German institute deploys transgenics to fight harmful insects without toxins

South America is fighting a battle against tiger mosquitoes that transmit yellow fever, dengue fever and the Zika virus. In Central Europe, wine and fruit growers fear another year of massive crop failures due to a type of vinegar fly known as the spotted-wing drosophila. Since the success rate of conventional methods continues to fall, Fraunhofer researchers in Gießen are developing new species-specific strategies that keep pests under control without resorting to environmental toxins.

Prof. Marc F. Schetelig at the Fraunhofer Institute for Molecular Biology and Applied Ecology IME in Gießen has designed a genetic system that causes the flies' offspring to not survive beyond the embryonic stage. If male flies carrying this system mate with naturally occurring females, the fertilized eggs will not produce larvae. But the genetic system also includes a switch that can be used to turn the program off. This switch can be activated by feeding the flies the antibiotic tetracycline: the tetracycline containing diet allows the flies to be successfully rearing in the laboratory. "The new method doesn't require antibiotics for larval rearing and only a little amount of antibiotics is needed for the adult flies. So no antibiotics are transferred to the environment," says Schetelig.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: New strategies against mosquitoes and other pest