

Silicon Valley's power brain food: Crickets

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For Bay Area techies attuned to the latest trends, kale is no longer cutting it and quinoa is passe. Instead, many are opting for a six-legged snack.

In startup offices around the region, people are munching on crickets.

Proponents say the tiny, chirping bugs are high in protein and iron and can serve as a sustainable alternative to beef or chicken. It's a movement that has people buzzing, with companies such as San Francisco-based Bitty Foods baking the bugs into cookies and chips, Tiny Farms in San Leandro breeding crickets for mass consumption, and New York-based Exo using them in protein bars. The products are showing up in Silicon Valley break rooms, and investors and entrepreneurs are paying close attention.

"I would say there's a new company that launches every six months, maybe even more frequently than that," said Exo co-founder Greg Sewitz.

Eating insects is nothing new. Fried grasshoppers, or chapulines, are a favorite in Mexico, and pushcarts offering everything from crickets to silk worms line the streets of Thailand. But companies trying to market them in the U.S. must confront the squeamishness most Westerners feel about bugs.

"The very first time I had crickets it was a little bit weird. And you always have in the back of your mind, 'I wonder if there's an antenna in

this bar," said Bridget Sauer, who works in the San Francisco office of Teespring, an online custom T-shirt making platform. Sauer, a triathlete, now is hooked on peanut-butter-and-jelly-flavored Exo bars.

Companies like Exo and Bitty are part of a larger trend of food startups that are replacing meat, gluten and dairy in everyday products. Investors have poured more than \$500 million into companies such as plant-based imitation meat maker Impossible Foods of Redwood City and meal replacement Soylent, according to venture capital database CB Insights. Impossible Foods has raised \$183 million from big names including Bill Gates and Google Ventures, and Soylent raked in \$21.5 million from backers including Andreessen Horowitz. Investment in these next-generation food startups is on track to hit record growth this year, CB Insights analyst Zoe Leavitt wrote in an email.

Chocolate-covered insects and lollipops with bugs suspended in transparent, sugary candy have long been available as novelty items, but the crickets-as-protein movement began picking up steam in 2013 with a report by the Food and Agriculture Organization of the United Nations.

The report touted the nutritional benefits of insects and introduced them as a potential solution to a rapidly approaching problem - the world will house 9 billion people by 2050, forcing humans to nearly double their food production using a limited supply of land and water. Crickets need 12 times less feed than cattle and half as much as chickens to produce the same amount of protein. They require less water and space to farm, produce minimal amounts of greenhouse gases and can be fed organic waste, according to the report.

"Edible insects are one of the most sustainable forms of protein on the planet," said Megan Miller, co-founder of San Francisco-based startup Bitty Foods.

But whether they can be used as a more environmentally friendly alternative to other meats will depend on how the insects are farmed and what they are fed. A report published last year by researchers with the University of California at Davis found more study is needed to evaluate the long-term potential of bugs as protein, and concluded "the potential for crickets to supplement the global supply of dietary protein appears to be more limited than has been recently suggested."

Of the world's 2,000 types of edible insects, crickets seem to be gaining the most traction in the U.S. They have a neutral flavor - "sort of nutty and toasty with a bit of earthiness," Miller said - and aren't as frightening as spiders or scorpions.

Bitty products use cricket flour, which is made by freezing a batch of crickets, dry-roasting them and grinding them into powder. The powder, which Miller says contains 70 grams of protein per cup - twice as much as beef - is mixed with coconut and cassava, a starchy root, to make a gluten-free baking flour.

Next month, snack delivery service SnackNation will ship thousands of Bitty's cricket flour chips to offices around the country, including to Bay Area tech companies notorious for keeping their kitchens loaded with free food. Among the offices soon to be receiving cricket snacks are Palo Alto-based HP, San Francisco-based online real estate platform Opendoor and Southern California-based Walt Disney Animation Studios.

Cricket products have become especially popular among many Silicon Valley techies. Exo bars are available in the San Francisco break rooms of Nurx, an on-demand birth control delivery service, and Beyond Pricing, a service for home-sharing landlords. The bars and Bitty cricket products also have fans at startup Nootrobox, which makes brain-boosting smart drugs, and ride-hailing giant Uber. San Francisco-based

financial tech startup Truebill gave Exo bars a try, but they didn't catch on with employees.

"Tech workers are generally the people who are most interested in new trends and in innovation," Miller said. "I don't think there's any place else in the world where you have the intersection of foodies and innovation like you do in the Bay Area. So it's the natural place to launch a slightly strange product."

Many companies that make cricket snacks, including Bitty and Exo, get their bugs from Entomo Farms in Canada. But Tiny Farms, a startup out of San Leandro, is ramping up its own small cricket farm with the hope of providing cricket connoisseurs with a local, low-cost alternative.

Tucked into a warehouse it shares with artists working on Burning Man projects, biotech firms, a 3-D printing company and a rabbit supply store, the Tiny Farms space is filled with the incessant chirping of millions of crickets crawling over pallets that resemble broken apart egg cartons. Co-founder and CEO Daniel Imrie-Situnayake hopes to have his bugs on the market by the end of September. His long-term goal is to make crickets a realistic protein option by reducing their price - a pound of cricket flour now costs about \$20, he said.

"If a pound of beef cost \$20, no one would eat burgers anymore," Imrie-Situnayake said. "So we really need to get the price even lower."

For the more daring, Tiny Farms also deep fries whole crickets, legs, antennae and all, and serves them with lime, salt and chili powder. The end result is a greasy morsel with a light, airy crunch and the earthy flavor of a pumpkin seed.

"They're a really good bar snack," Imrie-Situnayake said, "good with chips and guac."

Companies cashing in on crickets

Crickets have become popular snacks in Silicon Valley, where they are viewed as a nutritious and sustainable alternative to other proteins. Here are two Bay Area companies jumping on board.

Company - Bitty Foods

What it does - Makes cookies and chips with "cricket flour" - a gluten-free mixture of ground-up, dry-roasted crickets, coconut and cassava.

Based - San Francisco

Founded - 2014

Learn more - bittyfoods.com

Company - Tiny Farms

What it does - Farms [crickets](#) for human consumption. Founders hope to bring their bugs to market by the end of September.

Based - San Leandro

Founded - 2012

Learn more - tiny-farms.com

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