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*The Science of Sourdough: The Effect of Lactobacillus Bacteria on Wheat Gluten Degradation*

Wheat has been a popularly used grain for bread making for thousands of years. Up until the 1800's bread was made via the sourdough method, which utilized Lactobacillus bacteria to raise the dough. Later, utilizing yeast instead of Lactobacillus bacterium, the bread making process moved at a much faster rate. As a result, sourdough became a specialty.

Gluten is a rubbery protein found in wheat flour used to hold the loaf together. However, recent studies have shown that the numbers of gluten intolerant people are rising at an alarming rate. These people cannot eat modern bread without experiencing bloating and other illness. In order for them to eat bread, they must seek special breads made from grains such as quinoa, rice, tapioca and others. However, some gluten intolerant people can eat wheat bread if it is made of sourdough. So how does sourdough make a difference? That is what *The Science of Sourdough: The Effect of Lactobacillus Bacteria on Wheat Gluten* set out to answer.

I created various batches of wheat bread of three types: yeast, a short fermented sourdough, and true fermented sourdough. Once the dough was ready to be placed in an oven, it was instead rinsed, exposing the gluten. The gluten was then measured and tested in weight and elasticity. I hypothesized that Lactobacillus bacteria and fermentation would reduce and/or weaken the gluten. The result of the experiment was that Lactobacillus fermentation in the dough reduced the amount of gluten, as well as weakened its elasticity. My hypothesis was supported.