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Dear Bread Lover:

I have baked sourdough breads and grown habanero peppers for several years. I decided to share with you some of my techniques and recipes.

I have some dried sourdough starter that I can send you, if I haven't already. You can choose between 1847 Oregon Trail sourdough starter and San Francisco sourdough starter. You need only send me a self-addressed envelope stamped with sufficient postage for one ounce. I'll return the requested starter with instructions to you in the envelope. You need only add flour and water to reconstitute it. You should have a lot of family fun making bread from it.

You will find instructions on the package. You can find sourdough recipes in a variety of places, but I have included a few for you in this message, plus a note about "kneading." If you follow directions, you will have happy customers, like the one in the adjacent photo, my precious wife Maria. She loves my bread, hot out of the oven and with a crispy, crunchy crust.

If you put a dollar bill in the envelope, I'll send you some seeds from habanero peppers. If they sprout (and I don't guarantee that they will) you will grow peppers that look like the one below, and you will be able to make your own hot sauce.

God Bless you and all your adventures. See the following pages for some interesting photos and recipes.

Sincerely,

Bob Hurt



Captain's Calamity
Habanero Hot Sauce

Ingredients: Habanero hot peppers fermented in sea salt; apple cider vinegar; time; TLC. Use liberally. Sail far. Die Happy. Bottled by with love by Jugito.

SOURDOUGH BREAD AND SAUERKRAUT

Your sourdough bread will look like that to the right. It goes well with cheddar cheese and sauerkraut (German for sour fermented cabbage), which I also made, by the fermentation process. To make sauerkraut, you wash two heads of cabbage, slice them thinly, sprinkle them with a tablespoon of salt, push them down into a 1 gallon jar or a crock, and fill with distilled water. Weigh the mass down with a bag of water. It lets gas escape. Cover it with a lid lightly and push it down daily as necessary. It will ferment within a couple of weeks and you will have sauerkraut, excellent with hot dogs, sausage, or other pork meat, and sourdough bread with butter and cheese. Store the unused sauerkraut in the refrigerator, covered. It will keep for several months.



RED SAVINA HABANERO PEPPERS (OUCH! HOT!)

Maria picked this pile of peppers from our habanero pepper bush. I removed the seeds and stems, added 5% salt, pulverized them in the blender, put them in a jar (pictured) to ferment at room temperature. After a month, I put it in the refrigerator to let it age for months. The taste mellows, but retains its heat, with age. I suspect these have a relation to Red Savinas, hotter than all but two known pepper varieties. I like to rub a little pepper mash onto shredded cabbage before adding water to make sauerkraut, to impart a tiny bit of heat. Make pepper sauce by adding 50% organic apple cider vinegar to fermented pepper mash. Experiment with other ingredients in the ferment like pureed carrot, onion, garlic, herbs, or spices. Refrigerate sauce if you add cooked ingredients.



HOW TO MAKE SOURDOUGH BREAD

INTRODUCTION

Good sourdough bread smells and tastes sour, has a chewy texture, has rather large crumb (holes in the bread), and has a crispy, crunchy crust. The crust becomes soft if you store the loaf in a plastic bag. It tends to absorb the moisture in the crumb. So, you should eat the loaf on the day you bake it, or soon thereafter., if you want to enjoy the crunchy crust.

The bread gets its sour taste from a long ferment of the bacteria in the dough. The bacteria produce acetic acid which causes the sour flavor. The bread gets its large crumb from the undisturbed ferment of the yeast in the dough, and from the expansion during baking of the gas produced by the ferment. The yeast produces carbon dioxide gas and alcohol.

In order to make the dough produce a sour taste, you must let it ferment for many hours, during which time it also rises. In order to make the gas bubbles stay in the dough, you must make the dough thick, not runny, and you must knead or stretch and fold it in order to make the protein strands known as gluten bind together.

In order to obtain the bacteria and yeast cultures in order to start the fermentation, you must either develop your own, or you must purchase or receive from a donor the starter cultures. Then, you must keep them alive in your kitchen by feeding the starter periodically with its favorite food: flour and water. If you bake bread daily, you keep the starter on the kitchen counter and feed it at least twice a day.. If you bake weekly, you keep it in the refrigerator and feed it at least once a week.

Differences exist between sourdough starters, depending on their areas of origin. Starters originating in cool, humid climates differ from starters originating in warm, dry climates. For example, San Francisco sourdough starter makes doughs that take a long time to rise and therefore deliver a more tart natural flavor. On the other hand, 1847 Oregon Trail starter has a more active yeast that makes the dough rise rather quickly, thereby yielding a bread with a less-tart flavor. You can change the effect of the bacteria and yeast in a given starter on your bread by changing the temperature and humidity of the ingredients and the proofing (rising) location.

Over the centuries bakers have studied doughs and breads, and they have empirically evolved many techniques for making the starter, dough, and baked loaves. I shall explain only a few methods in this article, methods I use.

A note about preparation. Before you start any cooking or baking activity, study the recipe, picture the process in your mind, and then gather together all of your ingredients, utensils, containers, and pans. Pre-measure your ingredients in advance. Cut, chop, and grind your ingredients as needed in advance. Put all ingredients ready-to-use into suitably sized containers within easy reach. Pre-grease your plastic bags and baking pans. Pre-clean your baking stone. Pre-flour your proofing basket. Pre-heat your oven. Take out your testing thermometer. Pre-fill your spritzing bottle with water. Pre-fill your cake pan with water and put it on the bottom oven rack. If you follow the above advice, you will make fewer mistakes and suffer less frustration and nervous tension, and your activity will become a pure joy.

HOW TO MAKE SOURDOUGH STARTER

If you don't buy your starter or receive it from a friend, you can make it yourself. In a 1-pint clean glass jar, stir together 1/4 cup each of unchlorinated water and store-bought or home-

ground wheat flour with a teaspoon of sugar. Cover with cheesecloth and set out of the way in a warm but not hot place your kitchen. Don't expose the mix to direct sunlight. Don't worry if your kitchen seems cool, but the starter will not develop near, at, or below freezing. Starter contains about 60% water and should not contain less than 50%.

Within two weeks the mixture will start bubbling. That means bacteria and yeast in the air or flour have started consuming the nutrients in the mix and producing gas. If it smells rotten, throw it out and start anew with a jar you have boiled in water for 20 minutes. If it merely smells sour and perhaps a little yeasty, you have good starter.

Feed your starter by mixing together equal weights of starter, flour, and water. Then let it sit till it robustly bubbles, about 9 hours. Repeat and wait 8 hours. Repeat and wait 3 hours. You now have starter ready to use to bake bread.

Save some starter for your next batch of bread. Put $\frac{1}{4}$ cup of the starter into a clean glass jar that holds 1 cup, put the lid on the jar, and save it in your refrigerator. Or cover the jar loosely and set it on your counter top if you plan to make dough the following day.

Feed the starter weekly if you refrigerate it, or twice daily if you leave it out in the kitchen. You can keep starter alive for years, centuries, or millennia this way. For example, you can obtain starter that people have fed and kept alive since the 1847 Oregon Trail pioneer days by visiting <http://home.att.net/~carlsfriends/>.

You can and should dry some of your starter, both for giving away to friends, and for emergency use in case something goes wrong with your wet starter. I dry mine this way:

1. Feeding the starter, adding a little more water than usual
2. Let it sit for several hours till bubbly
3. Spread it thin with a rubber spatula onto several Teflon-coated cookie sheets.
4. Set the cookie sheets in the oven with the light on and door ajar, monitoring the temperature to ensure it does not exceed 120 ° F..
5. When it dries, the starter flakes up as it breaks loose from the Teflon surface.
6. Gather the flakes and put them into a zip lock bag.
7. Label the bag with instructions.

The dried starter will keep in the freezer or refrigerator for a year or more.

Use this process for making starter for baking bread at home. Start with 15 grams (a tablespoon) of stirred-down starter (bubbles removed) in a 1-quart glass or plastic container.. Stir in 15 grams each of flour and water, cover and let it ferment 9 hours, stir in 45 grams each of flour and water, cover and let it ferment 8 hours, stir in 135 grams each of flour and water, cover and let ferment 3 hours. You will have 405 grams of starter, enough to make 3640 grams (8 pounds) of dough. From this you can make four 2-pound loaves. You will how to calculate weights for ingredients in the next topic.

Remember, 1 pound = 454 grams; 1 teaspoon = 5.1 grams (salt or water)

SOURDOUGH BREAD – THE KNEAD METHOD

You knead dough in order to develop the gluten so the strands of dough will stick together, making the loaf hold its shape and keeping bubbles inside the dough during the rise.

Ingredients. I use the following ingredient proportions for kneaded dough, and I weigh them with a multi-purpose scale¹:

Ingredient Proportions	Weight	Volume
1x starter (50% hydration)	91g	½ cup
3x unchlorinated water	273g	1 ¼ cups
5x high-protein flour (13%+)	455g – 1 pound	3 ½ cups
.1x salt (1.8% all flour weight)	9.1g	2 teaspoons scant
Weight of dough	827g – 1.82 pound	

The above recipe will produce a finished loaf that weighs about 1 ½ pounds.

Note that flour and starter do not have precise correlations between weight and volume. Both contain varying amounts of air that take up space. I stir down the starter only slightly, and I figure cups of flour as scooped straight out of the bag.

Mix and Knead. Mix the starter and water together thoroughly, then mix in the salt, then mix in the flour, then knead.. Start your bread by putting the water and starter into the bread mixer. I recommend a [KitchenAid](#) or similar mixer, but I use an old-style [Sunbeam Mixmaster](#) that tries to hop all over the counter as it kneads. Turn on the mixer and slosh those ingredients around while you weigh the flour. Mix in the salt. Pour the flour into the mixer while it runs a very slow speed. As the ingredients incorporate, turn up the speed slightly to knead and scrape the edges of the bowl as necessary to incorporate all dry ingredients. Knead for 5 minutes – no more and no less. You will notice that the mass of dough clings together and does not stick much to the edge of the bowl.

Add nuts, seeds, and fruit. If you want to add seeds, nuts, or fruit, you can add them now, but you might break them apart, especially dried fruit like raisins. Alternatively, to avoid disintegrating the fruit, lay the dough on the table, stretch it out, sprinkle the nuts, seeds, or fruit onto the dough, and roll it and fold it to seal them in.

Proof the dough (let it rise). Coat the inside of a plastic bag or large glass bowl with olive oil, plop the mass of dough in it, and cover or seal it. If you put the dough in a plastic bag, then set the bag in a bowl, you will more easily see the amount it rises. Let the dough sit at room temperature till approximately double in volume. This can take up to 5 or 6 hours.

Preheat. For no-fuss baking, preheat the oven to 375° F. You may bake it at a higher temperature, but it takes more care, as you will see below.

Punch Down and form Loaves. Punch down the dough by opening the bag and mashing down on the mass with your fist. Reseal the bag, wait 45 minutes, remove the dough, form loaves either as boules or in greased bread pans, and set them aside, covered with plastic or a floured

¹ **About scales and weighing.** I normally weigh my ingredients. In summer 2007 I found a great electronic postal scale for \$27 including shipping on EBay, brand new. It arrived two weeks after I bought it, and has an accuracy of .1 grams for weights up to a kilogram, and ½ gram for weights up to 25 kilograms. Look for the Ultraship 55. It works beautifully.

floured cloth, to rise for one hour.

Score and top loaves. Uncover the loaves, slice them one or more times on the top with a razor knife or snip them several times with sharp scissors. If you don't score them with a knife, the oven rise will explode the loaves, breaking the crust. You may brush the tops with milk or cream and sprinkle them with sunflower, poppy, or sesame seeds, or rolled oats.

Bake. Bake the loaves in the middle of the oven till brown on top and internal temperature has reached 190 ° F. Baking them longer will dry out the loaves. Small loaves will take about 35 to 45 minutes, and larger loaves 50 to 60 minutes.

Cool. Remove the loaves from the oven, remove them from the pans immediately, and place them on a rack to cool for 30 minutes. The loaves continue baking internally on the rack so don't slice them before 30 minutes.

Alternative for exceptionally crunchy crust. Preheat the oven to 550° F, with a cake pan of water on the bottom shelf, spritz the oven walls with water when putting the loaves in to bake, and 3 more times at 3 minute intervals, paint the tops of loaves with milk at 15 minutes for a glazed look, and turn down the heat to 400 ° F. Loaf tops should turn dark brown.

Alternative for San Francisco Sourdough. 3 cups starter, 3 cups flour, 2 tablespoons salt. No water. Mix the flour and starter, then knead 5 to 8 minutes. Add the salt and knead 5 minutes more. Put the dough into a heavily floured [proofing basket](#), put the basket in a plastic bag, poof the bag and tie it shut. Set the bag in the refrigerator for 12 to 24 hours. The longer you leave it, the tarter the flavor. Preheat the oven to 550° F with a cake pan of water on the bottom shelf. Sprinkle the hot baking stone or a cool cookie sheet with corn meal. Invert the proofing basket onto the baking surface. With a serrated or razor sharp knife cut a "C" shape in the top of the boule.. Spritz the oven walls with water, put the loaf in the oven, then shut the door. Spritz 3 more times at 3 minute intervals. At 15 minutes, paint the top with milk for a glazed look. At 20 minutes, reduce the heat to 450° F. At 30 minutes, rotate the loaf 180° to brown it evenly. At an internal temperature of 190° F remove the loaf to a cooling rack.

SOURDOUGH BREAD – THE NO-KNEAD METHOD

You use this no-knead method of making sourdough bread if you don't want to knead the dough and you don't have a mixer. Several powerful dough strengthening mechanisms will go do the work of the mixer: hydration (getting the flour wet), fermentation (yeast producing gas), stretching the dough on the table, poking the dough to distribute gas, and folding to rearrange the mass and stimulate further fermentation.

- Dough hydration (percentage of water) – 55% to 75% - wetter doughs, up to 95%, do make good bread, and the doughs rise better.
- Flour in the starter - should constitute 25% to 30% of the flour in the recipe.
- Bulk fermentation – should last 3 to 6 hours, depending on the bread.

Seeds and nuts – if you use them, add them at the beginning

Ingredients. You can use the same ingredients as for the Knead method, but change the proportions to make it wetter.

Ingredient Proportions	Weight	Volume
1x starter (50% hydration)	227g	2 ½ cup

1.2x unchlorinated water	273g	1 ¼ cups
2x high-protein flour (13%+)	454g – 1 pound	3 ½ cups
.045x salt (1.8% all flour weight)	10.2g	2 teaspoons
Weight of dough	964g – 2.12 pound	

Mix, rise, stretch, fold. Roughly mix the ingredients, making sure to moisten all the flour. A poolish (very sloppy starter with high water content) might look like a slimy mess, but you don't have to mix it in thoroughly.

Repeat the following process 3 times

1. Let the dough sit in a covered container for 45 minutes. The first time it will not look impressive.
2. Dump out the dough onto a floured work table.
3. Spread the dough out until it forms a rectangle about 3" thick.
4. Poke the dough all over by pressing downward with the spread finger tips of both hands. This redistributes gas bubbles. Omit this step if you want large air pockets in the finished bread.
5. Fold the edges of the dough inward - top and bottom, left and right, then over in each direction to form a big lump.
6. Put the dough back into container.

Each time you do this, the dough will get better. After the second fold, it will be as good as what you get out of your mixer, the third time will be much better than that. Let the dough rise for 45 minutes to an hour.

Scale and Score. Once the dough has risen again, cut it into loaf sizes with a sharp knife, verify the weight on a scale, form it into loaves on a cookie sheet, score the top with a serrated or razor knife, and let the loaves sit covered for 15 minutes..

Bake. Use the alternative crunchy crust baking method above.

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OTHER SOURDOUGH BREAD RECIPES

SOURDOUGH FRENCH BREAD- RECIPE MORE HEALTHY FOOD SOLUTIONS

Adapted from The New Family Cookbook, by Bill Eichner, M.D.

Dr. Eichner describes here the recipe that he uses once or twice a week to make bread. This recipe was developed over many years, starting with a variation of Julia Child's French Bread recipe, and finally combining some ideas from a recipe from the New England Culinary Institute, called Hearth Bread.

Simple Solution: Sourdough French Bread Yields 4 small loaves or 14 rolls

6 cups unbleached organic whole grain white flour, divided
1/2 to 1 cup coarse whole-wheat flour
3 teaspoons salt, divided
2 3/4 cups warm water, divided (at about 100 ° F)
1 cup Sourdough Starter (see below)
1 teaspoon baker's yeast
2 tablespoons olive oil
1/3 cup cornmeal

Mix a sponge the night before you plan to bake, by combining 3 cups white flour and the whole-wheat flour with 2 teaspoons salt, 2 cups water, and the sourdough starter. Mix. Cover with a towel and let sit for 10 to 18 hours.

The next morning, prepare the final dough by adding another 3 cups of white flour, 3/4 cup warm water, 1 teaspoon salt, and the yeast.

Using a mixer with a dough hook or food processor with a metal blade, mix at low speed for 2 minutes and then at medium speed for 6 minutes. Turn out onto a floured board and knead by hand until the desired consistency is obtained. Add flour as necessary during the mixing. Place the dough into a large bowl that has been coated with olive oil, making sure that the top of the dough is also coated so that it does not become dry. Cover the bowl with a towel, and allow to rise to two or three times the original volume. The speed of the rise can be altered or halted by changing the ambient temperature; the cooler the temperature in the rising area, the slower the rise. The dough can also be placed in the refrigerator to finish rising at a later date.

Punch the dough down briefly. Dump it again onto a floured board. Cut into loaf-sized pieces. You'll learn to form the loaves or rolls that suit you best. I usually bake two small round loaves and about eight rolls. I place the loaves on an oven sheet sprinkled with cornmeal, cover with a towel, and allow to rise a second time, at least 1 hour.

Heat the oven to 425 ° F. Slash the top of the loaves with a razor or scalpel blade. Place into the preheated oven. Spray every 2 minutes with water until the bread has baked for 10 minutes. Then lower the temperature to 350 ° F and bake another 15 minutes. Remove the bread from the sheet, and allow to cool on a rack.

SAN FRANCISCO SOURDOUGH FRENCH BREAD CATEGORY: BREADS

Prep Time- 960 Minutes Description- A fantastic bread recipe, Serves 4

1 tbs rye flour
1/4 cup sourdough starter
1 1/2 cup bread flour
1 1/2 cup water

Instructions: ONLY use a wooden spoon to stir the mixture , because the idea is to get lots of air to get the yeast developed.

Mix together:

1/4 cup of sourdough starter
1/2 cup of bread flour
1/2 cup of water

Put in dark , but warm place. A good place is the oven. If you have a gas oven, the pilot light will create enough heat to warm the mixture. For an electric oven, turning on the light will supply warmth. Do not actually turn on the oven, because even the lowest setting will be too hot for the starter. If it is summertime and air temperatures are near 80 ° F (27C) or above, you can simply keep the starter on the kitchen counter covered with a small hand towel.

After 8 hours when the starter has peaked, add the following ingredients to the starter:

1 cup of bread flour
1 cup of water

MIX IT AND try to add additional air and let it sit in the oven for another 8 hour.

SOURDOUGH FRENCH BREAD

Recipe By : Bill Turner Hewlett-Packard Personal Software Division

1 cup sourdough starter
1/2 cup milk (any type, but I prefer whole milk)
1 1/8 tablespoons sugar
2 1/8 teaspoons salt
1 1/8 ounces shortening
1/2 pound flour

1. Combine milk, sugar, salt, and shortening in a pan. Heat until shortening melts, then cool to lukewarm (about 45 C) .
2. Stir milk into starter. Add flour gradually, forming dough that pulls away from sides of the bowl.
3. Knead until smooth (about 15 min.), adding flour as needed to keep the dough from sticking to the board. When done, the dough will be fairly heavy, but smooth in texture.
4. Place in a well-greased bowl and raise in a warm place until doubled.
5. Form into a long loaf (about 40 cm long). Place on a greased baking sheet and let rise again, until almost doubled.

6. Cut diagonal slits in top of loaf with a sharp knife, and bake in a 400 degree oven until done, about 30-35 min.
7. Remove from pan, and let cool in a draft-free location.

This is a hearty bread, possibly heavier than many people are used to. The flavor is wonderfully tangy, and complements just about any meal. Try it with garlic butter! This bread is slow rising. I usually spend two days on it - start the dough one day, let it rise overnight, then form the loaf and bake the next day.

Be careful that the milk mixture has cooled before adding it to the starter. If it's too hot, you'll kill the starter and the bread won't rise.

Since the dough rises for a long time, I usually cover it with a damp towel to keep it from drying out. If you want a chewy crust, brush the top of the loaf with a mixture of corn starch and water before baking. Also, placing a pan of water in the oven makes a crustier loaf.

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