

# Sourdough

## **What is Sourdough?**

Baking sourdough bread is an ancient art. It is a simple bread made from flour, water and salt. Through fermentation, sourdough is a bread high in flavor, while low in gluten and free of phytic acid. Sour dough is derived from the wild yeast that is- in the air, on the surface of fruit, fruit trees, leaves, in your bag of flour, literally everywhere. We simply capture the yeast as we make the sourdough start and then continue to take care of it.

## **Sourdough Starter:**

When making sourdough it all begins with a starter. The starter is just water and flour that has been allowed to ferment the natural yeast and bacteria in the flour. This process to create your starter can take roughly 7-15 days. Be patient and consistent. If this is something you don't want to hassle with you can find a friendly neighbor willing to share a bit of theirs! But I highly encourage you to try your own. It's like watching a plant grow from seed. It's a wonderful feeling of accomplishment to make a successful starter!

## **Health benefits of sourdough:**

During the long fermentation process in sourdough the beneficial bacteria, lactobacillus, pre-digests complex carbohydrates into more simple sugars and breaks down the protein into amino acids. Lactobacillus also helps to control candida albicans in the digestive system. Sour dough bread is also has a lower number on the glycemic index indicating the bread is digested and absorbed more slowly by the body resulting in a more gradual rise in blood sugar and insulin levels.

## **How to Make Your Own Sourdough Starter:**

Making sourdough starter is super easy because it only takes two simple ingredients; unbleached flour and water. There are many directions for a sour dough start I have included one here.

## Sourdough starter Directions

Ingredients to begin starter

-1 cup (113g) whole wheat flour

-1/2 cup (113) water

Ingredients to feed starter

- all-purpose unbleached flour

- water- lukewarm water if your house is cool

Instructions:

Day 1: Combine the wheat flour with water in a glass or plastic container. Make sure it is large enough to hold your starter as it grows. Stir everything together, cover the container loosely and let the mixture sit in a warm place for 24 hours.

Day 2: You may see no activity at all in the first 24 hours, or may be a little bit of bubbling. Either way discard half of the starter and add to the remainder , 1 cup (113 grams) unbleached all-purpose flour, 1/2 cup (113 grams) water. mix well and let sit 24 hours

Day 3: You will likely see some activity, bubbling: a fresh, fruity aroma and some evidence of expansion. Its now time to begin two feedings daily as evenly spaced as your schedule allows. For each feeding weigh out 113 grams (this will be about 1/2 cup) starter and discard the rest. Stir in about 1 cup(113 grams) flour and 1/2 cup(113 grams) water. Cover and let rest at room temperature for 12 hours.

Day 4-7: Repeat the process from day 3. You will begin to see changes over the next few days, more bubbles, a tangy aroma- pleasingly acidic. You will repeat this process until your start is a vigorous (risen and bubbly).

Next Step: Once the starter is ready, give it one last feeding, Discard all but 1/2 cup (113 grams). Feed as usual, let the starter rest at room temperature for 6-8 hours; it should be bubbles breaking the surface. (From now on you could begin to collect discard for other uses)

Using starter- As you take starter out for a recipe feed the remaining starter for future use.

Be patient! Making an active sourdough start takes time. Temperature, environment, flour differences...etc will affect the time it takes for a mature start.

The float test is helpful when you are in doubt on whether or not your sourdough is ready. When you believe it to be a mature starter (bubbling up to double the amount within 4-6 hours of a feeding) you can check it's maturity by taking a small spoonful of the fed starter and dropping it into a cup of water. If it floats you are good to go! If it does not, be patient. Keep feeding it consistently and you should see it float within a couple more days.

### **How to maintain your sourdough starter:**

Even if you are not baking everyday with your starter it still needs to be fed. We may not be able to see the yeast and bacteria at work but they are working. If you plan to leave your starter on the counter you will need to feed it daily once it is established and mature. But be sure to watch it. IF your house is quite warm, perhaps during the summer, your starter is going to feed more frequently. IF your home is cooler, perhaps during the winter months, your starter may not feed as often.

IF you are not planning on using it too often, maybe a few times a month or so, storing it in the refrigerator is a great option. You can place your fed starter in the refrigerator for about a week without feeding it. Remember to bring it out once a week and feed it. Let it sit on the counter for about 30 minutes to two hours to let it start eating then place it back in your fridge. Don't forget about it in there though!

Another option if you feel you really won't use it too often or perhaps need to take a break for whatever reason is drying your starter. This is great to have as a back up if something happens to your starter. Knowing you have a



starter that will cut down the process of remaking it all over from the very beginning is great peace of mind and a wonderful way to prepare.

This is a great tutorial on how to dry and revive your dried starter!

<https://www.baking-sense.com/2020/06/10/how-to-dry-sourdough-starter/>



Drying is the best way to preserve your sourdough starter for the long term

## How to Dry Sourdough Starter

### Materials

Active sour dough starter

### Tools

Silicone baking mat or parchment paper

Half sheet pan

Small spatula

### Instructions

#### To dry the starter:

1. Line the sheet pan with a silicone baking mat or parchment paper. The silicone mat works best so use it if you have one.
2. Pour the starter onto the sheet pan and spread it out to a thin, even layer.

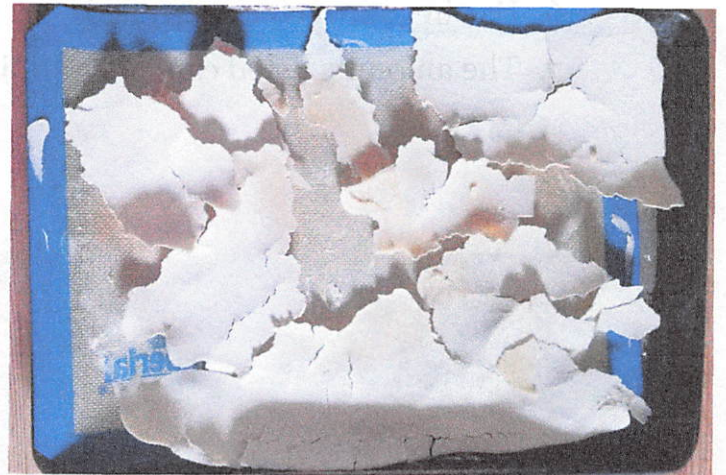
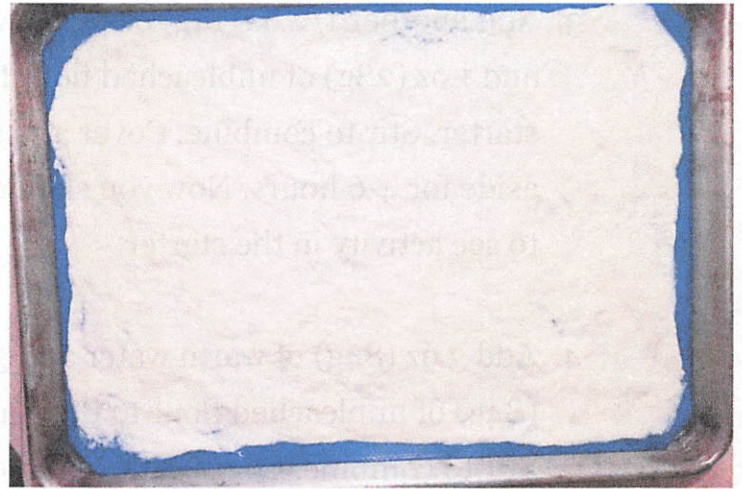
3. Place the pan in a cool, dry place, uncovered. I put mine into the oven with the convection fan on and no heat.

4. After 18-24 hours check the starter. It should peel off the mat. If underneath the starter is still moist you can peel it off, flip over the pieces and leave them to continue drying.

5. The starter is ready when it is completely dry and crisp. The texture should be like a potato chip which snaps when broken into pieces. You should have half the weight that you started with. If you started with 12 oz of starter you will get 6 oz of dried starter.

6. Break the starter into chips and store in an airtight container at room temperature.

7. The dried starter will keep indefinitely



**To revive the dried starter: (yield 9 oz of starter)**

1. Place 1/2 oz (14g) of starter chips in a plastic or glass container. Pour 1 oz (28g) of warm water over the chips and stir to cover the chips with water.
2. Cover the container and set it aside until all the chips have melted into the water. This usually takes about 3-4 hours. The starter will not look active at this point.



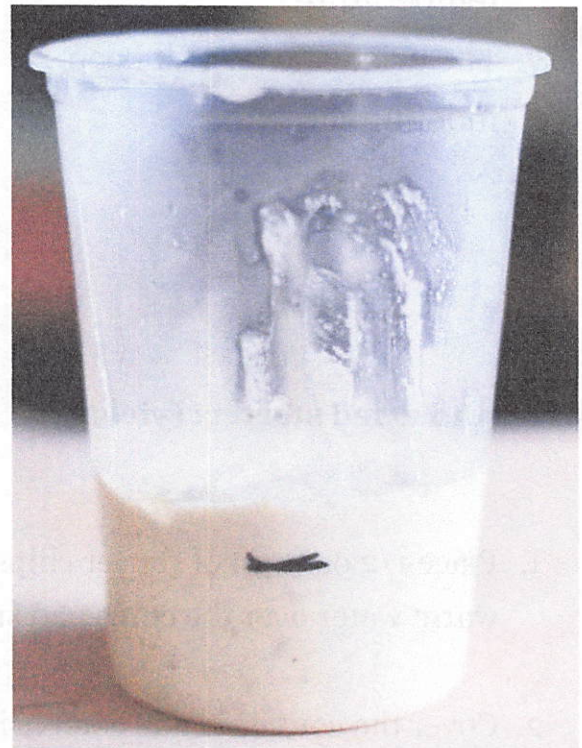
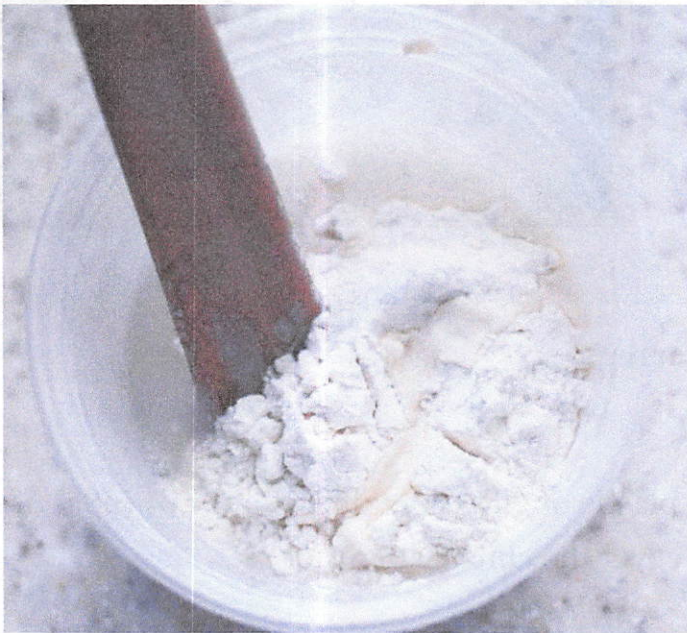
3. Add another 1/2 oz (14g) of warm water and 1 oz (28g) of unbleached flour to the starter. Stir to combine. Cover and set aside for 4-6 hours. Now you should begin to see activity in the starter.

4. Add 3 oz (84g) of warm water and 3 oz (84g) of unbleached flour to the starter. Stir to combine. Cover and set aside for 3-4 hours or until the starter has doubled in size and looks quite active.

5. If after 4-6 hours the starter still seems sluggish, discard all but 3 oz of the starter and do one more feeding.

6. Use in your recipe as needed.

7. The amounts listed can be multiplied out to yield more starter.



## Sourdough starter troubleshooting:

Sometimes we run into issues with our starters. It can be frustrating but remember to be patient and don't panic. The starter is actually hard to kill! And can usually be revived with some tweaking. There are a few cases where you do need to just chuck it and try again but not too many.

## How do I know my sour dough starter is ready?

**Here are the more dependable ways to tell that a sourdough starter is ready:**

- It is doubling in size within 3-4 hours of a feeding
- There are bubbles in it
- The texture is fluffy and foamy
- There is a pleasant tangy, sour aroma
- If you place a teaspoon of recently fed starter in a cup of cool water, it floats to the top

## Why isn't my sourdough starter active and bubbly yet?

It's natural to feel panicky if you're on day 4 or 5 and you're not seeing bubbles in your sourdough starter yet. **My first tip would be to be patient. Wait at least 7-10 days before you decide if your sourdough starter isn't active.** Sometimes it just takes time.

You can also look at the following things to help your sourdough starter:

- **Warmth.** Check if your kitchen is drafty or cool. If it is, try moving your sourdough starter to a warmer location. You don't want to put it in direct sunlight or on the stove where it can scorch, but try to move it closer to a heater or warm source in your house.

- **Flour.** If you're not seeing bubbles after a week, try using a different variety or brand of flour. Unbleached flour is recommended because it has less acid in it.
- **Water.** Try a different variety of water, just in case your current source has some sort of contaminant (like chlorine) that could be hampering the growth of the starter.

## **Help! I'm on day five of my starter and it's not bubbling or growing.**

I've noticed that there's often a little bit of a lull on days four through six sometimes. Keep feeding it and don't give up on it at least until you've hit day 14 without good bubbles or growth. If you're really concerned and not seeing any activity, try switching out the flours and make sure your water is not chlorinated.

## **What if my kitchen is too cold for my sourdough starter?**

Sourdough definitely prefers a warm environment. If your house is chilly, you might need to get a bit creative to figure out how to keep it happy. If you have a wood stove or gas fire place you can put your starter close to the stove (in the vicinity of the stove, not too close so the starter gets too hot).

You could try on top of your refrigerator, which is often a warm place in the kitchen. You can also keep your starter next to your oven in the kitchen, as the radiant heat will help keep your starter happy. You could also leave it in your oven with the oven light on, just remember your start is in the oven so don't turn it on.

Some folks have good luck using a cooler with a warm heating pad or a seedling heating mat to keep their starter warm and happy. With a little creativity, you can find a way to keep your sourdough starter warm.

## **Is it better to measure or weigh the sourdough ingredients?**



Weighing the ingredients is better if you have a kitchen scale but many home cooks do fine with measuring after they are more familiar with dough consistency.

## **My sourdough starter is too watery or too thick. What do I do?**

The start will change in consistency at different phases, it is thicker when it is first fed and then as time passes it will thin out because it needs to be fed again. Ask your self where you are in the day.

## **Why is my sourdough starter separating? Why does it have black liquid on top and/or clear liquid on bottom?**

The most common separation in a sourdough starter is when you get black or gray liquid on top. This is completely normal. **The black liquid on top of your starter is called hooch.**

Hooch is the waste product of the sourdough starter. When your starter has eaten up all of its food and wants more, it will begin to separate and the hooch will appear.

You have a few options: first, you can discard the hooch (ie black liquid on top); OR you can stir it back in. If you want your sourdough to be more sour, simply stir the hooch back into the sourdough starter.

Another separation issue you may experience is when you have clear liquid underneath the flour layer. This is also very common, especially in new sourdough starters. **The clear liquid on the bottom means you need to change your sourdough starter feeding habits.**

Try feeding it more often, or use a different water, or try a different flour. It's not a major reason for concern, but it doesn't hurt to switch up your feeding habits to see if that helps.

## **Why does my sourdough starter have a pink and/or orange color?**

While sourdough starters can vary in color, if your starter becomes pink or orange, it is not a happy starter. **Pink and orange coloration means you are on the verge of losing your starter and that it is likely starving to death.**

If it has just a slight pink tinge, you can possibly bring it back. However, if it's super pink or orange, it's probably best to toss it and start over.

Grey or brownish hues in a starter are generally normal and not a cause for concern.

## **Why does my sourdough starter smell like alcohol or nail polish remover?**

Like a pink or orange starter, an alcohol/nail polish remover aroma can indicate your starter is starving to death. Try feeding it more frequently and keep it on the counter with more feedings until it smells and looks better.

## **Is it normal to see a skin on your starter prior to feeding?**

Sometimes. Usually when my house is a little bit hot, I notice that the top layer of liquid evaporates more quickly and the starter will dry out. I usually just

stir the skin back in. If that keeps happening and it's bothering you, simply cover your sourdough with a lid (instead of a cloth or paper towel) to lock in more moisture.

## **Why is my sourdough starter moldy?**

Mold in a starter is generally caused from contamination either in the flour or in the jar.

Therefore, make sure you're always starting with a super-clean jar and if that doesn't help, try switching out your flour. It's possible that you are buying flour from a store where it is not properly stored or something is wrong with that particular brand of flour.

## **Do I have to feed my sourdough starter twice a day?**

There are a million different ways and opinions to care for a sourdough starter, and some sourdough connoisseurs will recommend two or even three feedings a day. If you notice that

your starter prefers more frequent feedings, that's perfectly fine. You will need to determine what works for your schedule and how often you are using your starter.

\*Note\* If your sourdough starter is a bit sluggish, try feeding it twice a day until it becomes more active.

## **Can I use a different flour for a sourdough starter?**

You can use whole wheat, all-purpose flour, rye, einkorn, and many others for a sourdough starter. If this is your first time making sourdough, I suggest using whole wheat flour and all-purpose flour. This ratio tends to behave very well compared to other techniques because the whole wheat flour at the beginning gives the start a boost.

## **Can I use freshly ground flour in my starter?**

Absolutely! If you have a grain mill, this is a fantastic option. Many people report that their sourdough starters really like freshly ground flour, while other people say that the freshly ground flour has to age about about 5 days before using it for best results. I'd try both and see which your starter prefers.

## **How do you switch from one flour to another for your starter?**

Make sure your sourdough starter is very active and happy (i.e. feed it well and feed it often). Divide it into two starters. Put one of them in a jar in the refrigerator as a backup— just in case...

Leave the other half of the starter on the counter and switch out the flour the next time you feed it. You do not have to slowly transition, just switch out the flours. Wait a few days (with continual daily feedings) before you try to make bread with it. Starters are pretty resilient and switching flours shouldn't cause any problems.

## **If I live in the city, can I use tap water in my starter?**

You may use most any water for your starter. If your water is chlorinated, you can still use it for your sourdough starter, but you may want to evaporate the chlorine first. Simply put the



water in a container on your counter overnight uncovered. The next morning, the chlorine in that water will have evaporated, and you can use it in your starter. Some people have no trouble using chlorinated water.

## **Does it matter what size container I use for holding my sourdough starter?**

Yes, size matters, but it depends on how you are using your starter: how often and how much you use in each recipe. Once your starter is active and happy, it will rise up a BUNCH after you feed it. Choose a container that will allow for growth.

## **Do you keep your sourdough starter enclosed?**

I keep my starter loosely covered in order to keep out bugs, dust, and other random junk from the air. You can use a dishcloth with a rubber band, or anything else that will loosely cover and protect it. I use the canning lid (since my starter is in a mason jar) and I just lightly set it on top of the jar and I don't screw the lid on too tightly.

## **How often do you clean out your jar?**

I try to clean out my sourdough starter jar once a month, but sometimes I forget. The build up on the sides happens pretty quick and since flour and water acts like school paste, it can be hard to get the jar clean. Try to change jars about once a month, but you can do it more often if you like.

## **Do I have to discard part of the sourdough starter when I am making a new start?**

By step three of the sourdough process, you want to start discarding half of the starter. If you keep feeding it without discarding some of it, the starter will eventually become enormous and start taking over your kitchen.

Plus, if you don't discard some of it, you end up having to add more and more flour to make the ratio correct. Since we don't want to waste flour, it's actually *less* wasteful to discard part of the early sourdough starter.

## **What do I do with my mature sourdough starter discard?**

Once your sourdough starter is active and bubbly, you will end up with plenty of sourdough discard. It can be used in a variety of recipes. I store mine in the refrigerator in a separate jar.

## **How long after you start a sourdough starter can you use the discard for recipes?**

Usually it is best to wait until the star is mature. This will give the best flavor.

## **Should I buy a sourdough starter or use part of my friend's sourdough starter?**

Generally, I just go with the simple sourdough starter method and skip the commercial sourdough starter packets, but you may go ahead and purchase a starter online if you like.

If you have a friend with a starter, you can absolutely grab a little bit of culture from them and use that instead of starting from-scratch, its fast and easy!

## **Can I refrigerate a starter? How long can it be in there?**

There are two ways you can keep a sourdough starter:

- 1) you can keep it on the counter and feed it every single day
- 2) OR you can store it in your refrigerator for the majority of the time and just pull it out when you want to bake

If you'll only be using your sourdough once or twice a week (or less), I recommend keeping it in the refrigerator. This will prevent you from having to feed it daily.

Before refrigerating, feed it as you normally would. Let it sit out until it starts to bubble then cover it and refrigerate. It's best to continue to feed it every couple of weeks. However, I will confess, there have been times I've sorely neglected my starter for many weeks and even months and I was still able to revive it.

## **To Wake Up a Cold Sourdough Starter:**

To prepare a dormant sourdough starter for baking, bring it out of the refrigerator at 24-36 hours before you need to use it. Discard half of the starter, and feed it

Repeat this every 12 hours or until the sourdough starter becomes active and bubbles within 4-6 hours of feeding. If you need a larger quantity of starter for baking, or you're planning on doing a big baking day, you can bulk it up by skipping the discard step in each feeding.

## **How long can you keep your starter on the counter while using it and feeding it?**

You can keep it indefinitely as long as you take care of it.

## **Tools/Equipment:**

### **Basic:**

Large glass or plastic bowls (try to stay away from metal, some feel it can react with the sourdough)

Dutch oven or Bread Cloche: these covered pots trap steam and steam is required for good oven spring and crust.

Bench scraper—for dividing and shaping your dough

Cooling rack

Parchment paper--makes it easier to lay the bread in the dutch oven and take out

Glass jar or plastic container for storing starter in--size depends on how much you want to keep on hand, make sure to leave enough room for starter to double in size when fed



Jar for storing sourdough discard to use in other recipes

Measuring cups and spoons

Banneton Baskets --

These are nice for your final proofing and as you use them the flour clings to the basket and helps with ease of turn out.

Lame—used for scoring

Danish dough whisk—This works well for initial mixing, it breaks up the flour and whips in a good amount of air.

Kitchen Scale:a really nice for accuracy in baking. The “tare” feature is essential.

Bakers Couche(canvas): great for raising baguettes

## **Terminology**

### **Levain**

Levain is active sourdough starter and goes by many names: mother, chef, pre-ferment..., it is a mixture of equal parts flour and water with 10% sour dough seed. It is responsible for the flavor, rise and health benefits of sourdough bread.

**Bulk Fermentation:**

Also known as bulk rise, this is where the structure of the bread is developed through a series of folds and turns. The turns are basically stretches of the dough which act like kneading. This is the time between mixing and shaping.

**Delayed Fermentation:**

Also known as cool reparation. We use the refrigerator to control fermentation to improve the health benefits of sourdough. It is also a practical way to help fit bread making into your life.

1. Bucket in the fridge: After bulk fermentation put the whole bucket in the refrigerator for 12-36 hours. When ready remove the dough from the refrigerator, divide, shape and final proof then bake. You may need to warm the dough up slightly before shaping.

2. Banneton in the fridge: After bulk fermentation divide and shape the dough then place in bannetons or on parchment and place in the refrigerator. When you are ready remove from the refrigerator and start the final proof, it will take longer because the dough is cold. After the final proof bake.

3. Final proof then fridge: After the bulk fermentation, divide, shape and final proof. When loaves are raised place loaves in the refrigerator for up to 12-36 hours. When you are ready to bake, preheat the oven, remove loaves from the refrigerator, score, load the oven and complete the bake.

### **Divide:**

This is the time when the dough is divided into the size for your final product. A bench knife and scale are helpful in this step.

### **Shaping:**

This is where we take the divided dough and transform it into the shape for the finished bread. We are building tension in the walls of the dough but we do not want to decay the dough.

### **Final proof:**

This is the final rise after the dough is shaped. Temperature is very important at this step. A warm environment will have a faster final proof and a cool environment will take much longer, you may want to keep a journal of room temperature and rising time for later reference.

### **Scoring:**

This is using a blade to cut slashes in the bread to allow steam to escape so the bread will not tear during baking. Scoring can be basic or elaborate. Cold dough is easier to score.

### **Baking:**

Your oven is the heat source for baking your sourdough bread. Each oven is different so you will need to get your own oven and its hot spots, whether to use convection or regular bake etc...

Steam is essential to a crisp and thin crust in sourdough baking. Home ovens are designed to remove steam quickly and efficiently. You can bake bread in a cloche or dutch oven that will capture steam or you can add water to a hot pan in the bottom of the oven to produce steam. The water in the bottom of the oven works well for baking larger loaves or baguettes that will not fit in a dutch oven.

### **Autolyse:**

The rest period after the water and flour are mixed together before adding additional ingredients- usually the salt.

## **Recipes and Links**

The **Orson Gygi** Company has evolved from a restaurant wholesale kitchen supply store, to a shopping experience for anyone searching for anything kitchen.

<https://www.gygiblog.com/blog/2022/01/06/how-to-start-a-sourdough-starter/>

The King Arthur Sourdough Baking Guide offers all the tips and advice you new (as well as veteran) sourdough bakers need for your guaranteed sourdough success.

<https://www.kingarthurbaking.com/recipes/sourdough-starter-recipe>

<https://www.kingarthurbaking.com/recipes/classic-sourdough-waffles-or-pancakes-recipe>

<https://www.kingarthurbaking.com/recipes/sourdough-pizza-crust-recipe>



<https://www.kingarthurbaking.com/recipes/sourdough-english-muffins-recipe>

<https://www.kingarthurbaking.com/recipes/sourdough-popovers-recipe>

Basic bread recipes we like:

<http://www.simplelifebykels.com/recipe-easy-sourdough-dutch-oven-bread/>

There are tons of youtube videos to watch on all aspects of sourdough bread making-here are a few samples

<https://www.youtube.com/watch?v=o00sobZaRr4>

<https://www.youtube.com/watch?v=EIPVHayc6Bc>

<https://www.youtube.com/watch?v=ATBS-xUvork>

<https://www.youtube.com/watch?v=7W3TwaIAlLo>

A few discard recipes we like:

[Cinnamon Raisin Sourdough Bread | King Arthur Baking](#)

[Chocolate Chip Sourdough Scones - Little Spoon Farm](#)

## **EASY SOURDOUGH DUTCH OVEN BREAD**

### **INGREDIENTS**

**3 – 3 1/4 c flour unbleached all-purpose flour**

**1 1/4 c water**

**3/4 c active sourdough starter (we use 1 cup)**

**1 T honey**

**1 1/2 tsp sea salt**

**1. Mix water, starter, honey, salt, and 2 c flour in your Bosch or stand mixer. You can also easily**

**make this loaf by hand – a danish dough whisk comes in real handy!**

**2. Allow the shaggy dough to rest for 20 mins to allow the flour to soak up as much moisture as possible.**

**3. Add more flour as needed to form a soft, slightly sticky dough that pulls away from the sides of the mixer and forms a ball.**

**4. Knead until dough comes together in a slightly sticky ball (a few minutes by hand).**

**5. Place dough in a lightly greased bowl. Cover with a kitchen towel and set a timer for 15 mins.**

**6. When the timer goes off, return to the dough with wet fingertips and gently pull one side up and into the center, turning the bowl 1/4 turns and repeating all the way around the dough ball. Repeat every 15 mins for the first hour.**

**7. Fold dough this way every hour for the next 4-6 hours. (It's okay if you forget – even that first hour of this folding technique will help!)**

**8. After the long rise, place your dough on a lightly floured surface and fold one more time. Let rest 5-10 mins.**

**9. Flip dough over and gently tuck it around and under as you rotate it, to create a nice firm surface and some tension as you form your boule. Try to get the top of the dough really tight. This will help your dough rise up in the oven more effectively.**

**10. Place dough seam side up in a well floured banneton or greased bowl. Cover lightly with a towel or greased plastic wrap and set aside.**

- 11. Preheat your oven to 500 degrees, with the dutch oven inside for 45-60 mins. If your dutch oven can't withstand that heat, preheat to 450.**
- 12. Allow loaf to rise while oven is heating or until a fingertip pressed into the surface causes the dough to slowly fill back in**
- 13. Invert dough onto a piece of parchment paper. Immediately before adding the dough to the dutch oven, slash the top with a sharp serrated knife or lame. Make quick, confident strokes about 1/4" deep.**
- 14. Put dough in the Dutch Oven with the lid on, reduce the heat to 430 degrees, and bake for 20 mins.**
- 15. Remove the lid and bake another 15-20 minutes or until the top is golden brown and the bottom sounds hollow when tapped.**
- 16. Cool completely before slicing – this is important – the bread continues to build structure as it cools, so if you cut into it hot it may appear under baked or doughy inside.**

**\*\*Tip\*\***

**If your bread is overbaking on the bottom, place a baking sheet on the rack beneath it to help deflect some of the heat. You may also need to turn down the temperature of your oven if it bakes hot, and cook it for longer at a lower heat.**





## STEP 5 - Delay Fermentation > cool retardation to control and slow fermentation

There are 3 methods to help you fit the baking process into your life.

*Refer to the Sourdough Process document and corresponding videos for detailed explanation of each method.*

- METHODS:
- #1 - **BUCKET IN THE FRIDGE** - I'VE RUN OUT OF TIME AND/OR ENERGY
  - #2 - **BANNETON IN THE FRIDGE** - I DON'T HAVE TIME TO FINISH THE FINAL RISE
  - #3 - **FINAL PROOF THEN FRIDGE** - I WANT THE BEST SCORING / BREAD ART

## STEP 6 - Divide and Shape

When shaping Pain au Belle, we do a par shape to establish the shape and a final shape to reinforce it. Building tension in the dough is important, but try not to degas it. Be swift, yet gentle.

*Watch videos for detailed explanation of par and final shaping.*

*Timeline Example: Par Shape - 1:10 pm Final Shape - 1:30 pm*

## STEP 7 - Final Proof > 1 to 4 Hours (Temperature Dependent)

This is the last chance to optimize rise. Under-proofed is better than over-proofed, especially if you have done DF METHOD #3. Let your eyes be the judge; look for 25-30% increase in volume in your loaves. Temperature is SO CRITICAL when proofing. Choose a warm spot - 77-82°F / 25-28°C for best results or proof MUCH LONGER. Use the POKE test to determine readiness.

*Watch videos for detailed explanation of par and final shaping.*

*Timeline Example:*

- Warm Final Proof (77-82°F / 25-28°C) - 1:30 to 3:15 pm = 1 hour & 45 minutes or less*
- Cool Final Proof (73-76°F / 23-24°C) - 1:30 to 4:00 pm = 2 hour & 30 minutes or more*
- Very Cool Final Proof (68-72°F / 20-22°C) - 1:30 to 5:30 pm = 4 hours or more*

## STEP 8 - The Bake > Bake for a total of 30-35 minutes

1. Preheat oven to the 500°F+ for 45 minutes. Choose steam method - Bread Cloche or Sketchy Method.
2. Score and load loaves into oven. Reduce temperature to 450°F and bake for 15-18 minutes.
3. Remove lid (if using cloche), check for colour. Reduce temperature if dark in colour or leave at 450°F if pale in colour.
4. Bake an additional 8 minutes; check for colour again. Reduce temperature if dark in colour or leave at 450°F if light in colour.
5. Bake the remaining 7-10 minutes or until internal temperature is over 205°F.

Pay attention to hot spots in your oven and rotate loaves if necessary. For a lighter crust, drop the temperature to 375°F after the first 15 minutes and bake longer - 25-35 minutes more. Error on over-baked rather than under-baked.

**NOTE** - cooling is part of the baking process; allow loaves to cool completely (at least 2 hours) or the crumb will be gummy.

# Extra-Tangy Sourdough Bread

PREP 15 mins

BAKE 30 mins

TOTAL 23 hrs 45 mins YIELD 2 loaves

## Ingredients

- 1 cup (227g) ripe (fed) sourdough starter
- 1 1/2 cups (340g) lukewarm water
- 5 cups (602g) King Arthur Unbleached All-Purpose Flour, divided
- 2 1/2 teaspoons salt

## Instructions

- ① Combine the starter, water, and 3 cups (12 3/4 ounces, 362g) of the flour. Beat vigorously for 1 minute.
- ② Cover, and let rest at room temperature for 4 hours. Refrigerate overnight, for about 12 hours.
- ③ Add the remaining 2 cups (8 1/2 ounces, 241g) flour, and the salt. Knead to form a smooth dough.
- ④ Allow the dough to rise in a covered bowl until it's light and airy, with visible gas bubbles. Depending on the vigor of your starter, this may take up to 5 hours (or even longer), depending on how active your starter is. For best results, gently deflate the dough once an hour by turning it out onto a lightly floured work surface, stretching and folding the edges into the center, and turning it over before returning it to the bowl. Adding these folds will give you a better sense of how the dough is progressing, as well as strengthen it.
- ⑤ Gently divide the dough in half.
- ⑥ Gently shape the dough into two rounds or oval loaves, and place them on a lightly greased or parchment-lined baking sheet. Cover with lightly greased plastic wrap and let rise until very puffy, about 2 to 4 hours (or longer; give them sufficient time to become noticeably puffy). Don't worry if the loaves spread more than they rise; they'll pick up once they hit the oven's heat. Towards the end of the rising time, preheat the oven to 425°F.
- ⑦ Spray the loaves with lukewarm water.
- ⑧ Slash the loaves. If you've made round loaves, try one slash across the center, and a curved slash on each side of it; or slash in the pattern of your choice. For oval loaves, two diagonal slashes are fine. Make the slashes fairly deep; a serrated bread knife, wielded firmly, works well here.
- ⑨ Bake the bread for 25 to 30 minutes, until it's a very deep golden brown. Remove it from the oven, and cool on a rack.
- ⑩ Store bread, loosely wrapped in plastic, for several days at room temperature; freeze for longer storage.

We're here to help. King Arthur Flour Baker's Hotline: (855) 371 2253





# Sourdough English Muffins

Who doesn't love English muffins? Homemade sourdough muffins seem even more scrumptious, and some of the tasters here had to admit that these crusty, chewy, tangy gems were some of the best they'd ever eaten.



PREP  
25 mins

BAKE  
20 to 34 mins

TOTAL  
2 hrs 45 mins

YIELD  
2 dozen large muffins

## Ingredients

- 2 tablespoons (25g) granulated sugar
- 2 cups (454g) warm water (110°F-115°F)
- 1 tablespoon active dry yeast or instant yeast
- 1 cup (227g) sourdough starter, ripe (fed) or discard; ripe will give you a more vigorous rise
- 7 cups (840g) King Arthur Unbleached All-Purpose Flour
- 1/2 cup (56g) Baker's Special Dry Milk or nonfat dry milk
- 4 tablespoons (57g) butter, at room temperature
- 1 tablespoon (18g) salt
- 1/4 teaspoon citric acid (sour salt), optional; for enhanced sour flavor
- King Arthur Semolina Flour or yellow cornmeal, for coating

## Instructions

- ① Weigh your flour; or measure it by gently spooning it into a cup, then sweeping off any excess. Combine all of the dough ingredients, except the cornmeal/semolina, in a large bowl.
- ② Mix and knead — by hand, electric mixer, or bread machine — to form a smooth dough. The dough should be soft and elastic, but not particularly sticky; add additional flour if necessary.
- ③ Place the dough in a lightly greased bowl, cover, and set it aside to rise for about 1 1/2 hours, or until it's noticeably puffy. For most pronounced sour flavor, cover the bowl, and immediately place it in the refrigerator (without rising first). Let the dough chill for 24 hours; this will develop its flavor.
- ④ Gently deflate the dough, turn it out onto a lightly floured work surface, cover it, and let it sit for a few minutes, to relax the gluten. Divide the dough in half. Working with one piece at a time, roll 1/2" thick, and cut in 3" rounds. Re-roll and cut any remaining scraps. Repeat with the remaining half of dough.
- ⑤ Alternatively, divide the dough into 24 pieces (total). Shape each piece into a round ball, then flatten each ball into a 3" round. For a somewhat more even rise as the muffins cook, flatten each ball slightly larger than 3", and trim edges with a 3" cutter (or trim all around the edge with a pair of scissors). Muffins with cut (rather than flattened) sides will rise more evenly.
- ⑥ Place the rounds, evenly spaced, onto cornmeal- or semolina-sprinkled baking sheets (12 per sheet). Sprinkle them with additional cornmeal or semolina, cover with plastic wrap, and let them rise until light and puffy, about 45 to 60 minutes. If the dough has been refrigerated overnight, the rise time will be about 2 hours.
- ⑦ Carefully transfer the rounds (as many as a time that will fit without crowding) right-side up to a large electric griddle preheated to 350°F, or to an ungreased frying pan that has been preheated over medium-low heat.
- ⑧ Cook the muffins for about 10 to 12 minutes on each side, or until an instant-read thermometer inserted in the center of a muffin registers 190°F. The edges may feel a bit soft; that's OK.
- ⑨ Remove the muffins from the griddle, and cool on a rack. Store tightly wrapped at room temperature for 4 or 5 days; freeze for longer storage.



### REFRESH STARTER | 4-10 hours

feed your starter as usual. it is ready to use once doubled/tripled in volume and this timeline will be unique to your starter.

### BUILD LEVAIN | 4-10 hours

an "off-shoot" of your starter, measured and used just for your recipe. if 150 grams is needed, measure 30 grams of your mother starter, mix with 60 grams water and 60 grams fresh flour.

### MIX DOUGH

your ingredients come together to form a shaggy, shapeless dough.

### STRETCH & FOLDS | 1-2 hours

done 2-4 times in the first two hours of bulk rise/bulk ferment.

### BULK RISE | 3-8 hours

the first and longest rise time for your dough. can be overproofed or underproofed and should be watched. quicker during summer/warmer environments.

### PRESHAPE | 30 mins

gently forming your dough into a round shape, followed by a quick 20-30 minute bench rest.

### SHAPE & COLD FERMENT | 2-72 hours

final folding/shaping of your dough to build surface tension before placing into proofing basket/bowl.

### BAKE | 45-60 mins

## Basic flow chart for making sourdough bread