Add the measured starter
- Add the water and honey.
- Mix with mixer until well blended. If using a mixer with a dough hook, mix for about 2 minutes. Add the additional cup of flour to create a non-sticky dough as you mix, if necessary.
- Continue to mix with dough hook for an additional 2-3 minutes. If mixing without a dough hook, put dough onto a floured surface and knead for about 5 minutes or until non-sticky.
- Place dough into an oiled bowl; turn over the dough to oil the top and cover. Let rise in a slightly warm location (no more than 100 degrees).
- After an hour, remove dough to a slightly floured surface and fold it over itself two or three times. Place into bowl again and cover. Let rise another hour.
- After an hour, remove the dough again and place on a slightly floured surface; fold it over itself two or three times. Let rise again for another hour. (Total of 3 times rising).
- After the final rising time, remove the dough and place on a slightly floured surface. Fold over itself two or three times.

- Place dough back into the oiled bowl, cover with a lid or plastic wrap and place in the refrigerator for 8 to 48 hours.
- When you're ready to make the bread, turn out the dough to well-floured surface. Shape into a rough ball. Leave the dough, seam side up for about 15 minutes.
- Next, shape the dough into a shape according to your baking utensil. Use a long, covered baker or a large Dutch Oven (ovenproof) or a covered Round baker. Oil or grease the baking utensil; then place the dough into the utensil and cover it.
- Let the dough warm to room temperature and rise for about 3 hours. The bread dough will not rise much but will expand and relax.
- About 1 hour before baking time, preheat the oven to 500 degrees Fahrenheit.
- Just before baking dust the loaf lightly with flour, if desired and slash the top. If you are making a long loaf, one long ½ deep slash is nice. For a round loaf, a crosshatch mark ½ inch deep works well.
- Cover the baker pan again after slashing the top and place into the oven; reduce the heat to 450 degrees Fahrenheit. Bake covered for 40 to 45 minutes until starting to brown.
- Uncover the baker and continue baking for an additional 10 to 15 minutes until nice and brown. Watch this portion of baking to get a deep brown but not too brown.
- Remove the bread from the oven; transfer to rack to cool. Remove the loaf from your baker as recommended. I've found using an ovenproof Dutch Oven, I remove the loaf about 10 minutes after removing from the oven.

Note: if you want to use all-purpose flour, you can add 3 tablespoons vital gluten to give the mixture more bread flour qualities. But all-purpose flour seems to work OK too.

Bread Recipe adapted from King Arthur Flour website: https://www.kingarthurbaking.com/recipes/sourdough