



Aragene adopts Pairwise Gene-Editing Platform for sterile insect technology

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The partnership applies CRISPR technology to sterile-insect development, targeting spotted wing drosophila with a species-specific approach designed to protect crops and beneficial insects



Agricultural technology company Aragene has entered into a licensing agreement with Pairwise to access its Fulcrum CRISPR platform, in a move aimed at accelerating the development of targeted and sustainable pest-control technologies.

Under the agreement, Aragene will integrate the gene-editing platform into its Precision-Guided Sterile Insect Technology (pgSIT), which is designed to produce sterile male insects for proactive suppression of pest populations.

The companies said the partnership represents the first application of the Fulcrum technology in insect systems and could expand the use of precision gene editing beyond conventional agricultural breeding into biological pest management.

Aragene's first product, KNOCKOUT SWD, is being developed to target spotted wing drosophila, an invasive pest that causes more than \$1 billion in annual losses to berry, cherry and other soft-fruit crops in the US and Canada.

The company's technology is designed to provide species-specific pest suppression. By targeting the pest itself, the approach is intended to reduce impacts on crops and beneficial organisms, including pollinators and predatory insects, while limiting broader environmental exposure.

"Growers are running out of options as pests develop resistance to conventional insecticides, and they are looking for tools that are safe, targeted, and sustainable," said Bryan Witherbee, President and CEO of Aragene.

He said access to the Fulcrum platform will strengthen the gene-editing technology underpinning Aragene's pgSIT system and help the company advance its products from field trials towards practical pest-management tools for growers.

The agreement comes as agricultural producers face growing challenges from insecticide resistance and increasing demand for pest-control approaches that can complement or reduce reliance on conventional chemical insecticides.

Rather than applying a broad-spectrum pesticide across a crop, sterile-insect technologies seek to suppress pest populations by disrupting their ability to reproduce. The precision-guided approach being developed by Agragene uses genetic tools to support the production of sterile male insects that can be released to mate with wild pest populations, reducing subsequent generations.

Pairwise CEO Dr. Tom Adams said the company's work extends across agriculture and that partnerships with organisations working directly on specific agricultural challenges can help expand the applications of its technology.

"Agragene is the first to apply Fulcrum in insect systems, and it's exactly the kind of creative use we hoped good tools would find," Adams said.

The Fulcrum platform includes proprietary CRISPR editing tools, enzymes and trait libraries designed to enable precise genetic changes. Pairwise developed and validated the platform through its own agricultural breeding programmes and makes the technology available to partners and licensees for research and commercial applications.

For Agragene, access to the platform could strengthen the genetic engineering capabilities supporting its sterile-insect technology while expanding the potential pipeline of precision biological pest-control products.

The partnership reflects a broader shift in agricultural pest management towards biological and precision-based approaches that seek to address resistance, protect beneficial insects and reduce environmental impact. If successfully commercialised, species-specific sterile-insect technologies could provide growers with an additional tool within integrated pest-management programmes.

With field development underway for its spotted wing drosophila solution, Agragene's use of precision gene editing in insect systems could also demonstrate how CRISPR technologies are moving beyond crop improvement into the development of next-generation pest-control strategies.