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SOURDOUGH BREAD (BOULE), GLUTEN-FREE

October 15, 2010 by [Jeanne](#)

OK, folks. On to the part you're been waiting for-baking with your [starter](#). And if you're using these recipes and methods-please let me know how things are going for you. I consider this to be a work in progress.

After about 4 days of developing my starter, I started to bake with it. This is where things got a bit tricky. The ratio of starter to flour to water was quite different than the ratio you would find in a wheat-based bread and starter. [Michael Ruhlman](#), author of the book [Ratio](#) (among many others), and the person whose post alerted me to the idea of using red cabbage to kick-start your sourdough starter, recommends the following ratio for using wheat starter:

“1 part starter : 1 part water : 2 parts flour. Add salt, about 2% of the total weight. So for a good-sized country loaf, use 10 ounces starter (and thus .8 ounces salt). If you're metric, use 300 grams starter, 24 grams salt.”

I began with this ratio and found that it didn't contain enough liquid. One thing to note is that gluten-free flours are, for the most part, whole grain, and therefore absorb more moisture than does unbleached wheat flour. In his book, [Artisan Breads Every Day](#), Peter Reinhart (one of my bread baking gods), confirmed for me this observation when he mentioned the need for more water when making breads with whole grain flours. If you look at Ruhlman's wheat bread ratio, you will see that it is at 50% water and 50% starter to 100% flour.

A word about ratios and a formula in bread baking called **Baker's Percent (BP)**. At first it seems confusing, but it is actually easy and interesting to figure out. The Baker's Percent system starts out with the amount of flour at 100%. Whatever the amount of flour you use, it is at 100%. So, if you use 10 oz of flour, 10 oz is 100%. Then you think of all of the other ingredients as percentages in relation to (not adding up to) that 100%. So, if you use 5 oz of water to 10 oz of flour, your percentage of water is 50%. So, Ruhlman's ratio put in these terms is 100% flour, and 50% each of water and starter, and 2% salt. One thing to keep in mind is that you are not aiming to have your ingredients add up to 100%. The 100% is just your amount of flour, whatever amount that is. You will end up having a BP formula for your bread at a percentage above 100%. Thus, the total percentage for Ruhlman's bread is 202%.

So, I played with the ratios, in order to come up with a BP that I felt worked well for the gluten-free sourdough. I experimented with making sourdough baguettes (recipe in a later post) and with making a *boule* (the French word for a round loaf). Basically, a good-sized *boule* ends up being basically double the recipe for 2 baguettes. Both work well. Of course, I have found that the *boule* needs to rise much longer than the baguettes-which makes sense because it's a bigger loaf. Please note that the sourdough starter works much more slowly than commercial yeast. It is already activated and it takes its own sweet time doing its thing.

So far, I have found that the ratio that works best for my sourdough starter is: 100% flour, 200% starter, 40% water, 2% salt, 1% xanthan gum, 4% sugar, for a grand total of 347%. As you can see, this is much different from Ruhlman's percentage. Also, this creates a wet and sticky batter instead of a tacky dough that one can manipulate. It's more like a thick cake batter than a bread dough. This is to be expected because gluten-free dough, like whole grain dough, is best when it's wet and sticky. Again, this seems to be on track with Peter Reinhart's comment in *Artisan Bread Every Day*, where he says, "For some breads, especially rustic breads, the dough needs to be sticky to achieve a large hole structure." Although this bread doesn't have a large hole structure by wheat standards, it does have a good hole structure by gluten-free standards

This bread is a dense, rustic-type bread with a chewy crust. My other breads, especially my non-sourdough [gluten-free baguettes](#), have a larger hole structure. Much of this is due to the fact that the non-sourdough baguettes use commercial yeast which has more instant "kick" than a sourdough starter. Also, my non-sourdough breads have a non-chewy crust.

I have borrowed the baking method for this bread from [Jim Lahey](#)'s No-Knead Bread recipe. Jim Lahey is a bread baker and author, and created a bit of a sensation when [Mark Bittman](#) explained his [rising and baking method](#) in a 2006 *New York Times* article. Lahey went on to write about his method in the book, [My Bread: The Revolutionary No-Work, No-Knead Bread](#). The basics of this method are actually perfect for gluten-free bread, which does not require any kneading in the first place (because there's no gluten to manipulate).

OSourdough Bread (*Boule*), Gluten-Free

Special Equipment Needed

-4 quart/3.8 liter Dutch oven w/a lid-

- 4 quart/3.8 liter bowl (one the same size as your Dutch oven)
- heavy-duty stand mixer (a hand mixer will do in a pinch)
- parchment paper and plastic wrap
- spray bottle with water for spraying top of the crust
- instant read thermometer is nice to double-check the interior temperature of finished bread, but you can do without it (they are cheap-get one!)

Ingredients (measurements are in weight ounces, not fluid ounces)

30 oz/850 g (a bit less than 4 cups) sourdough starter (200% BP)

(If your starter has been dormant-e.g., in the fridge and not being fed/watered every day-you need to wake up the yeast before you use it in the bread dough. Feed and water the yeast the day before you make the bread to give the yeast time to wake up and start bubbling. Make sure the starter is bubbling before you use it. If you don't do this, the yeast won't be active and the bread won't turn out well.)

15 oz/425 g (about 3 cups) mix of gluten-free flours

->I like a combo of equal parts sorghum, brown rice, and tapioca. I have found that the bread works best with a mixture of **2 cups whole grain flours** (I like sorghum and brown rice) **and 1 cup tapioca flour**. It seems to work best if tapioca is one of the flours used-it's a starch and it helps the bread be less dense than it already is. But don't use all tapioca, white rice or sweet rice flours (100% BP)

6 oz/170 g (3/4 cup) water (approximate-you may need more or less) (40% BP)

2 teaspoon salt (2% BP)

2 teaspoons xanthan gum (1% BP)

2 tablespoon granulated sugar (4% BP)

Place the mixing bowl from your stand mixer on the scale and set it to zero. Add the starter. Add 5 oz/140 g (about 1 cup) each of your 3 flours. Add salt, xanthan gum, and granulated sugar.

Place bowl on mixer and fit with paddle attachment. Set the speed to low and mix for a few seconds-just until the dough comes together as a blob. The dough will now be extremely stiff and still fairly dry

Add your water, a bit at a time (about 1/4 cup at a time), mixing for a several seconds after each addition. The dough should gradually become like a stiff cake batter.

You need to run the mixer for several seconds after each addition to be able to judge how the water is being absorbed. For me, in Seattle this fall, it's routinely taken 6 oz/170 (3/4 cup) of water to make the appropriate dough consistency. Your area and conditions may need more or less water. You don't want the dough to be too thin or soupy (like pancake batter), but you also don't want it to be so stiff that it's like Play Doh. Once you have added all of the water, beat on high for about 3 minutes. At the end of this time, your dough should be smooth.

Line your rising bowl with a good-sized piece of parchment paper. It will be a bit wrinkly-do your best to smooth it down and fully cover the interior of the bowl

There should be some parchment paper hanging over the edges-you will use these edges later-don't cut them off right now. The reason I have you use parchment paper instead of greasing the bowl is that you are going to transfer the risen dough to the Dutch oven for baking at a later point.

Carefully scrape your dough into the lined bowl. Smooth top. Cut a few slashes in the top of the dough with a *lame* (a bread slasher) or a very sharp knife.

Cover bowl with plastic wrap (I usually use a rubber band to keep it on the bowl) and place it in a warm-ish, draft-free place. Your oven with the light turned on in it is a nice place. Or, if you're baking other things, on the top of the stove is great-so your dough can take advantage of the warmth to encourage rising. A friend of mine puts hers in a large pot with a lid and keeps it next to the stove while she's cooking other things.

Let the dough rise for 4 to 6 hours. I've let it rise all sorts of different time periods, and 4-6 hours seems to work well. I've let it rise overnight, for about 12 hours, and it's been OK. There's really no "shoulds" in this stage. Just go about your business and come back to it when you can. The dough should approximately double in bulk.

Of interest is the fact that a longer rise time does not necessarily correlate with a lighter baked bread.

When you are ready to bake your bread, remove the bowl of dough from the oven (if you've been letting it rise in there). Place your Dutch oven, with lid, into your oven and pre-heat to 425 degrees F/220 degrees C/Gas Mark 7. Keep your Dutch oven in there for about 1/2 hour-so it gets nice and hot. When you're ready, carefully remove the Dutch oven from the oven and remove the lid. Remember: it will be extremely hot!

Remove the plastic wrap from your rising dough. Grasp the edges of the parchment paper with your hands, making sure that you have got a firm hold on it, and carefully and gently transfer your dough to the Dutch oven-your dough will be risen and is in a fairly fragile state. Be very careful-it is easy to burn yourself at this step. At this point, you can cut the parchment paper edges so there is not so much extra hanging over the sides. Spray the top with a few sprays of water-this will help to create the crisp and chewy crust. Place (hot) lid back onto your Dutch oven, and return to the oven.

Bake for 45 minutes at 425 degrees F. Then remove lid and bake another 15 minutes uncovered to further brown the top crust. Remove from oven and check internal temperature of the bread with an instant-read thermometer if you have one. It should read at least 205+ degrees F. This indicates that the bread is thoroughly baked.

Let sit for 15 minutes. After 15 minutes, carefully grasp the parchment paper again and transfer your bread to a cooling rack. You may remove the parchment paper now so the bread can cool. Please note that the bread is still cooking and the crumb is setting up at this point-let it cool completely before you slice it. It's hard to wait, but you will be happy you did!

This bread stores best on the counter, unwrapped at room temperature (not in the fridge). Do not wrap it in foil or plastic wrap-it will make the crust gummy. Once you cut it, store it unwrapped with the cut side down on the cutting board at room temperature. If you really want to wrap it, use a paper bag or something like [Debbie Meyer Bread Bags](#)-which are porous like paper bags and they let the bread breathe. My local food co-op carries them.

If you encounter issues or problems with the starter or the bread, check out my [Gluten-Free Sourdough Troubleshooting Guide](#) before posting a question. Also, look at the photo of my loaf, above, before you post a question about how high the bread should rise-as you can see, it doesn't rise that high.