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us: Ag startup Agragene finds n St. Louis, producing sterile ies

Post-Dispatch



Stephanie Gamez, director of R&D, and Emilie Saa, research associate, at Agragene examine a vial of sterile spotted wing drosophila flies.

Photo courtesy Agragene

David Nicklaus St. Louis Post-Dispatch

Stephanie Gamez and her husband moved from San Diego to St. Louis with a few household goods, two cats and hundreds of thousands of fruit flies.

The winged cargo, packed in vials inside large plastic crates, was so precious that they brought it into their hotel room overnight during the journey. Without such precautions, Gamez' employer, a sustainable farming startup called **Agragene**, might not exist today.

Agragene uses the gene-editing technology known as CRISPR to produce male fruit flies that are sterile. When they mate with females in the wild, they produce no offspring. It looks like a promising way to control a pest that causes billions of dollars of damage to fruit crops worldwide, without using chemicals that can harm workers and beneficial insects.

Agragene, though, wasn't thriving in Southern California, where it was founded in 2017 based on research at the University of California San Diego. Getting a 100% sterile line of spotted-wing drosophila, the invasive fruit fly species Agragene was targeting, took longer than expected, and the startup was hemorrhaging cash.

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Gamez, the director of research and development, and another researcher were able to achieve 100% sterility by 2021 but Agragene's major investor, New York venture firm Osprae Ag Science, still wasn't sure it could make the finances work.

Carl Casale, an Osprae senior partner, wanted to keep Agragene viable. As owner of a fourth-generation blueberry farm in Oregon, he knew firsthand how costly fruit fly infestations were for growers.

As a former chief financial officer of Monsanto, he also knew a better place for Agragene. "I wanted to move the company to St. Louis for two reasons," Casale said. "A much lower cost of doing business, and an incredibly supportive ag biotech ecosystem."

Through contacts in St. Louis, Casale recruited Bryan Witherbee, formerly of medical diagnostic startup **Adarza** Biosystems, to be Agragene's chief executive. Witherbee flew to San Diego a year ago and arranged to ship lab equipment to St. Louis.

The fruit flies, however, were too valuable to trust to a moving company. "So much work had gone into them," Gamez said. "I said I would drive them."

During the two-day marathon trip, her husband was forbidden from running the rented van's air conditioner for fear of chilling the fruit flies. Humans, felines and insects all arrived safely, and Agragene now has four full-time employees in its offices and labs at the Helix Center in Creve Coeur.

It's working to produce enough sterile fruit flies to do field trials this spring. BioGenerator, the investment arm of industry group BioSTL, recently led a \$2 million capital round to fund the scale-up effort.

BioGenerator usually invests in home-grown startups, but has helped a few other firms relocate. "I think we're going to see more of these moves," BioGenerator President Charlie Bolten said. "We are in the middle of the country and we have the talent, and I think more people are recognizing that."

The Agragene team is convinced that they've found the right home. The company's burn rate, the pace at which it uses cash, is about one-third less than it was in San Diego.

And Gamez, the California transplant, is amazed by the support she's found here. She has met researchers at the Danforth Plant Science Center and other startups who are working on similar insect issues or similar crops.

"In San Diego, it's a biotech hub but mostly human health," she said. "We were the one that didn't fit in, but here we've found a tight-knit ag community."



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