

# Food Preservation

## Making Gluten-Free Sourdough Bread



Making gluten-free sourdough bread is a rewarding challenge. Without the structure that gluten provides, it takes creativity, patience, and care to craft a flavorful, crusty, and nourishing loaf. Baking for oneself or loved ones yields satisfying results and is worth the effort.



### Gluten-Free Sourdough Starters

A healthy starter is what makes good bread. An established starter will double after each feeding. It is ready for use once it reaches peak activity in two weeks or more. All that is needed is gluten-free flour, water, and time. Two weeks of daily maintenance are required. See the Resources section for links to gluten-free starters.

Feed your starter with about 100% hydration, which means feeding 1 part starter to 1 part water to 1 part flour: for example, 50 g of starter, 50 g of water and 50 g of flour. Consistency is more important than a precise ratio for gluten-free starters. Feed the starter with whole grain gluten-free flour — see options below — or use a gluten-free flour blend. Also, it's fine to switch the type of flour used if needed. Whole grain flour will provide more of a food source for fermenting microbes than a blend. A little trial and error may be needed to find what works best.

- If storing on the counter at room temperature, feed the starter daily.
- When storing a starter in the refrigerator, feeding it once or twice a week may be sufficient.
- Rather than throwing away the discard after feedings, try using it to make muffins, cookies, pizza crust, or crackers.

## Gluten-Free Flours, Starch, and Binder

Gluten-free flours vary far more widely in absorbency than traditional all-purpose flours and tend to be more absorbent. Experiment with different types of flour and starch to see what combinations are preferred. Incorporating flour and starch from each category will result in bread that is like wheat-based sourdough. Make substitutions by weight, not volume, since each flour has its own density.

### High-Protein Flour Options:

These result in a denser, heavier product.

- Amaranth flour
- Buckwheat flour
- Millet flour
- Teff flour
- Quinoa flour

### Foundational Flour Options:

These are considered neutral flours and resemble all-purpose wheat flour.

- Brown or white rice flour
- Oat flour
- Sorghum flour

### Starch Options:

- Potato starch
- Tapioca starch
- Arrowroot powder

**Psyllium husk acts as the binder** and mimics the role of gluten in typical sourdough bread. Psyllium is a soluble fiber made from plantain seeds. Look for whole psyllium husk, not powder. It will help make the dough workable and the bread chewy.



## Sourdough Baking Terms

- **Banneton:** A basket used to proof bread. Not needed, but nice to have.
- **Bench scraper:** A rigid and rectangular tool used for baking tasks, including dividing, portioning, and scooping dough.
- **Bread lame:** A razor blade used for scoring bread. The tip of a sharp knife will also work.
- **Scoring:** Cuts made in the bread before baking, allowing steam to escape and the bread to rise more evenly.
- **Oven spring:** This is the rise that happens right after bread hits the oven, and it's often helped by preheating the Dutch oven to a high temperature before adding the loaf.
- **Preferment:** It's a mixture of starter, water, and flour that will be the base of the bread. How long it ferments will impact how sour the loaf is.
- **Proofing:** This is the bread rise after shaping the loaf.

### Flavor Variations for Sourdough Bread

- **Cherry Cinnamon Sourdough:** Add 2 teaspoons cinnamon and 70 g dried cherries, soaked in warm water for 10-15 minutes before using.
- **Garlic Italian Herb Sourdough:** Add 2-3 cloves minced garlic and 1 tablespoon of Italian seasoning.





## Making the Bread

### Ingredients:

- 150 g active gluten-free sourdough starter, it should be at peak rise
- 100 g filtered water
- 80 g whole grain gluten-free flour or a combination of flours, like 40 g millet flour + 40 g sorghum flour

### Liquids

- 20 g whole psyllium husk, not powder
- 20 g maple syrup or honey
- 300 g filtered water
- 15 g olive oil, optional, helps soften the crust slightly

### Flour Mix

- 80 g potato starch
- 60 g tapioca flour or arrowroot flour
- 80 g foundational flour like brown rice, oat, or sorghum flour
- 80 g high protein flour like millet, buckwheat, quinoa, etc.
- 12 g sea salt



### Instructions:

#### To make the preferment:

1. Mix 150 g active starter, water, and flour in a bowl. Mix until smooth, cover, and let rest at room temperature for 12-18 hours. The longer it ferments, the more sour your loaf will be.

#### To make the dough:

2. Win a separate bowl and whisk the psyllium husk, sweetener, and water together. Whisk until combined and let gel while preparing the flour mixture.

1. Combine all the flour, starch, and salt in a large bowl. This is when herbs or dry seasonings can be added to flavor the dough.
2. Whisk the psyllium gel mixture into the preferment, along with the olive oil and any other wet ingredients, like garlic, soaked nuts, seeds, or dried fruit.



1. Add the wet ingredients to the flour mixture. Use a spoon and hands to bring the dough together or use a Danish whisk or spatula to mix all the ingredients until a smooth dough forms. When using hands, it's advisable to knead the dough for a few minutes to ensure all the flour is hydrated and the dough becomes smooth.
2. Turn the dough onto a clean work surface once it is soft and smooth. Lightly flour it if the dough seems sticky. Knead into a smooth ball and use hands or a bench scraper to shape the dough into whatever form, oval or round, to fit the banneton or bread pan.







1. Dust the banneton or tea towel-lined bowl generously with flour. Place the dough directly into the banneton to achieve the horizontal lines in the pictured loaves or use the liner for a smooth look. **See the notes section for instructions on making the bread in a loaf pan.**
2. Use a bench scraper or hands to transfer the dough into the banneton or a bowl with a clean tea towel. Put the smooth side facing down so the “seams” of the loaf face up. Since we’ll flip the loaf before baking, the seams will be on the bottom after baking.
3. Cover and let the dough proof for about 4-8 hours at room temperature or overnight in the refrigerator. The dough will increase in size, but not quite double. Look for a soft, puffy texture. Weather conditions, the starter, ingredients, etc., can impact timing.

When ready for baking:

4. About 30 minutes before the dough is fully proofed, turn the oven to 425 F. Make sure the Dutch oven is preheating inside the oven if using one. After overnight proofing in the refrigerator, take the bread out to finish rising at room temperature for one to two hours while the oven preheats. The loaf should feel puffy before going into the oven.





1. When the oven is preheated and the dough is well-proofed, carefully flip the dough onto a sheet of parchment paper or silicone sling. Score the bread as desired, ensuring the cut is deep enough — about 1/4 inch — to prevent cracking in areas where the dough wasn't cut through.
2. Remove the hot Dutch oven carefully from the oven. Carefully lower the loaf into the Dutch oven, being careful not to drop it in, which will cause gumminess and reduce the loaf's rise. Replace the lid and put the bread into the oven for 45 minutes.
3. After 45 minutes of baking, remove the lid and let it finish baking for 20-25 minutes. The exact timing will depend on the oven and how golden brown your bread is desired. The internal temperature should reach 205-210 F to ensure it is fully cooked.
4. Once the bread is golden brown, remove it from the oven. Very carefully remove the bread from the Dutch oven and let it cool completely at room temperature before slicing into it. This is the hardest part, but it is worth the wait.



### Notes:

To bake sourdough in a loaf pan, follow the same instructions until the dough is placed in the banneton. Instead, shape the dough into a longer oval shape and place the dough seam side down in the metal loaf pan you'll be baking in. An 8.5" x 4.5" pan works well.

Allow the dough to rise in the loaf pan. When ready to bake, bake for an hour. Check on the loaf; if it's firm enough, remove it from the pan and bake directly on the oven racks for another 20 minutes until golden all around and reaches an internal temperature of 205-210 F.

Recipe adapted from Bakerita by Rachel Conners. [How to Make Gluten-Free Sourdough Bread.](#)

## References and Resources

[Baking: Sourdough Bread Resources](#), University of Illinois Extension

Options for creating your own gluten-free sourdough starter:

- [Starting a Starter From Scratch](#), Bakerita.com
- [Starting a Starter From a Purchased Starter Packet](#), Cultures for Health
- [Gluten-Free Flours](#), Cultures for Health

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