

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
- [Rebuild From Depression](http://www.rebuild-from-depression.com/simplechange/simplechange/grains-legumes-nuts-seeds.html) website
(www.rebuild-from-depression.com/simplechange/simplechange/grains-legumes-nuts-seeds.html)

How to convert a quick-bread or cookie recipe to use soaked flour

1. This method works for recipes using baking soda or baking powder for the leavening. A different method is required for yeast breads.
2. The general method is to mix whole grain flour with acidic liquid, then press plastic wrap or waxed paper against surface of batter, and leave at room temperature to soak overnight. The next day, mix dry ingredients and wet ingredients separately. Stir wet ingredients into the soaked mixture, then sift the dry ingredients and stir into the batter. Pour into baking pan(s) or muffin cups, and bake.
3. If the recipe calls for white flour, replace most of it with whole wheat flour for the soak. Or you can replace with whole spelt flour, but because spelt is water-soluble, you will need to reduce the total amount of liquid. There is no point to soaking white flour; however, you will want to reserve some of the total flour as white flour to mix with the baking soda or powder after the soaking period.
4. Determine liquid to whole wheat flour ratio for the soak, and adjust to desired ratio for quick breads: 2 cups of acidic liquid per 3 cups of flour; the result will be soft and sticky.
 - If you need to add more liquid than called for in the recipe, add equivalent amount of coconut or almond flour to balance the extra liquid, after the soak. The amount of coconut or almond flour should never exceed 1/4 of the total flour in the recipe. For example, if you need to add 1/4 cup liquid to get the right ratio, replace 1/4 cup of the white flour with coconut flour, as long as there is at least 1 cup total flour in the recipe.
 - Or use honey or maple syrup for all or part of the sweetener, to add liquid.
 - If the desired ratio of liquid to flour is less than in the original recipe, use the amount from the original recipe for your soak; you can always add more white flour after the soak, if needed for proper texture.
 - If recipe calls for cultured milk (yogurt, buttermilk or sour cream), the conversion is easy. Simply mix the cultured milk with the whole wheat flour (refer to ratios of flour to liquid above), reserving the white flour to be mixed with the baking soda or baking powder after the soaking period.
 - If it calls for water, milk, or fruit juice, add 1 Tbsp whey or lemon juice per cup of liquid, and mix with whole wheat flour, reserving the white flour to be mixed with the baking soda or baking powder after the soaking period.
 - If there is no liquid in the original recipe (for example, biscotti), you will need to dry the soaked flour in a dehydrator, then process a flour texture, before mixing with the remaining ingredients.

Example of a conversion: *Banana Bars*

Original recipe ingredients

Wet ingredients:

- 2 large ripe bananas, mashed
- 1/4 cup vegetable oil
- 2 large eggs
- 1/3 cup plain yogurt, unsweetened (or buttermilk)
- 1/2 teaspoon real vanilla extract

Dry ingredients:

- 1 1/2 cup all-purpose white flour
- 1/2 cup sugar
- 1/2 tsp baking soda
- 1 1/2 tsp baking powder, aluminum-free
- pinch salt

First, replace most of the white flour with whole wheat, reserving 1/4 - 1/2 cup white flour to mix with the baking soda. I chose 1 cup whole wheat and 1/2 cup white.

Second, determine ratio of whole wheat flour to liquid, for the soak. For quickbreads, a ratio of 3:2 (flour to liquid) is desired. Here we have 1 cup flour to 1/3 cup yogurt, for a ratio of 3:1. Another 1/3 cup liquid (as milk) is needed to achieve the desired ratio of 3:2. However, eggs and mashed bananas also add some liquid, so I reduced the added liquid to 1/4 cup.

Third, since 1/4 cup liquid is added, replace equivalent amount (1/4 cup) of white flour with coconut or almond flour, so that the final batter will not be too runny. That is, instead of 1/2 cup white flour, use 1/4 cup white and 1/4 cup coconut flour.

The new recipe becomes (changes in *italics*):

Soaking ingredients:

- *1 cup whole wheat flour*
- *1/3 cup plain yogurt or buttermilk*
- *1/4 cup milk*

Wet ingredients (after soak):

- 2 large ripe bananas, mashed
- 1/4 cup vegetable oil (or coconut oil, melted/softened)
- 2 large eggs
- 1/2 teaspoon real vanilla extract

Dry ingredients (after soak):

- *1/4 cup unbleached white flour*
- *1/4 cup coconut (or almond) flour*
- 1/2 cup sugar
- 1/2 tsp baking soda
- 1 1/2 tsp baking powder, aluminum free
- pinch salt

A few final considerations:

I have found that using live cultured milk (yogurt or buttermilk) lends a beery flavor to the final product, because some alcohol is produced during the soak. To avoid this, I replace half the amount of yogurt with boiling water, to kill yogurt's bacteria.

I prefer to sweeten with stevia rather than sugar. The replacement ratio is 1 tsp stevia extract powder for 1 cup sugar (or in this recipe, 1/2 tsp stevia to replace 1/2 cup sugar). Stevia tastes best if mixed with fruit or fruit juice and allowed to rest a bit before adding to the recipe. So I stir it into the mashed bananas. If you use sugar, mix it with the dry ingredients.

I use Celtic sea salt (for its trace minerals) instead of regular salt, and melted coconut oil or butter instead of vegetable oil. If you use vegetable oil, be sure it is cold-pressed.

The ingredients then become (changes in *italics*):

Soaking ingredients:

- 1 cup whole wheat flour
- 2 Tbsp *plain yogurt plus boiling water to make 1/3 cup mixture*
- 1/4 cup milk

Wet ingredients (after soak):

- 2 large ripe bananas, mashed
- 1/2 tsp *stevia extract powder*
- 1/4 cup vegetable oil (or coconut oil, melted/softened)
- 2 large eggs
- 1/2 teaspoon real vanilla extract

Dry ingredients (after soak):

- 1/4 cup unbleached white flour
- 1/4 cup coconut (or almond) flour
- 1/2 tsp baking soda
- 1 1/2 tsp baking powder, aluminum free
- pinch *Celtic sea salt*

The method is:

Measure whole wheat flour into bowl. Stir boiling water into the yogurt in measuring cup, then add milk. Stir this mixture into the flour. Press sheet of waxed paper against the surface of the batter and let rest on counter overnight (at least 12 hours).

The next day, preheat oven to 350^o F. Grease and flour 8" square baking pan.

Combine wet and dry ingredients separately. Whisk wet ingredients to combine, then stir into soaked flour. Sift dry ingredients over batter and stir in just until moistened. **Check texture**; it should be thick, like muffin batter. If too dry, add 1 - 2 Tbsp milk; if too wet, add coconut flour, 1 tsp at a time, but not more than 2 Tbsp. Add more white flour if needed.

Pour into prepared baking pan; bake for 30 minutes. Remove to rack to cool in pan before cutting into bars.

Soaking Flour for Quick Breads & Cookies

If whole spelt flour is used, you need less liquid, so I just add less boiling water to the yogurt (changes in *italics*).

Soaking ingredients:

- 1 cup whole spelt flour
- 2 Tbsp plain yogurt plus boiling water to make *1/4 cup mixture*
- 1/4 cup milk

Wet ingredients (after soak):

- 2 large ripe bananas, mashed
- 1/2 tsp stevia extract powder
- 1/4 cup vegetable oil (or coconut oil, melted/softened)
- 2 large eggs
- 1/2 teaspoon real vanilla extract

Dry ingredients (after soak):

- 1/4 cup unbleached white spelt flour
- 1/4 cup coconut (or almond) flour
- 1/2 tsp baking soda, aluminum free
- 1 1/2 tsp baking powder
- pinch Celtic sea salt

The method is:

Measure whole spelt flour into bowl. Stir boiling water into the yogurt in measuring cup, then add milk. Stir this mixture into the flour. Press sheet of waxed paper against the surface of the batter and let rest on counter overnight (at least 12 hours).

The next day, preheat oven to 350⁰ F. Grease and flour 8" square baking pan.

Combine wet and dry ingredients separately. Whisk wet ingredients to combine, then stir into soaked flour. Sift dry ingredients over batter and stir in just until moistened. **Check texture**; it should be thick, like muffin batter. If too dry, add 1 - 2 Tbsp milk; if too wet, add coconut flour, 1 tsp at a time, but not more than 2 Tbsp. Add more white flour if needed.

Pour into prepared baking pan; bake for 30 minutes. Remove to rack to cool in pan before cutting into bars.