OF BREAD AND BACTERIA

First off, this bread is good. It's pungent, substantial, with a no-nonsense, hint-of-cheese taste. When toasted and slathered with butter, this bread could take those airy artisanal loaves with one hand tied behind its back.

"We often sell out," says Jenny Bardwell, owner of Rising Creek Bakery, in Mt. Morris, Pa. She is referring to the misleadingly named "salt-rising bread," which her bakers make using a 19th-century Appalachian recipe. The dough contains no yeast and very little, or no, salt. (One theory of the moniker's origins has frontier families traveling while their starter dough warmed in the sun in salt barrels atop their wagons.) What's the secret ingredient helping 700 loaves rise each week in Bardwell's kitchen? The bacterium *Clostridium perfringens*.

Think of it as the organism's community service.

Bruce McClane, a PhD professor of microbiology and molecular genetics at the University of Pittsburgh School of Medicine, has been studying *C. perfringens* for more than 30 years. Some strains are toxic, making the bacterium "the second most common cause of food poisoning," he says.

Bardwell consulted McClane while researching the bread's science and continues to contact him for tips to improve the baking process. There's no historical record or scientific evidence linking the bread to illness, yet she asked McClane to evaluate dozens of starter samples to be sure. He found no toxin-producing strains. Plus: "When they bake the bread, the heat kills a lot of *C. perfringens*," says McClane.

"It's a natural fermentation with what most people think of as a pathogen," says Bardwell. The starter stage can take up to 12 hours to ferment and requires careful monitoring of temperature and bacterial activity.

McClane is hoping to find a therapeutic for the aggressive strains of *C. perfringens*. Perhaps he should have a look at Bardwell's bread once again:

"People often comment on how it soothes their stomachs," she says.

—Michele D. Baum, Photo by Rising Creek Bakery