

Using Soaked Flour in Recipes

Brief history of grain harvesting and processing:

*[Historic photo courtesy of Bigfork Museum of Art & History,
Donated by Rand Robbin]*

In older times, grains were harvested by a totally different process than they are today. First the individual shafts (sheaves) of grain were cut and bundled into shocks (either by hand, or with a mechanical harvester). Then the shocks were stacked teepee style so they could dry in the late summer sun, until they could be thrashed. During the night, dew gathered on the shocks, allowing the grains to begin the sprouting process. By the time they were thrashed and later ground into flour, most of the grains had sprouted.



Today, grain is harvested with a combine, cutting and thrashing the grain in one step, and eliminating the resting time in the fields. Most recipes were never altered to add a soaking process to mimic the sprouting that was bypassed. The flour of unsprouted grains was simply used as flour in recipes, but this led to a heavier, more dense product. A processing step was then added to remove the bran and germ, leaving only the soft endosperm for grinding into a white flour, and yielding a lighter product.

It didn't take long for nutritionists to recognize this process removed vital nutrients from the flour, so they advocated the addition of synthetic nutrients to make up for the lack, and enriched white flour became the baking norm. But nutritionally, it is far inferior to sprouted or soaked whole grain flour.

Why soak your flour?

Soaking whole grain flour accomplishes most of the chemical changes that would otherwise happen during sprouting, providing major dietary benefits:

- makes minerals more available for absorption (by neutralizing phytic acid). This includes not only the minerals in the grain, but other dietary minerals as well.
- breaks down the starches into shorter-chain vegetable starches and sugars, which are more easily digested;
- breaks down some of the proteins, including gluten, into peptides and amino acids, which are more easily digested;
- forms new proteins, vitamins, and other active components of the living plant.

Sources:

- *Nourishing Traditions*, by Sally Fallon with Mary G. Enig
- *The Tassajara Bread Book*, by Edward Espe Brown
- [Rebuild From Depression](http://www.rebuild-from-depression.com/simplechange/simplechange/grains-legumes-nuts-seeds.html) website
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How to convert a yeast-risen recipe to use soaked flour (or sponge)

1. This method works for recipes using yeast for the leavening. A different method is required for quick breads using baking soda or powder for leavening.
2. The general method: Choose a 2-step or 3-step process (the 3 step allows more soak time, but the 2-step allows the use of more whole grain and less white flour).
 - 3-Step Process: (step 1) mix whole grain flour with acidic liquid for a pre-soak mixture; rest, covered, at room temperature overnight (at least 8 hours). The next day: (step 2) mix in proofed yeast to make a sponge, rise; (step 3). add remaining ingredients, knead, allow dough to rise again before forming loaves, and then bake.
 - 2-Step process: (step 1) mix whole grain flour with acidic liquid; then work in proofed yeast. Rest, covered, in the refrigerator overnight (at least 12 hours). The next day, (step 2) add remaining ingredients, knead, and allow dough to rise twice before forming loaves, then bake.
3. Soaking the flour breaks down much of the gluten, so your bread may not rise as much as you would like. You could add extra gluten after the soak.
4. Approximately 1/2 to 2/3 of the total flour should be whole grain for the soak. There is no point to soaking white flour; instead, it is used for kneading the next day.
5. Determine whole wheat flour to liquid ratio for the soak:
 - 3-step soak ratio is 2:1 (flour to liquid) and forms a soft ball;
 - 2-step yeast sponge ratio is 4:3, for a soft and sticky mixture.

Whole spelt needs less liquid because it is water-soluble. The total overall flour:liquid ratio for the dough is about 2:1 for whole wheat, or 3.5:2 for whole spelt. (Total liquid includes liquid in sponge plus liquid in eggs and sweetener (if using); total flour includes whole grain flour in sponge and white flour added later.)

6. If a cultured milk product (whey, yogurt or buttermilk) is used to acidify the sponge liquid, be sure to add boiling water or scalded milk to the cultured milk product. This kills the bacteria in the cultured milk so they will not compete with the yeast. If you do not do this, your bread may not rise properly, and will have a beery flavor. Alternately, lemon juice can be used to acidify the water, about 1 Tbsp. per cup of water.
7. Vigorously beat the liquid and flour together, at least 100 strokes, to activate the gluten. Then press plastic wrap or waxed paper against the surface of the sponge, and allow to rest at room temperature overnight (note: if adding yeast to the sponge, allow sponge to rest in the refrigerator overnight).
8. Add a bit of baking soda with the white flour the next day, to neutralize the acid in the dough.

Example of a conversion: Yeast Bread, 3-Step Process

Original recipe ingredients (2 loaves):

- 3 cups lukewarm water (85 - 105^o F)
- 1/4 cup honey or maple syrup
- 1 1/2 Tbsp dry yeast (2 packages)
- 6 - 8 cups white flour
- 4 tsp salt
- 1/3 cup olive oil or softened unsalted butter

Modify for 3-Step Process (Soak, Yeast-Sponge, Rise)

Replace about half of the white flour with whole wheat for the sponge. I chose 4 cups whole wheat for the sponge and at least 2 cups white flour added the next day.

Then, determine amount of liquid for the presoak. For yeast bread, a ratio of 2:1 (flour to liquid) is desired, but reserve some of the liquid for proofing the yeast the next day. I chose 2 cups liquid (as 2/3 cup yogurt and 1 1/3 cups boiling water or scalded milk) for the 4 cups of whole wheat flour. And I added 1/2 tsp baking soda with white flour, to neutralize acid.

Adjusted Ingredients for 3-Step Process:

Pre-Soak:

- 2/3 cup yogurt
- 1 1/3 cup scalded milk or boiling water
- 4 cups whole wheat flour

Yeast Sponge

- 1 cup warm water
- 1/4 cup honey or maple syrup
- 1 1/2 Tbsp dry yeast (2 packages)

Knead & Rise:

- 4 tsp salt
- 1/3 cup olive oil or softened unsalted butter
- 2 1/2 - 4 cups unbleached white flour
- 1/2 tsp baking soda

Method:

Stir scalded milk/boiling water into yogurt. Stir into whole wheat flour, working into a ball. Cover with plastic wrap or waxed paper, and allow to rest overnight on the counter.

Next day, proof yeast in sweetened warm water; work into dough, beating for 100 strokes to work the gluten. Cover sponge with damp cloth; rest about 1 hour in warm spot.

Punch down, sprinkle with salt & oil; stir to combine. Sift baking soda with 1/2 cup flour and stir into dough. Work in remaining flour, turning out to knead on floured board. Dough should be soft, elastic and easy to knead without sticking.

Coat bowl lightly with oil; rotate ball of dough in oiled bowl to coat all surfaces. Cover again with damp cloth; allow to rise until double in bulk. Punch down, shape into 2 loaves, and bake in greased pans according to original recipe.

Example of a conversion: Yeast Bread, 2-Step Process

Original recipe ingredients (2 loaves):

- 3 cups lukewarm water (85 - 105⁰ F)
- 1/4 cup honey or maple syrup
- 1 1/2 Tbsp dry yeast (2 packages)
- 6 - 8 cups white flour
- 4 tsp salt
- 1/3 cup olive oil or softened unsalted butter

Modify for 2-Step Process (Yeast-Sponge, Rise)

Replace at least half of the white flour with whole wheat for the sponge. I chose 4 - 4 1/2 cups whole wheat for the sponge and at least 1 1/2 cups white added the next day.

Then, determine amount of liquid. For yeast bread, a ratio of 4:3 (flour to liquid) is desired for the sponge. This equates to 3 cups liquid for the 4 cups of whole wheat flour. For example, 1 1/3 cup scalded milk added to 2/3 cup yogurt, plus 1 cup to proof the yeast.

And add a bit of baking soda to the white flour, to neutralize acid from the soak.

Adjusted Ingredients for 2-Step Process:

Sponge:

- 2/3 cup yogurt
- 1 1/3 cup scalded milk or boiling water
- 4 cups whole wheat flour
- 1 cup warm water (85 - 105⁰ F)
- 1/4 cup honey or maple syrup
- 1 1/2 Tbsp dry yeast (2 packages)

Knead & Rise:

- 4 tsp salt
- 1/3 cup olive oil or softened unsalted butter
- 2 - 4 cups unbleached white flour
- 1/2 tsp baking soda

Method:

Pour scalded milk/boiling water over yogurt and stir; allow to cool to 105⁰ F. Stir into whole wheat flour. Meanwhile, proof yeast in sweetened warm water. Add to sponge, then beat for 100 strokes. Press plastic wrap or waxed paper against surface of sponge and allow to rest overnight in the refrigerator.

Next day, sprinkle with salt & oil; stir to combine. Sift baking soda with 1/2 cup flour and stir into dough. Work in remaining flour, turning out to knead on floured board. Dough should be soft, elastic and easy to knead without sticking.

Coat bowl lightly with oil; rotate ball of dough in oiled bowl to coat all surfaces. Cover again with damp cloth; allow to rise until double in bulk. Punch down, cover and rise again. Shape into 2 loaves, and bake in greased pans according to original recipe.