

A Sourdough Log

or

How to Make Edible Sourdough Bread At Home

by

Two Sourdough Wanabees in Montana

Revision 1.0

April 2015

Introduction

Call us 'Montana Guy' (MGuy) and 'Montana Gal' (MGal).

We have spent significant effort over the past years looking for a source of sourdough bread that has the sharp, tangy sour flavor that we prefer. Our efforts have been consistently unproductive, we could find lots of bread advertised as 'sourdough' but it was always too mild to satisfy us. So early in April 2015 we purchased a packet of dry 'Sourdough Starter' from Linda Wilbourne's website, <http://www.SourdoughBreads.com> and began our journey toward a satisfying loaf of bread. We read Linda's instruction booklet and tried to follow her directions as closely as we could. We activated the starter, made a sourdough 'sponge', used a portion of the sponge to make sourdough dough, and baked this dough into bread. Our first loaf of homemade sourdough bread was not as sour as we would have liked but the texture was good and the taste was very enjoyable. In short, we rated our initial sourdough experience as a success.

As we worked our way through the process from dry starter to edible loaf we took snapshots and made notes to document our actions and progress. In the time since we baked our first loaf of sourdough we have collected all our photos, notes, and memories into what we think is an organized, readable, and useful form. We have titled the result our 'Sourdough Log'. Our original intent in creating this 'Log' was to document our actions so we could repeat the good parts and correct the not-so-good parts in the future.

Our first use of our 'Log' was to attach it to an e-mail that we sent to Linda asking for clarification of a few procedural details. The 'Log' proved, in this instance, to be a useful communication tool and Linda asked if she could post it on her website. We have since revised, reorganized, and expanded our 'Log' in an attempt to make it more useful and usable by other sourdough neophytes such as ourselves. The following document is the result.

Clarification of Terms

Sourdough Starter -	The dry powder that ships in a packet from SourdoughBreads.com
Stash -	The activated starter that is stored in the refrigerator and used to provide the yeast activity required in the breadmaking process
Sponge -	The actively fermenting material that is obtained by combining a small (1/2 cup) amount of 'stash' with flour and water. The sponge is mixed with flour and water to form dough.

Organization of This Document

This document is organized into four main sections; the Introduction, the Sourdough Roadmap, the Sourdough Log, and Aging of the Stash. The Introduction provides a wee bit of background information. The Sourdough Roadmap section provides a sequential diagram that graphically identifies the key steps and events, as described by Linda in her booklet, involved in the production of a loaf of sourdough bread. The Sourdough Log describes, with photos, the process we followed and the results we obtained while following the Sourdough Roadmap. And in Aging of the Stash we provide photos of what happens to your stash as it ages over a period of several weeks (aging the stash increases the sour of the final product and that's what we are personally looking for).

San Francisco Sourdough Bread Booklet

This document is based on the instruction booklet "San Francisco Sourdough Bread" written and provided by Linda Wilbourne. We've provided references to this booklet through this document in an attempt to tie the two documents together. A reference such as "Booklet page 4" refers to page 4 of Linda's booklet.

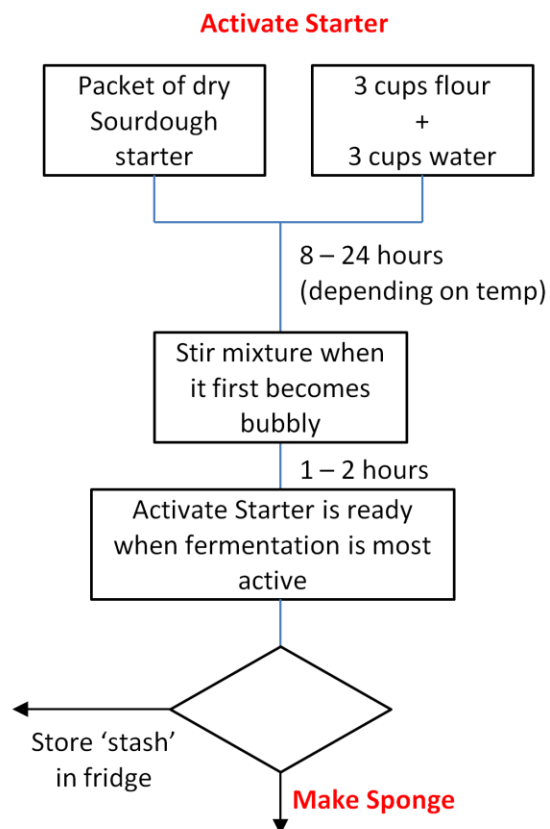
Sourdough Roadmap

Our professional backgrounds make us very comfortable with flow charts, process diagrams, and things like that. Consequently, it was natural for us to take the process described by Linda in her booklet and summarize the individual steps in a graphical format. The result is what we call the 'Sourdough Roadmap'. This Roadmap identifies individual steps and events in the sourdough process with a limited amount of explanatory verbiage. More detailed instructions and comments can be found in Linda's booklet using the page number references provided in the Roadmap.

The sourdough bread process can be organized into five main 'sections':

- 1) Activating the Starter
- 2) Creating the Sponge
- 3) Making dough by adding flour and water to the sponge
- 4) Allowing the dough to rise
- 5) Shaping and baking the loaf

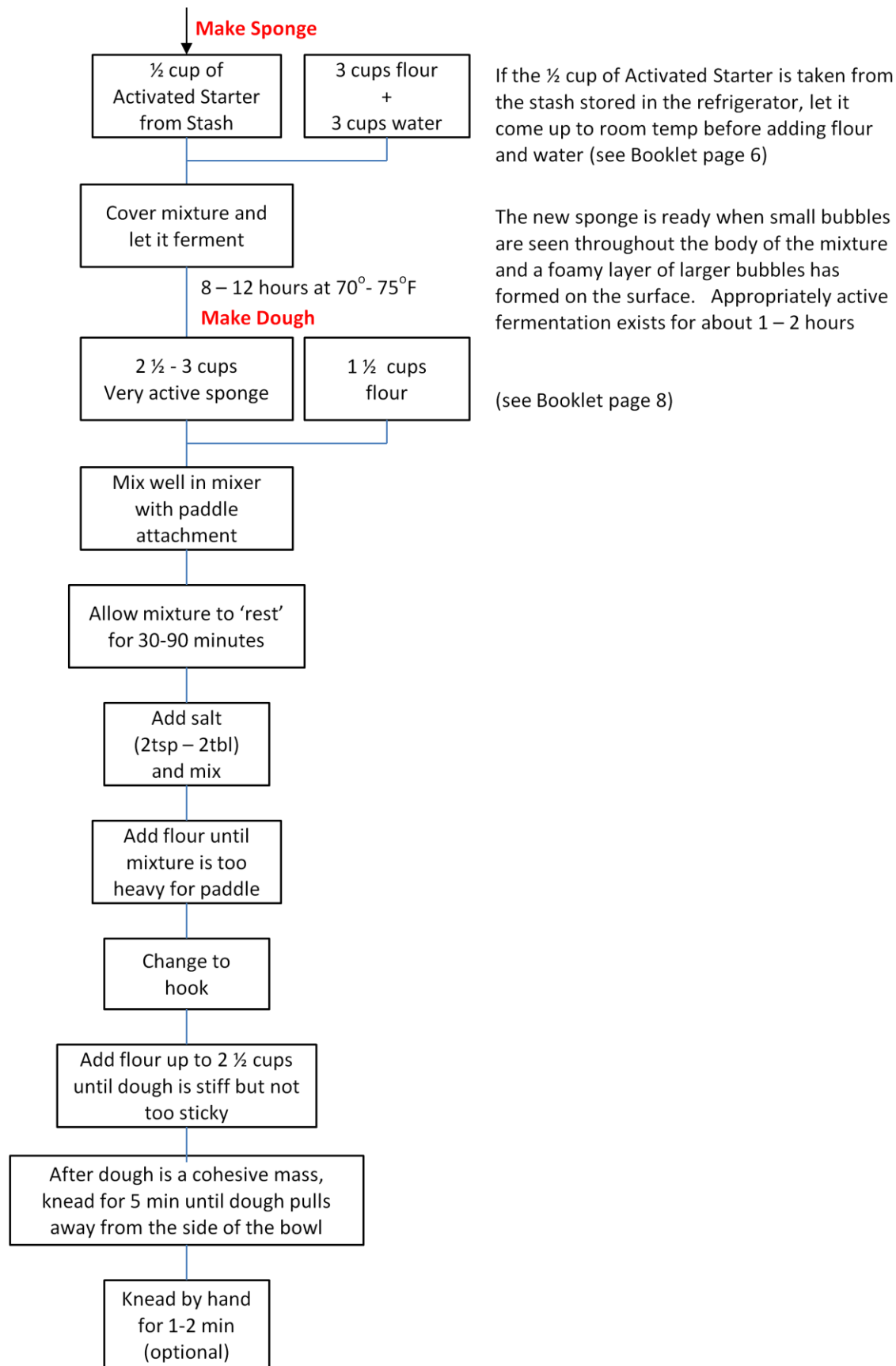
The beginning of each of these sections is highlighted in **Red** in the following Roadmap.

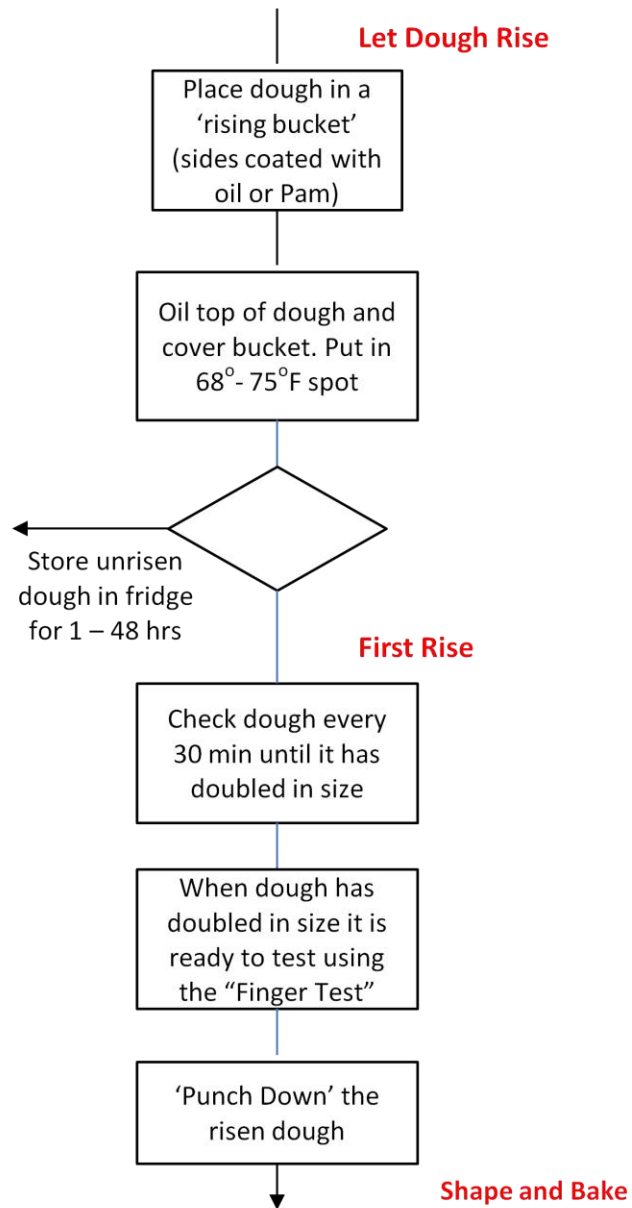


Mix 3 cups (15 oz by weight) of unbleached white flour with 3 cups of room temp water (65°F-75°F). We used King Arthur brand flour and bottled spring water, but less expensive flour and tap water are probably OK. Start checking the mixture regularly after 8 hrs. (see Booklet pg 2-3)

Activated Starter is ready when small bubbles are seen throughout the body of the mixture and a foamy layer of larger bubbles has formed on the surface. For us, this occurred approx 10 hours after initial mixing. Appropriately active fermentation exists for about 1 - 2 hours

Once the Activated Starter has reached max activity take out ½ cup and store the remainder in the refrigerator

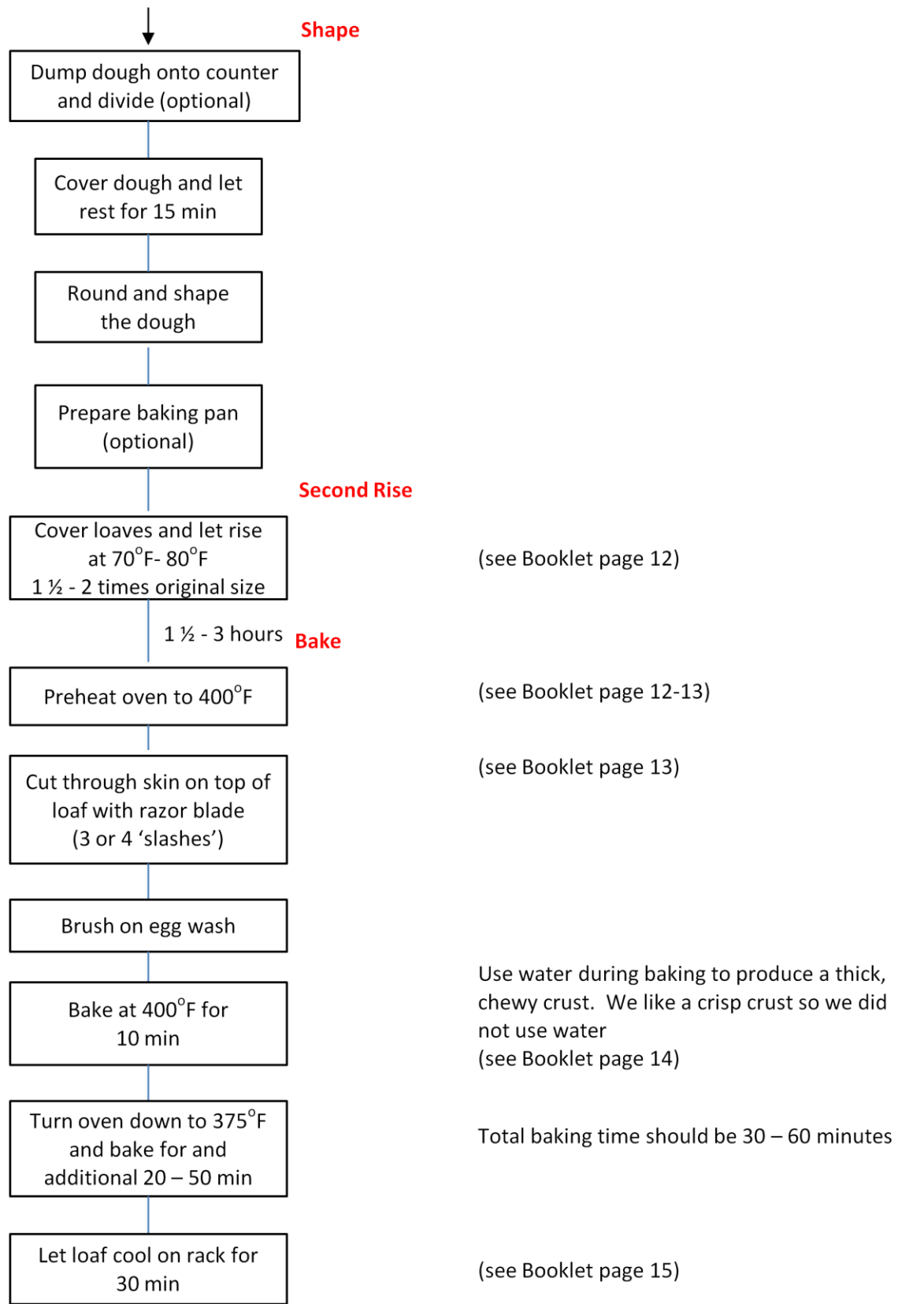




Storing the unrisen dough in the refrigerator for up to 48 hours is an option (see Booklet page 9)

(see Booklet page 10)

(see Booklet page 10)



Sourdough Log

The following is a chronological summary of key events that occurred as we followed the instructions in Linda's booklet from activation of the sourdough starter through tasting of a fully baked loaf of authentic, homemade sourdough bread. Montana Gal has lots and lots of experience baking bread and both she and many of her close relatives in Alaska have experience with sourdough and baking sourdough bread. This was Montana Guy's very first hands-on experience with bread baking. Montana Guy is an eater, not a baker and the sole compelling motivation for baking sourdough at home was the fact the we were consistently unable to purchase bread, anywhere in Northwest Montana, that satisfied our specific tastes for sharp, tangy sourdough bread. Our purpose and intent in creating this log was to document our steps so we'd know what we'd done when we were finished. Being able to review this log is allowing us to build on the things we think we did right and to correct or improve the things that we think should be changed. This log documents our first attempt at the 'Sourdough Process' so we think it might be useful to other folks who are also attempting the process for the first time. It needs to be pointed out that the process documented here should be considered a 'Baseline' since I'm sure we'll make changes and adjustments, as we gain experience, to make the results more satisfying to our particular tastes. And be aware, your results may vary.

Activation of the Starter

Tuesday 07 April 2015

Cabin temp 65°F

Time 9:00PM

Mixed 3 cups King Arthur unbleached flour

3 cups spring water

1 packet San Francisco sourdough starter

Left mixture overnight in large stainless steel mixing bowl covered with plastic wrap

Wednesday 08 April 2015

Cabin Temp 68°F

Time 9:00AM

The surface of the mixture in the bowl is covered with bubbles but static, no activity is apparent, bubbles are not popping, no new bubbles are appearing.

Continued to check the condition of the mixture in the bowl all day, at intervals of 2 hr to 4 hrs, no obvious change.

My impression is that the most active phase of growth/development occurred during the night or early morning before I checked it at 9:00AM.

Wednesday 08 April 2015

Cabin Temp 70°F

Time 10:00PM

Since the mixture had appeared to be past it's active stage all day I decided to feed it (as suggested on pg 4 of instruction booklet)

I removed 1 ½ cups of sponge from the mixing bowl and put it in a 54 oz capacity glass jar. I mixed 3 cups King Arthur unbleached flour with 3 cups spring water in a mixing bowl and added this mixture to the mixture in the jar

Thursday 09 April 2015

Cabin Temp 62°F
Time 8:00AM

The volume of the mixture in the jar grew to the point that it overflowed the top, approximately $\frac{1}{4}$ cup of mixture was on the counter.

There were lots of bubbles on the surface of the mixture and bubbles could be seen at all levels within the mixture, but all appeared to be quiet, no surface bubbles were bursting and the internal bubbles were not rising (they appeared to be stationary, did not appear to be moving, they could have been moving very slowly). According to Linda, in later correspondence, this is normal. The relatively thick layer of large (up to about $\frac{3}{8}$ inch in diameter) bubbles on the surface and the presence of a large number of smaller bubbles ($\frac{1}{16}$ inch to $\frac{1}{8}$ inch in diameter) are indicative of the very active stage of the fermentation process – bubbles are rising and popping, they're just doing it in such SLOW motion that it can't be detected by any but the most patient.



Thursday Morning, 09 April, 8:00AM

Photo above shows the bubbles on the top of the sponge. This photo was taken after about $\frac{1}{2}$ cup of sponge had been removed.

The photo to the right shows the bubbles that are present within the activated starter. These bubbles were not actively rising, they appeared to be stationary (motionless or moving VERY slowly).



Thursday 09 April 2015

Cabin Temp 62°F
Time 9:00AM

I took ½ cup activated starter out of Jar #1 and put it into Jar #2. I mixed 3 cups King Arthur unbleached flour with 3 cups spring water in a stainless steel mixing bowl and then added the mixture to the activated starter in Jar #2

I put jar #1 (which is nearly full of activated starter) into the refrigerator with its lid placed loosely on top



Thursday 09 April,
9:00AM

Jar #1 is on the left, Jar #2 is on the right. Approximately ½ cup of activated starter has been taken out of jar #1 and put into Jar #2.



3 cups of King Arthur flour is mixed with 3 cups of spring water in a stainless steel mixing bowl.



The flour /water mixture is added to the ½ cup of existing activated starter in Jar #2.



Thursday, 09 April 9:00AM

Jar #1, which is nearly full of activated starter, is placed in the refrigerator with the lid placed loosely on top. Bubbles are visible throughout the mixture.



Activated starter in jar #2. Thursday morning, 09 April 2015, 9:00AM.



Thursday evening, 09 April 2015, 9:00PM. Activated starter has grown approximately 50% in volume during previous 12 hours.



Thursday evening, 09 April 2015, 9:00PM, Jar #2. A layer of 'foamy stuff' has formed on the top of this mixture, underneath the largest bubbles.

This jar was placed in the refrigerator after these photos were taken.



Jar #1 on left, Jar #2 on right
Friday Morning 10:30 AM
10 April 2015



Jar #2 in fridge
Friday morning 10:30 AM
10 April 2015

There is a thick layer of 'foamy' stuff floating on top of the activated starter. The activated starter did not grow much overnight (cool temp in fridge).

We tried to follow the procedure that is described on pages 2-4 of the instruction booklet, and we think we did things correctly. The only 'discrepancy' that we noticed was that we never saw fermentation activity that appeared to be as active and energetic as described in the booklet. We saw lots of bubbles develop, a layer of large bubbles on the surface (the layer was about ½ inch thick) and many small bubbles in the body of the mixture (distributed throughout from bottom to top). But if the small bubbles were moving upward they were doing so VERY slowly, no motion was readily apparent. And we never saw bubbles actually popping on the surface.

In later correspondence with Linda she indicated that good indicators of an adequately active mixture are; 1) a large number of small bubbles distributed throughout the mixture, and 2) a well developed layer of 'foam', composed of larger bubbles, on the surface of the mixture. So the photos above are representative of what the properly active starter should look like.

Friday evening we took Jar #2 out of the refrigerator and put ½ cup of its contents into a glass bowl. We added 3 cups of King Arthur flour and 3 cups of spring water to the bowl and mixed it thoroughly. By Saturday morning the mixture in the bowl had grown in volume by 50%-100% (hard to judge in a roundy bowl).



The photo above is a picture of our sponge mixture on Saturday morning. The volume grew by 50% to 100% overnight. The mixture was 'bubbly', it had a thick layer of large bubbles on the surface and many smaller bubbles distributed throughout its volume. But we didn't detect a lot of action, the bubbles didn't appear to be popping and the smaller bubbles did not appear to be moving (if they were moving they were doing so very slowly).



The photo of the same bowl shown in the image to the left. The perspective (point of view) has been changed to show the main body of the mixture instead of the surface. Small bubbles are distributed throughout the volume of the mixture but very, very little motion of these bubbles could be readily detected.



The photo to the left shows our bowl of sponge after 3 cups of the mixture have been removed.

We removed 3 cups of the sponge mixture from the glass bowl and put it in a stainless steel mixer bowl.

We then added 1 ½ cups of flour and mixed it using the paddle attachment until the mixture was reasonably smooth (this took a couple of minutes). We let the sponge/flour mixture rest for approximately 90 minutes and added 2 teaspoons of salt and an additional 1 cup of flour. We mixed this new mixture with the paddle attachment for a couple of minutes then changed to the hook attachment and mixed until the mixture started to pull from the sides of the bowl and form a 'ball' on the hook.



We mixed the mixture of 3 cups of sponge + 1 ½ cup of flour with the paddle attachment for a few minutes and then let this mixture 'rest' for 90 minutes.

After the mixture had rested for 90 minutes we added 2 tsp salt and an addition 1 cup of flour (for 2 ½ cups total) and mixed. We switched to the hook attachment after a couple of minutes and mixed until the mixture pulled from the sides of the bowl and formed a 'ball' on the hook.



We sprayed the inside of a straight-sided stainless steel 'bucket' with Pam and transferred the dough from the mixer bowl to the 'bucket'. The 'bucket' we used is approximately 7 inches in diameter, 6 ½ inches deep and has a capacity of approximately 150 ounces.



We put the kneaded dough in a stainless steel 'bucket' to rise. The bucket is approximately 7 inches in diameter and 6 ½ inches deep. It has a capacity of approximately 150 oz.

We watched the dough in our 'bucket' and when it had doubled in size (approximately 2 hours – the temperature in our kitchen was approximately 70°F) we poked the top of the dough with a finger. The indentation remained, pretty much, so we decided we were ready for the next step.

We 'punched down' the dough and then dumped the dough out of the 'bucket' and onto the counter. We figured we had just about enough dough for a single round loaf of bread so we didn't do any dividing. We tried to form the dough into a nice round shape but we weren't very successful. The dough didn't seem to be too wet but when we stopped 'shaping' it, the mass flattened out into shape that would be more appropriate for focaccia rather than sourdough. We think that the dough would

have been stiffer and held its shape better if we'd added more flour during the mixing process – but that is only a guess.

Note: In later correspondence with Linda she said that due to differences in gluten, sourdough dough is not as 'stiff' as the dough in conventional bread. Sourdough dough therefore tends to 'rise outward' rather than upward, which was the behavior we were seeing. This is normal and it's why Linda offers several different 'forming' pans on her website. We used a glass 'casserole' dish that was handy.



Our dough did not seem to be very sticky or wet but it was not stiff enough to hold the classic round shape we wanted. As soon as we stopped 'shaping' the dough it would flatten out into a shape that was more appropriate for focaccia than for sourdough. We surmised that this apparent lack of stiffness could possibly have been avoided if we had added more flour during the mixing process.

We let the dough 'rest' for about 15 minutes and then tried to shape it again. The dough still refused to hold its shape on its own so we put the ball of dough into a glass bowl that had been sprayed with Pam (we didn't use any cornmeal). We let the dough 'rest' in this bowl for about 2 hours, the second rise (our kitchen temperature was 68°F to 70°F). We tested the dough using the 'finger test' and it passed, so we decided it was ready to bake. We brushed the top surface with egg wash and slit it with a razor blade.

Our oven had been pre-heated to 400°F. We like our bread to have a 'crispy crust' so we didn't use any water during the baking process. We put the dough (which was still in the glass bowl) into the oven and after 10 minutes we turned the temperature down to 375°F. At the 45 minute point (10 minutes at 400°F and 35 minutes at 375°F) we checked the internal temp of the loaf with a fast reading thermometer. Our initial reading was 195°F so we gave the loaf another 5 minutes and checked its internal temperature a again. Our second reading was 200°F so we took it out of the oven and put it on the counter to cool. The loaf had a nice brown crust and passed the classic 'thump' test.



After approximately 50 minutes in the oven (10 minutes at 400°F and 40 minutes at 375°F) our bread had an internal temperature of 200°F and a nice brown crust. The internal texture was good with a pretty uniform distribution of relatively small holes.

When we sliced our loaf we found that it was fully cooked clear through to the middle and the bread had a nice texture that was characterized by a fairly uniform distribution of relatively small holes.

The final test, of course, is the taste test and, considering this was our first loaf of sourdough, we were pleased to find that both the taste and the texture were pretty good. Quite acceptable as a matter of fact, it truly tasted like sourdough. The only 'disappointment' was that the bread was not as 'sour' as we would prefer. So we now have two jars of activated starter 'aging' in the refrigerator. After the starter has 'aged' for three or four weeks we plan to make another loaf or two.

Aging of the Stash (Activated Starter)

The photo below shows our two jars of freshly activated starter 'aging' in our refrigerator. They had been 'aging' for approximately 2 days when this snapshot was taken.



April 10, 2015

The photo to the left shows our two jars of sourdough starter in our refrigerator. This photo was taken on Friday Morning 10 April 2015 at 10:30 AM

Jar #1 on left, Jar #2 on right

This activated starter is 1-2 days old. There are small bubbles (1/16 to 1/8 inches in diameter) throughout the mixture and a foamy layer of larger bubbles (up to 3/8 inches in diameter) on top of the mixture.

The photo below shows our two jars of activated starter after they had been 'aging' for approximately 2 weeks.



April 26, 2015

The photo to the left shows our two jars of sourdough starter that have been 'aging' in the refrigerator for approximately 2 weeks. The jar on the left was started on April 09 and the jar on the right was started on April 10. This photo was taken on April 26. A layer of liquid formed on the surface of the starter after several days and has been slowly growing in thickness. In this photo the liquid layers are approximately 1 1/2 inches thick.



May 01, 2015

The photo to the left shows our two jars of sourdough starter that have been 'aging' in the refrigerator for approximately 3 weeks. The jar on the left was started on April 09 and the jar on the right was started on April 10. This photo was taken on May 01. The thickness of the layer of liquid on the surface of the starter continues to grow.

So now what do you do to use this stuff.

After the starter has been left alone and remained in the refrigerator, unfed, for four weeks

- 1) Mix the 4-week old starter well, incorporating all the liquid into the white part (don't pour off or discard anything)
- 2) Mix $\frac{1}{2}$ cup of the 4-week old starter with 3 cups of unbleached flour and 3 cups of spring water
- 3) Put the 4-week old starter back in the fridge without adding anything to it and let it continue to age for up to another 4 weeks

Using this 'aged' starter should result in a significantly more sour result.

