It must be mosquito season. Not only because I get bit every time I go outside in the evening, but also because there is a new line of mosquito control services available to homeowners. The latest weapons are called mosquito-control timed spray systems. They include insecticide spray nozzles connected by tubing that is installed around fence lines or the perimeter of the house, or placed one specific location. The tubing is connected to a reservoir of insecticide that is regulated and released by a timer.

Do they work? The manufacturers claim that they do; however, University of Florida specialists, the American Mosquito Control Association and other professionals have concerns. Entomologists and insect-control professionals know from experience that a lack of understanding of pest behavior often leads to ineffective control measures and unnecessary exposure of the environment and nontarget organisms to a pesticide. Insect control, especially mosquito control, is a science. There are 77 species of mosquitoes in Florida. Species exhibit different behaviors and require different control methods.

According to the Florida Medical Entomology Laboratory, surveillance of mosquito populations should include:

- Proper identification of the pest species
- Considerations of the behavior of various species
- Population density monitoring: landing rates, trap counts, larval development
- Weather monitoring

Why is surveillance and precise identification of target species important? Effective and efficient control programs properly respond to mosquito density. It is inappropriate and unnecessary to apply an insecticide to kill adult mosquitoes if there are no adults present at the time of the application, entomologists say.

Proper timing of application is also critical. Any system that relies on time released spraying can lead to inappropriate application, which can contribute to insecticide tolerance and resistance in insects and may contribute to environmental problems.

Most of the mosquito-control timed spray systems use either a pyrethrum or pyrethroid. While these insecticides are EPA-approved for use under certain conditions, the mosquito-control timed-release systems have not been EPA-approved for residential use.

On many EPA labels under the "Precautionary Statements" there is this warning: "Harmful if swallowed or inhaled. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing." Timed misting systems can easily violate these label requirements. Because these systems are set to spray automatically, it is likely that passers-by, birds, pets and children will be unwittingly sprayed.

The indiscriminate use of pesticides can also kill off beneficial insects such as spiders, honeybees, butterflies, lacewings, praying mantis and ladybugs. In addition, lawn-care companies are reporting to the professional mosquito control Web site, MosquitoZone.com, that certain ornamental plants are are irreversibly damaged by the pesticides in the misting systems.

Mosquito-control misting systems or any other systems that simply release insecticides on a timer, whether it is a barrier application or to kill flying mosquitoes, lack the human element that is critical for effective and environmentally proper mosquito control. It is against good mosquito-control practices to advocate automatic release of pesticides by timer, according to the University of Florida's Institute of Food and Agricultural Sciences experts.

Effective, efficient and environmentally proper mosquito-control organizations, such as our own county mosquito-
control department, apply pesticide based on surveillance to ensure that the application will have maximum effect on mosquitoes with minimal effect on the environment. Timed release of pesticides into the environment with no biological surveillance or human decision making is not a part of a responsible mosquito-control application.

Therefore, it is against good mosquito-control practices to advocate automatic release of pesticides simply, based on a timer, according to officials with the Florida Medical Entomology Laboratory in Vero Beach.

Information for this article was obtained from the UF/IFAS publication "Mosquito Control Devices and Services for Florida Homeowners" and from IPM

For more information on the control of mosquitoes or for answers to other gardening questions, contact the Osceola County master gardeners at 321-697-3000. They are available to take your call Monday through Friday from 10 a.m. to 2 p.m.

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