Pesticide-resistant whitefly could 'devastate' many US crops

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A tiny, invasive whitefly that is resistant to pesticides and carries crop-devastating viruses has been found outdoors in the United States for the first time, raising concerns among fruit and vegetable growers.

The Q-biotype whitefly turned up in April in the heavily manicured gardens of an affluent neighborhood in south Florida's Palm Beach County, where landscapers were spraying the flowers and shrubs regularly with insecticides.

Its discovery outdoors comes more than a decade after it was first found in a US retail nursery in Arizona.

Since 2005, the whitefly has also been found in about two dozen US states, but only in greenhouses.

It is already considered a major invasive pest worldwide.

Now that the Q-biotype whitefly is outdoors in the United States, researchers say it poses a serious threat to crops such as tomatoes, beans, squash, cotton and melons.

Having whiteflies outdoors makes the problem "much more difficult to control," and they may never be fully eradicated, said Lance Osborne, a professor of entomology at the University of Florida.

"The resistance to pesticides—that is what really sets them apart," he told a few dozen growers who attended a recent session to learn about the whitefly in Homestead, an agricultural area south of Miami.

"The best single treatment we have kills 90-91 percent of them. That is as good as we can do without multiple applications."

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Whiteflies draw fluid out of a plant's leaves, and excrete a sticky residue that allows fungus to grow, turning the leaves black and making it harder for them to photosynthesize.

The insects can also spread more than 100 viral diseases that weaken the plants and can make fruits and vegetables inedible.

There are dozens of different kinds of whiteflies in the world. This one, known as Q-biotype whitefly (Bemisia tabaci), looks exactly like the silverleaf whitefly, or B-biotype, but is a completely different species.

The Q-biotype whitefly is believed to originate in the Mediterranean region, particularly from tomato fields in Spain, Portugal and Israel, Osborne said.

Since its discovery outdoors in Florida in April, they have been found in more than 40 locations across the state, including residences, wholesale nurseries and retail plant outlets, crawling on the leaves of hibiscus, eggplant, lantana, ficus hedges and porter weeds.

'A serious risk'

Whiteflies can live on 600 different kinds of plants, 300 of which are grown in Florida, according to the state agriculture department.

"The reason we are worried about the Q is because it has such a huge host range and is resistant to pesticides," explained Osborne.

"They attack so many crops—there is always something in the ground these things will attack."

Dr. Lance Osborne, an entomologist with the University of Florida, gives a presentation on July 22, 2016 in Homestead, Florida to growers who are concerned about the pesticide-resistant whitefly biotype

While the Q-biotype whitefly has not done any major damage yet in Florida, its emergence has kept agriculture officials busy organizing inspections, working on plans to control the bugs and imposing quarantines around positive finds as necessary, a spokesman said.

"With our climate, robust international trade and more than 100 million visitors a year, Florida is a hotbed for agricultural pests and diseases," Florida agriculture commissioner Adam Putnam said in an email to AFP.

"The Q-biotype whitefly poses a serious risk to Florida's $120 billion agriculture industry and the more than two million jobs it supports."

Blamed for famine

Whiteflies have been blamed for worsening famine in Africa and for wreaking havoc on farming in the southern United States in the 1980s and 1990s.

Back then, swarms of whiteflies of the B-biotype destroyed cotton, tomato and melon fields, causing hundreds of millions of dollars in losses.

"The bottom line is, this can be devastating," said Osborne.

To encourage growers to check their plants for whiteflies, the University of Florida has extended a pledge of secrecy to anyone who wants to find out what kind of whiteflies they have on their plants.

Samples of whiteflies can be sent to their lab for DNA analysis, free of charge, and they promise the sender won't be identified except by county and the general type of location.

Pesticides are displayed in a store in Miami, Florida on August 9, 2016

Meanwhile, inspectors are making random checks in farming areas, quarantining nurseries and stopping the sale of any products deemed to be infested.

"It seems to me like it's a little bit of a witch hunt," said one grower at the meeting in Homestead, who asked to remain anonymous.

He complained that an inspector had taken action against his business after finding just one tiny whitefly on a leaf.

"If that is what you guys are going to do, it is going to make it very difficult for us, for our industry, to stay in business growing particular crops," he said.

Osborne urged growers not to panic. There are tools to fight the whitefly, and the arsenal of available insecticides is far more powerful today than it was a few decades ago, he said.

"We can achieve better control when we combine chemicals and make a program," said Osborne.

Still, he admitted, there is "no magic bullet."

While modern neonicotinoids—a type of insecticide—may be more effective than previous generations, they are also blamed for harming bees and other pollinators that are necessary for healthy crops.

And given the toughness of this whitefly, natural or organic solutions are not likely to work, Osborne said.