

An acoustic trap developed by U.S. Department of Agriculture (USDA) scientists may offer an eco-friendly solution to control the pest that causes the devastating citrus greening disease.

The disease, also known as Huanglongbing (HLB), is transmitted through the Asian citrus psyllid and has already caused widespread damage in Florida.

Concern over the cost and long-term environmental impact of using insecticides to control psyllid populations in citrus-growing states has prompted an intensive search for alternative measures.

Agricultural Research Service (ARS) entomologist Richard Mankin has now designed an acoustic trap based on his experience investigating how insect pests use their sense of smell, sight or hearing to locate food and mates.

Mankin worked alongside University of Florida graduate students to decode the pest's signaling patterns and recreated them with electronics including a buzzer and a microphone, according to the ARS.

The organization said while many of the traps now used to control insects use pheromones to lure pests into traps, the acoustic trap mimics the wing-buzzing vibrations male and female psyllids used to locate and court one another in citrus trees.

In citrus trees, a male psyllid normally crawls to the female after it responds to the male's wing-buzzing vibrations.

In laboratory studies, however, the trap is also listening to this vibration, and it responds a tenth of a second or two before the female with a fake signal, luring the males into a nearby sticky trap.

Mankin's team is refining the trap for outdoor testing this summer.

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