

Food-tech startups aim to replace eggs and chicken (Update)

December 8 2013, by Terence Chea



In this photo taken Tuesday, Dec. 3, 2013, plant-based products including chocolate chip cookies, cookie dough and mayonnaise are displayed at Hampton Creek Foods in San Francisco. Can plants replace eggs? A San Francisco startup backed by Bill Gates believes they can. Hampton Creek Foods is scouring the planet for plants that can replace chicken eggs in everything from cookies to omelets to French toast. Funded by prominent Silicon Valley investors, the upstart seeks to disrupt a global egg industry that backers say wastes energy, pollutes the environment, causes disease outbreaks and confines chickens to tiny spaces. (AP Photo/Eric Risberg)

The startup is housed in a garage-like space in San Francisco's tech-heavy South of Market neighborhood, but it isn't like most of its neighbors that develop software, websites and mobile-phone apps. Its mission is to find plant replacements for eggs.

Inside, research chefs bake cookies and cakes, whip up batches of flavored mayonnaise and pan-fry omelets and French toast—all without eggs.

Funded by prominent Silicon Valley investors and Microsoft founder Bill Gates, Hampton Creek Foods seeks to disrupt a global egg industry that backers say wastes energy, pollutes the environment, causes disease outbreaks and confines chickens to tiny spaces.

The company, which just started selling its first product—Just Mayo mayonnaise—at Whole Foods Markets, is part of a new generation of so-called food-tech ventures that aim to change the way we eat.

"There's nothing to indicate that this will be a trend that will end anytime soon," said Anand Sanwal, CEO of CB Insights, a New York firm that tracks venture capital investment. "Sustainability and challenges to the food supply are pretty fundamental issues."

Venture capital firms, which invest heavily in early-stage technology companies, poured nearly \$350 million into food-related startups last year, compared with less than \$50 million in 2008, according to the firm.

Plant-based alternatives to eggs, poultry and other meat could be good for the environment because it could reduce consumption of meat, which requires large amounts of land, water and crops to produce, backers say.



In this photo taken Tuesday, Dec. 3, 2013, CEO Josh Tetrick holds a species of yellow pea used to make Just Mayo, a plant-based mayonnaise, at Hampton Creek Foods in San Francisco. Can plants replace eggs? A San Francisco startup backed by Bill Gates believes they can. Hampton Creek Foods is scouring the planet for plants that can replace chicken eggs in everything from cookies to omelets to French toast. Funded by prominent Silicon Valley investors, the upstart seeks to disrupt a global egg industry that backers say wastes energy, pollutes the environment, causes disease outbreaks and confines chickens to tiny spaces. (AP Photo/Eric Risberg)

It could also benefit people's health, especially in heavy meat-eating countries like the U.S., and reduce outbreaks of diseases such as avian

flu, they say.

"The biggest challenge is that people who consume a lot of meat really like meat, and to convince them to try something different may be extremely difficult," said Claire Kremen, faculty co-director of the Berkeley Food Institute at the University of California, Berkeley.



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The American Egg Board, which represents U.S. producers, said eggs can't be replaced.

"Our customers have said they're not interested in egg substitutes. They want real, natural eggs with their familiar ingredients," Mitch Kanter, executive director of the board-funded Egg Nutrition Center, said in a statement.

The industry has reduced its water use and greenhouse gas emissions, and hens are living longer due to better health and nutrition, he said.

Hampton Creek's quest to replace the ubiquitous chicken egg is also backed by PayPal co-founder Peter Thiel and Khosla Ventures, a venture capital fund started by Sun Microsystems co-founder Vinod Khosla.



In this photo taken Tuesday, Dec. 3, 2013, CEO Josh Tetrick, left, watches as research and development chef Trevor Niekowal, right, makes a plant-based scrambled egg at Hampton Creek Foods in San Francisco. Can plants replace

eggs? A San Francisco startup backed by Bill Gates believes they can. Hampton Creek Foods is scouring the planet for plants that can replace chicken eggs in everything from cookies to omelets to French toast. Funded by prominent Silicon Valley investors, the upstart seeks to disrupt a global egg industry that backers say wastes energy, pollutes the environment, causes disease outbreaks and confines chickens to tiny spaces. (AP Photo/Eric Risberg)

In its food lab, biochemists grind up beans and peer through microscopes to study their molecular structure, looking for plants that can fulfill the culinary functions of eggs. So far, the company has analyzed some 1,500 types of plants from more than 60 countries.

The research has resulted in 11 "hits," said Josh Tetrick, the company's CEO.

"Our approach is to use plants that are much more sustainable—less greenhouse gas emissions, less water, no animal involved and a whole lot more affordable—to create a better food system," said the former linebacker on West Virginia University's football team.

The company's first product—the mayonnaise—is sold for roughly the same price as the traditional variety. It soon hopes to start selling cookie dough and a batter that scrambles like eggs when fried in a pan.



In this photo taken Tuesday, Dec. 3, 2013, with pictures of backers Bill Gates, left, and Tony Blair, right, in the background, research associate Camilla Hall measures a protein isolate at Hampton Creek Foods in San Francisco. Can plants replace eggs? A San Francisco startup backed by Bill Gates believes they can. Hampton Creek Foods is scouring the planet for plants that can replace chicken eggs in everything from cookies to omelets to French toast. Funded by prominent Silicon Valley investors, the upstart seeks to disrupt a global egg industry that backers say wastes energy, pollutes the environment, causes disease outbreaks and confines chickens to tiny spaces. (AP Photo/Eric Risberg)

"The egg is a miracle, so one of the hardest parts of replacing it is all the functions that it can do," said Chris Jones, the company's culinary director of innovations and a former contestant on Bravo TV's "Top Chef."

While Hampton Creek takes aim at the egg, another Gates-backed company is targeting the chicken itself.

Beyond Meat, located in Southern California, sells "chicken-free strips," which have the taste and stringy texture of poultry but are made from plant protein. It is sold at Whole Foods and natural food stores. It's also working on a product that mimics beef.

Inside its test kitchen in El Segundo, Caitlin Grady, the company's culinary ambassador, stir-fried the strips with broccoli, onion, peppers and sesame oil. "I cooked it just like a regular stir-fry, but I don't have to worry about the meat being raw," Grady said.



In this photo taken Tuesday, Dec. 3, 2013, are a few of the 1500 plant seeds tested in the making of plant-based foods at Hampton Creek Foods in San Francisco. Can plants replace eggs? A San Francisco startup backed by Bill Gates believes they can. Hampton Creek Foods is scouring the planet for plants that can replace chicken eggs in everything from cookies to omelets to French toast. Funded by prominent Silicon Valley investors, the upstart seeks to disrupt a global egg industry that backers say wastes energy, pollutes the environment, causes disease outbreaks and confines chickens to tiny spaces. (AP Photo/Eric

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The company is also funded by Obvious Corp., a startup incubator founded by Twitter's founders, and Kleiner Perkins Caulfield & Byers, one of Silicon Valley's premier venture capital firms.

"It can fit in a vegan's diet. It can fit in a carnivore's diet," said Beyond Meat CEO Ethan Brown. "We're trying to appeal to the full range of consumers that are making some shift toward healthier protein."

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