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Do-it-yourself DNA? Go right ahead



YOUTUBE/BENTOLAB

Beer DeCoded used Bento Lab, a portable DNA analysis kit, to map beer genomes. Both companies were funded on Kickstarter.

By Linda Rodriguez McRobbie AUGUST 25, 2017

Biotechnologist Gianpaolo Rando just wanted to sequence the DNA of grog — to make, he said, a “genetic tree of beer.”

Within beer’s four basic ingredients — yeast, grains, hops, and water — there is

practically infinite variation. “The challenge was: Can I look at the DNA that remains in the beer, that would come from the different hops, the different yeasts? Can I use the techniques I was using in the lab to classify different beers. . . to create a genetic tree of beers? For fun,” he said.

But his lab at the University of Geneva in Switzerland wasn’t interested in beer. So Rando turned to public biology labs that had the kind of equipment he needed. “I was curious to see whether I could do the same things I was doing in the lab but without the lab,” he said.

What he found, through Lausanne-based community biolab Hackuarium, was the opportunity to test something completely new — a portable DNA lab. The size of a laptop but thicker, Bento Lab contains the four pieces of gear necessary for DNA analysis: a centrifuge, PCR thermocycler (a device that amplifies segments of DNA), gel electrophoresis (which separates molecules), and a power supply. The kit — named “bento,” after the Japanese lunchboxes — allows the user to extract, copy, and visualize DNA.

Rando placed “Beer DeCoded” on Kickstarter in 2015 and drew enough backers — and \$12,700 — to sequence (and drink) 39 different brews.

Using the world’s first portable DNA lab to sequence beer is a cool thing to do. A lot of people like beer, and getting to know it better is inherently appealing. But the ability to sequence DNA in your living room has staggering implications for the planet and