

POPULAR SCIENCE

This lanternfly-egg-hunting robot could mean fewer bugs to squish

It's good to get them before they can fly away.

BY CHARLOTTE HU | PUBLISHED JUN 10, 2023

It's that time of the year again. The invasive, crop-damaging spotted lanternflies are emerging, as they typically do in spring-time. You may already start to see some of the polka-dotted nymphs out and about. As with the adult lanternflies, the advice from experts is to kill them on sight.

But another way to prevent these pests from spreading is to scrape off and kill the egg masses that these bugs leave on wood, vehicles, and furniture. Inspecting every tree and every surface for lanternfly eggs is no fun task. That's why a team of undergraduate engineering students at Carnegie Mellon University programmed a robot, called TartanPest, to do it.

TartanPest was designed as a part of the Farm Robotics Challenge, where teams of students had to design a creative add-on to the preexisting tractor-like farm-ing robot in order to tackle a problem in the food and agriculture industry.

Since lanternflies voraciously munch on a variety of economically important crops like hardwoods, ornamentals, and grapevines, getting rid of them before they become a problem can



TartanPest scrubbing an egg mass off a tree.

Carnegie Mellon University

save farms from potential damage. The solution from the team at Carnegie Mellon is a robot arm with a machine learning-powered vision system for spotting the egg masses, and an attachment that can brush them off.

The machine learning model was trained with 700 images of lanternfly egg masses from the platform iNaturalist, where citizen scientists can upload photos of plant or wildlife observations they have made.

Of course, TartanPest is not the first robot that helps humans not get their hands dirty (from murdering bugs). Making robots that can find and kill harmful pests on farms has long been a topic of discussion among engineers, as these could be key to decreasing the amount of pesticides used. Beyond crops, bug-terminating robots could have a place in households, too.

But ask yourself this if you're squeamish about robots designed to kill bugs: Would you rather have laser wielding robots snuff out cockroaches and mosquitoes, or would you prefer to suck it up and squish them yourself?



TartanPest in the wild.

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