Thrips May Be Cause Of Strawberry Problem

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that they are not absolutely certain that the insect is the entire cause of the problem.

Damage to leaves on plants had been thought to be caused by late spring cold, and Barbara Goulart, a Penn State associate professor of horticulture and extension specialist in small fruits, said the damage could possibly be a combination of cold damage and thrips capitalizing on weakened plants.

However, in a telephone interview Thursday, she said that she is "90-percent" sure it is the Eastern Flowers Thrips. Cause for concern about the accuracy of that determination is because the species of thrips is indigenous (naturally occuring) in the state and similar damage had not been previously recorded.

Also supporting the belief that Thrips are to blame is the possibility that populations of Thrips may have been heavy because of very good winter survival.

It is possible that the insulative effects of the heavy snows, despite the record cold and length of cold, has lead to a higher incidence than normal of overwintering survival, and thus to higher populations of insects emerging in spring.

Except for production losses and the detraction from the appearance of the fruit, strawberries are safe to eat and should not be a cause of concern for the cosuming public.

However, for the producer, the strawberry crop may be severely damaged. One producer estimated a 75 percent loss compared to last year's production from the same field.

Depending On Extension

The help to strawberry growers is coming almost solely from Penn State University's College of Agriculture, though resources in the state are limited.

Goulart said that Hellerick is somewhat of a "hero" in discovering the thrip and getting the system going to determine the extent of the problem.

Using the Penn State computer system, Hellerick has requested other extension field agents to check fields in their respective counties and report that information back to him.

As of Wednesday, Hellerick said he has received confirmations of damage from Bucks, Chester, York, and Franklin counties, in addition to Lancaster.

The extension agent said that producers across the northern tier of the state and in New York may want to check fields now, in order to determine whether or not they can take action to prevent significant losses

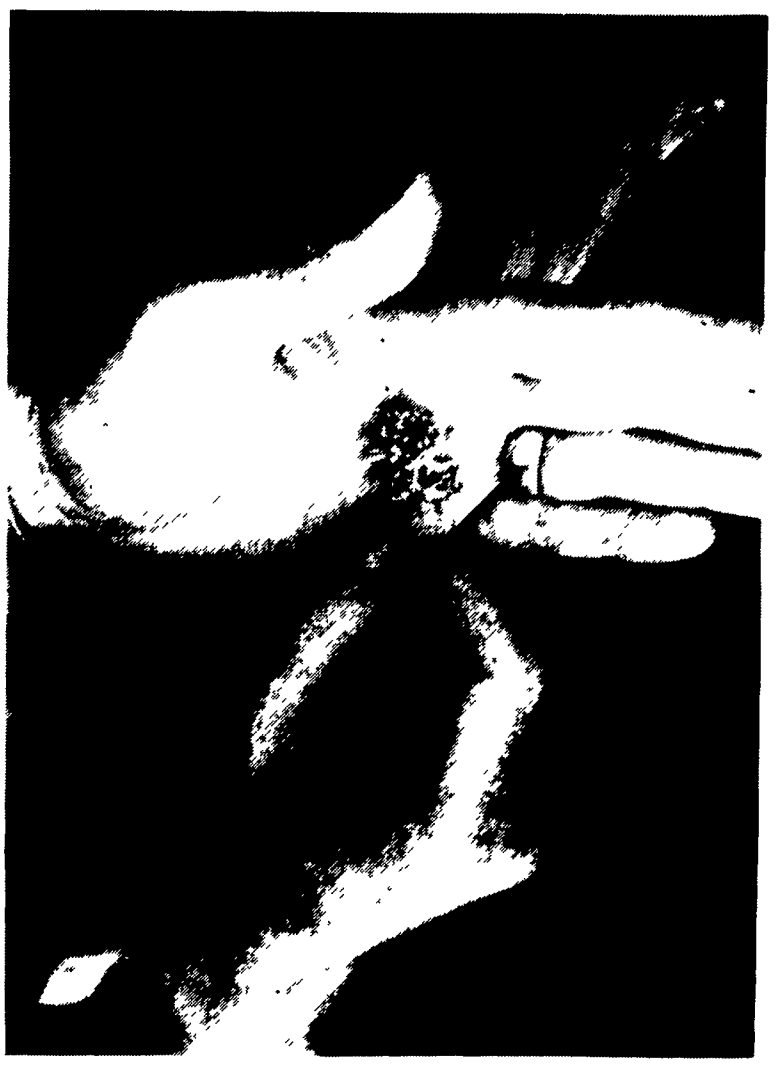
In the meantime, Penn State University and its extension researchers and agents are working to determine the extent of the problem. Producers can help by reporting infestations to their local agent. Since the problem does not pose any type of health risk to the public, the identity of the producer reporting a heavy infestation is not necessary for general public knowledge.

If work by Penn State reveals that there is a wide-spread significant problem that may require a request for federal assistance, they will inform officials at the state Department of Agriculture.

Once Penn State makes the determination of the extent of the problem and documents it, then PDA will review the university's findings and process a request for aid, if one is made, based on the nature of the problem.

In the meantime, the PDA is taking no active role in determining whether or not there is a problem, according to Carl Valley, PDA entomologist. Valley did help Hellerick however, by identifying the thrip samples Hellerick gave to him as the Eastern Flower Thrips, of which little technical information is available.

Lancaster County Extension Agent Bruce Hellerick show strawberries suffering from an infestation of Eastern Flowers Thrips which is thought to be causing a severe degradation on the quality of the fruit.



A way to test for Eastern Flowers Thrips in an area is to check clover flowers. Tap the clover flower against the palm of the hand and look very closely for small, lice-like insects. In heavily infested flower heads a number of thrips should be visible crawling on the palm. The insects are not dangerous to people and will not bite. Nor will they cause any problem if accidently ingested.

Valley said he doesn't have expertise on the thrips, and Penn State is currently without a resident entomologist who does. Goulart said she has been depending entirely on support from Cornell University for entomological expertise.

It is known however, that Thrips concentrate their feeding on the buds, flowers and vascular portions (the tubes carrying plant juice) which are hidden.

Currently the tiny, yellow-whitish insect are being found in the flowers and between the cap of the strawberry and the fruit.

The appearance of affected fruit would be dullness, appearance of seediness (caused by a lack of fruit development to expand and distance seeds), white tips on the fruit and a lack of apparent maturity.

Plants are also showing some leaf damage, which early on caused field agents to suspect cold damage, but which actually could have been caused by thrips feeding on developing plant buds in early spring, or through egg laying activity.

According to information disseminated by Hellerick, "Thrips are small, slender, active insects less than ¼ -inch in length with two pair of wings which have a fringe of feather-like hairs around the slender margin.

"The Eastern Flowers Thrips (EFT) is believed to be the most abundant and widely distributed thrips in the United States."

According to the information, "(Female thrips) insert their eggs in leaf slits made by the saw-like ovipositor. Egg hatch in two to seven days. The entire life cycle is completed in two to four weeks, depending on temperature. Many generations occur each year, but the largest populations are present from late spring to midsummer."

Finding Thrips

To look for thrips, examine the fruit at the junction of the cap and the fruit. If there is a browning around the junction, and if the fruit appears somewhat dried near the area, it is probably infected.

Researchers have been finding five or more thrips per berry.

The insects are difficult to see. They are the size of the hairs on the strawberry fruit, but tallowy in color. They will move around when disturbed from their secretive feeding areas in flowers or in the

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Thrip-affected strawberries on the left are dull, seeds close together, small sized, and show uneven maturity. The ones on the right are shiny, plump and even in color. Notice also, the white area between cap and fruit on the strawberry in the upper right, as compared to the dark area on the strawberry on the left with the same area exposed.