

Pestilence Unto the Pests

Biological Pesticide May Be in the Works for Sweet Potato Whitefly

by DARCY MEEKER
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A University of Florida researcher has found a fungus that kills an insect costing millions for two billion-dollar Florida industries -- vegetables and ornamental plants.

The sweet potato whitefly is resistant to most chemicals, inflicts heavy damage on plants by sucking juices, and leaves a honeydew that encourages sooty mold.

In summer 1987, Lance Osborne was rearing sweet potato whiteflies in his Institute of Food and Agricultural Sciences lab in Apopka so he could run pesticide tests. But a fungus named *Paecilomyces fumosoroseus* hit the colony and wiped it out before he had a chance.

Now, IFAS and USDA are sponsoring further research into the fungus as well as a small beetle that attacks whitefly eggs "like a vacuum cleaner," Osborne said.

In addition, two companies are negotiating with IFAS for the rights to develop the "unusually effective" strain

of the common fungus as a biological control for sweet potato whitefly, said Dr. James Tammen, IFAS director of technology transfer.

The whitefly is a bad bug. It appears to poison the plant, because the whole plant is affected, not just the spot where the whitefly is feeding. It whitens tomatoes worth half a billion to Florida, and silvers whole squash plants, fruit and all. Squash is worth about \$60 million to the Florida economy.

"When you remove whiteflies, squash that were silvered by whitefly damage turn green again," Osborne said.

He said that two years ago, nurseries had no whitefly problem. Now they have to spray for them one to three times per week.

"We had an outbreak of the fungus a couple years ago on another insect that was not a pest," said Osborne. "It didn't seem worth pursuing at the time, but when a pathogen wipes out a widespread

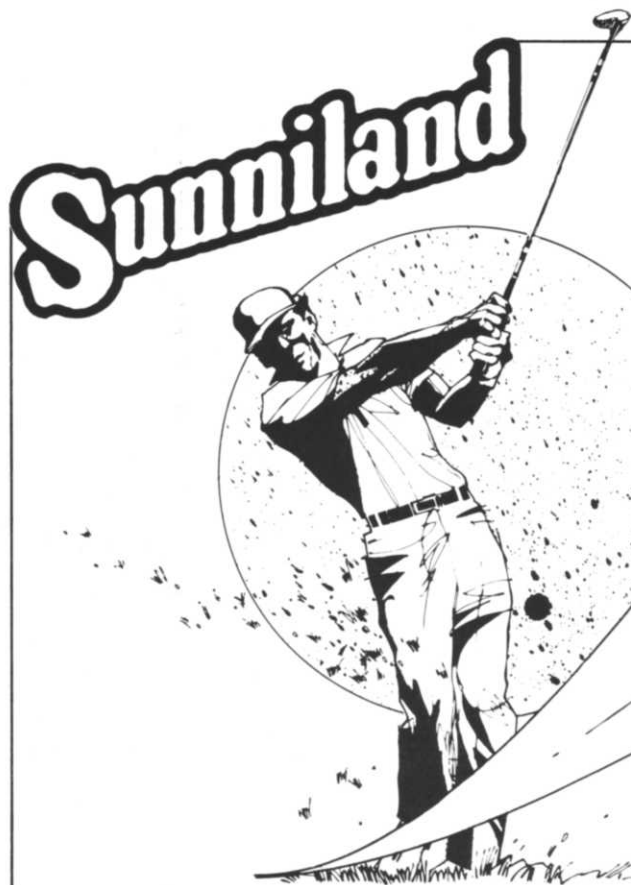
pest like sweet potato whitefly, you have to look into it."

A fungus that attacks fire ants and a microbe-sized worm that attacks mole crickets, also IFAS finds, are also being explored as potential commercial biocontrol products.

"The opportunity for commercial development of biocontrol is higher than ever before," said Tammen. "It's especially exciting because there's a whole new series of biotech companies specializing in niche markets."

Tammen said industry is especially interested in micropathogens such as fungi, viruses and bacteria to control plant diseases, weeds and insects.

Interest is great, Tammen said, because micropathogens can often be sprayed using existing pesticide equipment and often can be used in combination with other treatments including chemicals. Biologicals also promise a very high level of control, similar to chemical pesticides. 🍏



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