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Tick-Busting Robot Nabs Pests

Prachi Patel-Predd 02.28.06 | 2:00 AM



Sandy Allen, a scientist with the University of Florida's Institute of Food and Agricultural Sciences, examines a large African tortoise tick found on an imported reptile.

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Spring is around the corner, which means kids will soon be out playing in the yard and parents will start worrying about ticks spreading Lyme disease. But never fear, a robot in a tick-snuffing denim skirt is here.

A tick-exterminator designed by three engineering undergrads at the [Virginia Military Institute](#) scours yards for ticks and nabs them with its pesticide-laced denim skirt.

"(We) did a test on a field where we put the robot down and let it do its thing," says Justin Woulfe, a student on the team. "In eight hours it picked up 72 out of 75 ticks" the students had let loose in the field.

The students have yet to give the rover a clever name like The Tickinator or Tickbot. It's the size of a large toy truck and similarly rolls around on four wheels and it stops at a station to recharge itself every time it makes a lap. Magnetic sensors inside a perforated tube, which emits carbon dioxide to attract ticks, placed on the lawn guide the robot.

The robot's denim skirt drags behind the rover picking up ticks. Ticks cling to denim naturally, Woulfe says; it's the best material for the job and is used routinely in research. The fabric is soaked in a tick-killing chemical called permethrin.

Using a robot to control ticks is new to Joseph Piesman, chief of the [Centers for Disease Control and Prevention's](#) Lyme disease vector section. He wouldn't comment on the robot specifically, but says he appreciates any new efforts in tick control.

"Novel approaches in general are to be encouraged," he says. "We need new tools that people will use to combat tick-borne diseases."

Most people simply avoid tick-infested areas or wear long sleeves to steer clear of the pests. Another common method is spraying tick-specific pesticides, or acaricides, Piesman says, "but only about a quarter of residents use acaricides in areas endemic for Lyme disease."

One CDC study on tick-borne diseases found that homeowners avoid spraying because of potential environmental harm because people have to stay out of the yard for two days after it has been doused with chemicals.

Instead of spraying acaricides two or three times a summer, Woulfe says the robot would run just once over a period of several days. It uses a small amount of permethrin and leaves no residue, he said. Plus, it can also kill carpenter ants, mosquitos and other pests by changing the chemicals.

At \$500 a pop, Woulfe doesn't expect consumers to purchase the machine. But pesticide companies who invest in it could charge less for running the robot -- about \$75 per acre -- than they now charge for spraying, which costs about \$85 per year. Woulfe and his fellow students just need a company to build some robots.

"If we had a company that could come together and build 500 of them," Woulfe says, "I'm pretty sure we could find enough interest to sell them."