Like any self-respecting Dutchman, Jasper Akerboom owns a pair of wooden shoes. If they seem out of place in his garage in Ashburn, Virginia, so does everything else: honey, barley, herbs, and raisins; a row of 15-gallon drums; an old microscope; a funny smell.

Akerboom, 35, is a scientist at the Janelia Farm Research Campus, which explains the microscope. The rest is thanks to his all-consuming hobby, homebrewing.

Making beer is half art and half science, says Akerboom, so it’s the perfect diversion for a restless researcher. In the lab of biochemist Loren Looger, Akerboom’s day job entails creating and testing molecular probes that help visualize how neurons work in the brain.

Akerboom, who goes by “Jaapie” to friends and readers of his beer-focused blog, is serious about his homebrewing. In a three-ring binder, he lists the chemical features of water in every public aquifer in Virginia (water quality can significantly affect the flavor profile of beer). He uses local ingredients when possible: hops grown in Loudoun County, water from the tap, and organic spelt grain. Most homebrewers, however, order well-characterized strains of brewer’s yeast from online catalogues.

Not Akerboom. The environment is rife with yeast; more than 1,600 species have been described to date, and the brewer’s yeast Saccharomyces has hundreds of variants. He knew how to isolate yeast, so why not put a finger to the wind and see what sticks? He began in his backyard, leaving jars of broth open to the air. “The trick is to create a medium that bacteria find disgusting, so you have to do less purifying,” he explains.

Akerboom dabs the broth onto Petri dishes and watches for the yeast’s trademark shiny white colonies. Then he cultures the colonies to make sure they are yeast (hence the microscope) and watches to see if it actively ferments. He followed this protocol with yeast collected from upstate New York, where his wife’s family lives, and from Janelia’s grassy hillside roof, with dreams of dispensing a “homegrown brew” in the onsite pub.

Unfortunately, the beer made with Janelia yeast tasted medicinal, “sort of like an old Band-Aid,” Akerboom recalls. The New York strain was “highly undrinkable.” But the two varieties of yeast from his backyard produced delicious brews. He named his favorite Wild Farmwell Wheat. On a visit to the Lost Rhino Brewing Company, a few miles from Akerboom’s home, fellow Janelian Peter Lee introduced Akerboom to the brewmaster Favio Garcia. Taken with the idea of using local yeast for a beer, Garcia worked with Akerboom to adapt the Wild Farmwell Wheat recipe for a large scale and sold it as a summer wheat beer. Akerboom donated the yeast in exchange for a chance to learn more about the commercial brewing process.

Someday Akerboom would like to run his own brewery. And he’s already thinking about the marketing side of the business. “Half of a person’s decision to pick a beer to order is based on what the tap looks like,” he acknowledges with a smile. He keeps a shoebox of handcrafted taps next to the clogs in his garage. He carved his favorite from the wood of an old Dutch ice skate, the kind that straps to a shoe. He found the skate at a flea market in Maryland, but the hand-painted emblem bears the name of the small Netherlands town where his mother grew up. “I’m a scientist, but I’m an artist too,” he says. “The details are important.”

—Sarah Goforth