Natural insecticide created with spider venom and genetically modified yeast

Scientists have noticed the powerful punch some spider venoms pack, and have started looking to them for inspiration for all kinds of applications. Glenn King, a molecular biologist now at the University of Queensland in Brisbane, Australia, thinks they could change the agricultural industry. In 2005, he founded a biotech company called Vestaron, now based in Michigan, to use spider venom as the basis for better pesticides.

Vestaron focuses on developing natural insecticides from spider venom, either by recreating them in a lab or making them through genetically modified yeast. It's also working on genetically modifying crops so that the plants produce their own insect-killing chemicals. Vestron has received approval from the US Environmental Protection Agency to roll two of their Australian funnel spider venom-based products out in the beginning of 2018, to farmers growing ornamental flowers and vegetables, like tomatoes and cucumbers, in greenhouses.

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Researchers at Vestaron broke down the peptides in Australian blue mountain funnel spider venom and isolated the ones that caused paralysis in insects, but not humans or other animals. They then isolated the genes in the spider that make these peptides and inserted them into yeast. The resulting genetically engineered yeast can mass-produce the insecticide components through fermentation, the same process that makes alcohol.

The GLP aggregated and excerpted this article to reflect the diversity of news, opinion and analysis. Read full, original post: A new wave of environmentally friendly pesticides will come from spider venom