

The 10 Secrets of Sourdough Success

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Helping Ordinary People Bake Extraordinary Bread

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This document accompanies the YouTube video: [“The 10 Secrets of Sourdough Success”](#)

Introduction

I have been making sourdough videos and chronicling my sourdough journey over the past few years. Many people have asked me to summarize in one place the key learnings from my experimental videos.

I wish I could say there is one secret ingredient, a special tool, or a secret step in the process, but the secret to sourdough success is not a recipe, an ingredient, or a step. It is about **learning a new set of skills**.

My goal is to help beginning to intermediate sourdough bakers develop the skills required to make great sourdough bread.

1. Practice One Recipe

Many beginners struggle with sourdough baking. And many beginners believe that choosing a different recipe will produce different results, but all sourdough recipes are actually quite similar. What differs about sourdough baking is the **process**. Even experienced cooks and bakers struggle with sourdough baking because it involves **fermentation** (see Appendix A), which is a new process and skillset for most everyone. New sourdough bakers understandably have a high failure rate because every batch of dough a unique, living, biological organism.

Rather than trying a variety of sourdough recipes until you find one that “works,” select **one recipe** and following it repeatedly until you master a basic sourdough loaf. Choose a proven recipe that has a detailed description of the **process**.

I recommend the book, *Tartine Bread*, by Chad Robertson. His description of the process is 65 pages long. Chad Robertson popularized the artisan sourdough home baking revival in the early 1990’s and his recipe and process are the basis for most other popular sourdough recipes. His basic Country Loaf recipe includes virtually all the steps required to master sourdough baking.

There are many seemingly uncontrollable variables (e.g., starter strength, temperature) in sourdough baking so it is important to routinize your process as much as possible to eliminate complexity. By repeating a proven set of steps, you eliminate unnecessary variability in your process and increase your probability of success.

As you begin your sourdough journey, remind yourself that it is all about developing a new, unique set of skills. Like learning any other new skill, it takes practice and repetition.

Secret of Success #1: Pick one recipe and stick with it until you master a basic sourdough loaf.

Links to Recommended Videos and Tools:

[**Video for Beginners: Tartine Bread: Beginner Mistakes and Tips**](#)

[**Video for Intermediate Bakers: Tartine Bread: The Art and Alchemy**](#)

[**Video for All Bakers: The Sourdough Apprentice: “Sourdough Brothers”**](#)

[**Book: Tartine Bread, by Chad Robertson**](#)

[**Recipe: Tartine Bread Basic Country Loaf**](#)

[**Tools: Baker’s Worksheet – Basic**](#)

[**Tools: Baker’s Worksheet – Detailed**](#)

2. Try Different Bread Flours

Most sourdough recipes call for at least 80% “bread flour,” which is also known as “strong flour” in other parts of the world. Bread flour typically has a high protein content (12%+) and it is the essential ingredient in sourdough baking.

Many beginning sourdough bakers get themselves into trouble by substituting other flours for bread flour. Do not substitute other flours for bread flour, especially whole grain flours or low gluten flours such as einkorn, spelt, rye, and semolina. Master your basic recipe with bread flour first.

Within the realm of “bread flour,” however, there is a range of options which are made from slightly different types of wheat, and these flours may have different protein content and different milling styles. Each type or brand of bread flour will produce a slightly different loaf in flavor, texture and other characteristics. Higher protein bread flours (e.g., 14%+) will typically produce a chewier texture.

Once you master your basic loaf using a single type of bread flour, **try experimenting** with different types or brands of bread flour. Popular brands in the U.S. include:

- King Arthur Bread Flour (organic or regular),
- Bob’s Red Mill Artisan Bread Flour,
- Central Milling Company Artisan Baker’s Craft Plus Bread Flour, and
- Central Milling Company High Mountain High Gluten Flour.

All of these are “bread flours” and they each will produce slightly different, but noticeable, results in your loaf. By working with different bread flours, look for differences in how the dough feels and behaves. Is it stiffer? Is it more extensible? Is it more fragrant and flavorful? Is it easier to shape? Does it ferment faster? Does it produce a more open crumb?

Try making multiple loaves side-by-side using different types of bread flour. It will accentuate the differences and improve your ability to see, feel and smell the differences when working with different flours.

If you experiment with 4 or 5 different types of bread flour, you will be able to identify subtle differences, and you will likely find one that you prefer.

Secret of Success #2: Experiment with different Bread flours (but do not substitute lower gluten or non-bread flours for bread flour).

Links to Recommended Videos:

[**Experimenting with Bread Flours – A Six-Loaf Experiment**](#)

3. Strengthen Your Starter

Every sourdough recipe calls for a “strong starter,” but how can you know if your starter is strong or weak? Conventional wisdom says that a starter that doubles in volume in 4-6 hours after a 1:1:1 feeding is a “strong” starter.

This is a reasonably good test of starter strength, but unless you are feeding your starter multiple times per day, for example in a bakery setting, home bakers’ sourdough starters are rarely at “peak strength.”

For this reason, if you are a home baker, you should **assume that your starter is weak** – or at least weaker than it could be.

You will find that baking with a **very strong starter** completely changes the baking experience. Your dough will rise faster and more predictably, and your loaf will be more airy and light. The differences can be extraordinary. Fermentation times can be cut in half when using a strong starter versus a weak starter. And the quality of the bread is better.

In addition to the rising power of your starter, the second aspect of starter strength is the **acidity level**. If your starter is very acidic, it has the effect of slowing down yeast productivity **and** accelerating overproofing of your loaves.

For best baking results, a “strong” starter has two key components: 1) a high yeast population, and 2) a low lactic acid bacteria population. You can de-acidify your starter with more frequent feedings and/or higher feeding ratios. You want high rising strength and low acidity for best results.

Learn to strengthen and deacidify your starter. Strengthening your starter prior to using it in baking is always recommended (i.e., “peak-to-peak feedings, shorter interval feedings and higher feeding ratios). From time to time, you should also consider a multi-day strengthening regimen for your starter.

See the recommended videos below for how to do this.

Secret of Success #3: Learn how to strengthen and de-acidify your starter.

Links to Recommended Videos:

[How to Strengthen a Weak Starter](#)

[How to Double Your Starter Strength in 6 Days \(or less\)](#)

[When is Bulk Fermentation Done: Episode 6: Starter Strength and Leaven Percentage](#)

4. Master Bulk Fermentation

After all of the experiments I have done over the past few years, many people ask me, “What is the most important thing you’ve learned?” My answer is clear and unequivocal:

“Bulk fermentation makes the bread.”

Eighty percent (or more) of the controllable final outcome of a sourdough loaf is the result of bulk fermentation. Two bakers, side by side, could use the same ingredients and follow the same steps, but the ability to cut off bulk fermentation at the right moment has a greater impact on the final loaf than **all other variables combined**.

This critically important step in the process is not well documented or well understood. Few sourdough books cover this topic in more than a cursory overview. And many experienced bakers say that you can only learn the process through experience – by baking hundreds of loaves – and that there is no way to teach a new baker how to “read the dough.”

In 2020, I created a tool – **The Incredible Bulk-O-Matic System**. It is a 9-criteria test that looks at the constellation of nine observable variables to help determine when bulk fermentation is done. More importantly, it describes the typical continuum of each variable and describes what happens if each of the nine criteria are outside of the target range. It is a one-of-a-kind tool that dramatically accelerates learning of this key skill.

In addition to the tool, I have created a series of videos using the tool. Each video demonstrates the impact of changing one variable and assesses the resulting impact on the nine bulk fermentation criteria across multiple loaves.

The ground-breaking Bulk-O-Matic tool is available for download and the accompanying video series is a masterclass in the art of bulk fermentation.

I have taught beginning bakers to use the tool and they are baking beautifully proofed loaves right from the start of their sourdough journey. Mastering bulk fermentation is a learnable skill!

Secret of Success #4: Develop the skills to know when bulk fermentation is done.

Links to Recommended Videos and Tools:

[Video: When is Bulk Fermentation Done?: Episode 3: The Bulk-O-Matic System](#)

[Tool: The Incredible Bulk-O-Matic Guide](#)

[Series: When is Bulk Fermentation Done?: Episodes 1-8](#)

[Video: Understanding Bulk Fermentation](#)

5. Monitor Temperatures

Mastering sourdough baking is all about mastering the **fermentation** process. And mastering the fermentation process is all about mastering the interplay of **temperature and time**.

Fermentation is a temperature sensitive process. Small changes in temperature can have significant impact on the timing and outcome of the process. A seemingly small change of 8F/4C in your dough temperature can **double or halve** your bulk fermentation times.

By failing to measure temperatures throughout the process you are not really in control of your baking process and it is very difficult to predict outcomes or produce repeatable results.

Understanding the impact of temperature throughout the process – from initial mixing of the dough to cooling the final loaf – is an essential skill for the sourdough baker.

Consider purchasing these essential tools:

- a **digital probe thermometer** for measuring starter temperature, dough temperature and baked loaf temperatures,
- a few **ambient temperature thermometers** for measuring proofing chamber, countertop and refrigerator temperatures, and
- an inexpensive **oven thermometer** to periodically check the accuracy of your oven temperature settings.

A proofing chamber is also a helpful tool for keeping your dough at a constant temperature during bulk fermentation. You can make your own proofing chamber, for example, by using your oven with the light on, a warming mat, or you can purchase a standalone electric proofing box.

The “Desired Dough Temperature” calculation is also an important tool for determining the water temperature required to achieve an initial target mixed dough temperature.

Keep records of your temperatures and times to help develop a more predictable process.

Secret of Success #5: Temperature is an ingredient. Monitor your temperatures throughout the process.

Links to Recommended Videos:

[Video: When is Bulk Fermentation Done: Episode 7: “Some Like it Hot”](#)

[Video: When is Bulk Fermentation Done: Episode 8: “Low and Slow”](#)

[Series: Bulk Fermentation: Mastering Temperature and Time](#)

[Tools: Recommended Thermometers](#)

6. “Architect” Your Loaf

Building a tall, airy loaf of bread out of the simple ingredients of water, flour, salt and starter seems to be an impossible task for someone unfamiliar with bread baking.

Understanding the role of gluten structure is vitally important to building or “architecting” a sourdough loaf. To be a successful baker, it helps to think like an architect by asking, “How can I use gluten and dough handling steps to build the structure of my loaf?” The final baked loaf is the **accumulation** of all of the steps in the “Gluten Structure Chain” (see Appendix B):

- The raw materials (gluten) come from the **protein** content of the flour
- The gluten is **created** through chemistry by combining flour and water
- The gluten is **strengthened** by stretching the dough
- Gluten **layers** are assembled by folding the dough
- The loaf **structure** is built by pre-shaping and final shaping the dough

The steps are cumulative and interrelated. Some recipes may call for autolyse and others do not. Some recipes use stretch and folds, others use coil folds. Some recipes skip pre-shaping entirely. The structure chain can take on many forms, all producing similar results in the end.

Just as an architect understands the tradeoffs in materials such as wood versus steel, a sourdough baker must understand **tradeoffs** in the Gluten Structure Chain. For example, low protein flour requires more strengthening through handling. Dough with minimal layers created in bulk fermentation required stronger shaping techniques.

But there is an additional challenge for the sourdough baker/architect. While you are building the loaf, you must always be aware that the lactic acid bacteria and protease enzyme are essentially destroying your work. As more time passes and the acidity of the loaf increases, these microbes and enzymes break down the gluten structure which leads to overproofing problems as the gluten structure inevitably begins to deteriorate.

I have created a series of videos which isolate the impact of the steps in the Gluten Structure Chain and illustrate the impact of each step on the final loaf.

The findings in the video, “The Impact of Bulk Fermentation on Open Crumb” are particularly interesting and highly recommended.

Secret of Success #6: Learn to use the “Gluten Structure Chain” to architect your loaf.

Links to Recommended Videos and Tools:

[Video: The Impact of Bulk Fermentation on Open Crumb](#)

[Video: The Impact of Pre-Shaping on Open Crumb](#)

[Video: The Impact of Final Shaping on Open Crumb](#)

[Video: Tartine Bread: The Art and Alchemy](#)

8. Shaping is Overrated

Much of the structure of a sourdough loaf is set up in the steps prior to pre-shaping and final shaping. Beginning bakers find this counterintuitive and spend a lot of time worrying about their shaping skills while missing the larger impact of all the steps prior to shaping.

I began experimenting with **no shaping** as I attempted to better understand the impact of bulk fermentation on the sourdough crumb. I did not expect to see beautiful, tall, fully-formed loaves with **no pre-shaping and no final shaping**.

I do not recommend permanently skipping the shaping steps. But I do recommend experimenting with baking a few loaves without doing any shaping. This challenge focuses all your attention on the steps in the process, prior to shaping, and how those steps impact the outcome of the loaf. You will find yourself asking questions such as:

- Does my flour have sufficient protein content to create the required gluten structure?
- Can I develop stronger gluten through different hand mixing techniques (Rubaud method, slap and fold)?
- Can I improve the gluten structure with different bulk fermentation handling methods such as coil folding or lamination?
- Can I improve the dough structure by bulk fermenting at lower temperatures?
- How can I best prevent proteolysis from deteriorating the gluten?
- Is my shaping basket shape and size appropriate for the size of my loaf?

By eliminating the “crutch” of pre and final shaping, the baker must focus all their skills and attention on the steps prior to shaping to ensure that everything is being done to build a tall, airy loaf.

Developing this full range of skills, and an eye for their impact, is essential for sourdough bakers.

Secret of Success #7: Experiment with no shaping to build other essential skills.

Links to Recommended Videos and Tools:

[Video: The Impact of Bulk Fermentation on Open Crumb](#)

[Video: When is Bulk Fermentation Done: Episode 3: The Bulk-O-Matic System](#)

[Video: When is Bulk Fermentation Done: Episode 4: Overproofing Problems](#)

[Video: When is Bulk Fermentation Done: Episode 6: Starter Strength and Leaven %](#)

[Video: When is Bulk Fermentation Done: Episode 8: Low and Slow](#)

8. Dutch Oven Size and Temperature Matters

Ovenspring is a complex interplay of steam, temperature and time. A sourdough loaf needs a high baking temperature to produce tall ovenspring, but if the temperature is too high, the crust can set up too quickly and impede the full potential spring of the loaf.

Most sourdough recipes recommend baking loaves in a Dutch oven to trap steam and create an “oven within the oven.” Many bakers use existing Dutch ovens, or they purchase one new Dutch oven for sourdough baking.

When beginning bakers purchase a new Dutch oven for sourdough baking, they often err on the side of buying a smaller vessel, believing that the sides of the vessel need to hold the shape of the loaf. This is a mistake. A properly shaped loaf should hold its own shape in the center of a Dutch oven without touching the sides.

More importantly, I’ve found in recent experiments that baking loaves in smaller Dutch ovens can **impede ovenspring** because the radiant heat from the walls of the Dutch oven bake the crust too quickly. I consistently see better ovenspring in loaves baked in my larger Dutch ovens.

But it is not as simple (or practical) to say, “just use a larger Dutch oven.” The real science of ovenspring is about controlling the **surface temperature** of the loaf during the first 20 minutes of baking. This can be done by:

- 1) Preheating at a lower temperature (or not at all)
- 2) Reducing the baking temperature, or
- 3) Using a larger dutch oven (or making a smaller loaf!)

Rather than running out to buy a new Dutch oven, I recommend experimenting with different preheating and baking temperatures to assess the impact on the ovenspring of your loaves. A change of 25-50F/14-28C in preheating or baking temperature can materially impact your ovenspring.

Secret of Success #8: Experiment with Dutch oven sizes and/or baking temperatures to optimize ovenspring.

Links to Recommended Videos:

Coming Soon: Impact of Dutch Oven Size and Baking Temperature on Ovenspring

9. Read the Crumb

Every beginning sourdough baker has a similar experience of taking a beautiful looking loaf out of the oven, but upon cutting it open, finding a crumb full of giant caverns and not looking like the photos in the books, videos or social media. Is it underproofed? Is it overproofed? How can one tell the difference?

Every sourdough loaf tells a story. The “story” of how the loaf was made is told by the shape, the crust – and most importantly – the crumb. The crumb of a sourdough loaf reveals details about:

- the type of flour and hydration level of the recipe,
- the maturity, strength, and acidity of the starter,
- the handling methods in bulk fermentation,
- the overall proofing level of the loaf,
- the type of shaping, and
- the baking method and temperature.

The proofing level of the loaf (i.e., bulk fermentation and final proofing) is laid bare in the crumb of the loaf. It is like putting an x-ray machine on the cumulative results of the fermentation process. Because bulk fermentation is the key skill to develop as a sourdough baker, **reading the impact of fermentation in the crumb** is the second most important skill. By accurately reading the crumb, you can assess the impact of small changes to the process and continuously improve your loaves.

Over the past few years, I have intentionally (and unintentionally) underproofed and overproofed many loaves as part of various experimental videos. This collection of loaves creates a fascinating “library” showing the continuum of significantly underproofed, nicely proofed and overproofed loaves.

Check out the recommended video and download the guide to develop your skills in how to read a sourdough loaf. It is a learnable skill. Also keep records of all your bakes and take photos of your loaves.

Secret of Success #9: Learn how to read your sourdough crumb. And keep detailed notes.

Links to Recommended Videos and Tools:

[**Video: How to Read a Sourdough Crumb**](#)

[**Tool: How to Read a Sourdough Crumb Guide**](#)

[**Tool: Baker’s Worksheet – Detailed**](#)

[**Tool: Baker’s Worksheet – Simple**](#)

[**Series: When is Bulk Fermentation Done?**](#)

10. The “Perfect” Loaf?

Sourdough baking is a journey, and “the perfect loaf” remains elusive.

Sourdough baking can be challenging, frustrating and confusing but it can also be incredibly rewarding. **There is nothing like a homemade loaf of warm sourdough bread!** You are creating something unique by applying a set of skills that relatively few home bakers have mastered.

Making daily bread with simple ingredients and using the ancient methods of breadmaking connects us to our human history. Bread-making was the one of the foundations of modern civilization. The science and art of sourdough baking has been passed down for thousands of years.

It can be frustrating, but every loaf is a lesson. Every mistake is edible. And the flour is pretty inexpensive. I can think of many more expensive hobbies where you cannot eat your mistakes.

Embrace the journey. Keep experimenting. Continue learning. And enjoy sharing and eating the bread!

Secret of Success #10: The perfect loaf remains elusive. Keep experimenting and eat the mistakes!

Links to Recommended Videos and Tools:

[Video: Tartine Bread: The Art and Alchemy](#)

[Series: In Search of Open Crumb](#)

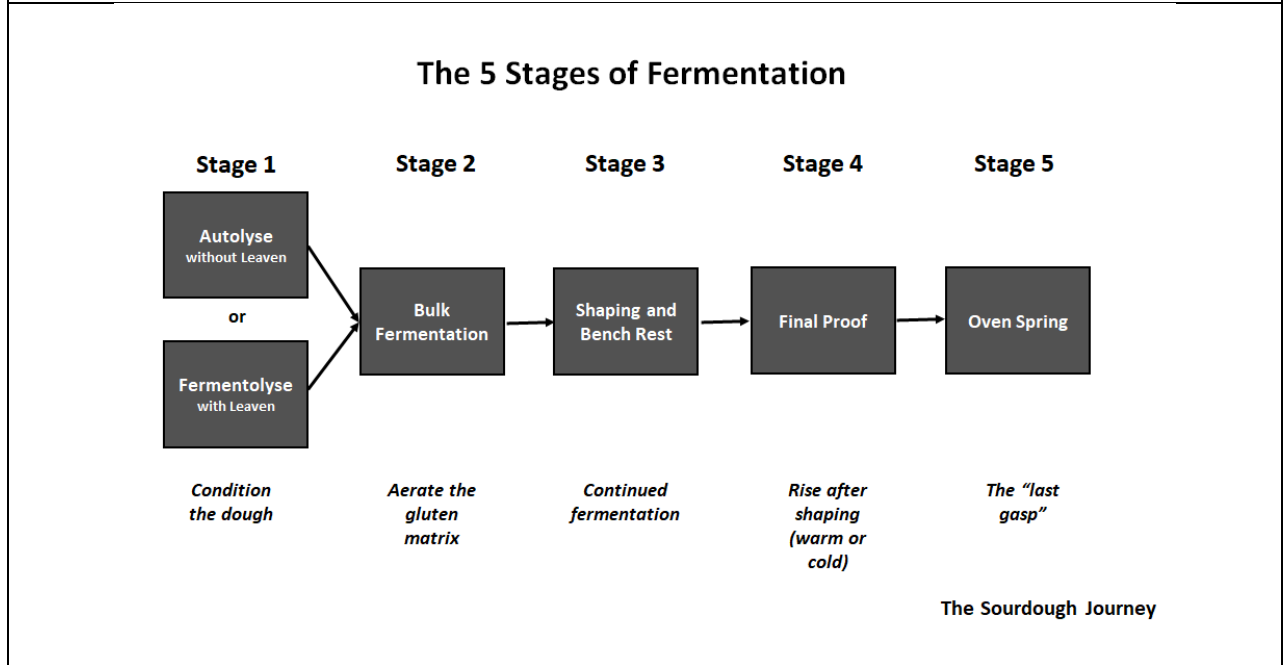
Coming Soon: More Experimental Videos and Tools

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Appendix A: The 5 Stages of Fermentation



Appendix B: The Gluten Structure Chain

