MISSISSIPPI STATE UNIVERSITY EXTENSION

Integrated Mosquito Management

Mosquitoes are blood-sucking insects that breed in stagnant water. They are notorious for transmitting several diseases, such as malaria and dengue. Mosquitoes are best controlled by combining various pest control methods. This "integrated" approach saves money by reducing pesticide use, and it also helps protect people and the environment from unnecessary pesticide exposure.

Integrated Mosquito Management (IMM)

The goals of an integrated approach to mosquito control are to:

- Prevent or lower the numbers of human and animal cases of mosquito-borne diseases by lowering numbers of pathogen-infected mosquitoes.
- Reduce mosquito-human or mosquito-animal contact by applying pesticides, using personal protective equipment (PPE), manipulating landscapes, using repellents, or combining all these methods to efficiently lower the probability of human or animal encounters with disease-infected or nuisance mosquitoes.
- Protect the environment and nontarget insects from unnecessary pesticide use, but at the same time, control mosquito populations.

How to Implement IMM

Prioritize! The order in which different aspects of integrated mosquito management are implemented is very important. These are the five basic steps you should take to protect people and animals from mosquitoes:

Education

Control efforts should always begin with education! The community should be actively involved in educating itself about mosquitoes, where they breed, how people can prevent mosquito breeding, and personal protection measures available against them. Educate people about emptying all containers of standing water, using PPE such as long sleeves and long pants, applying repellents such as DEET, and avoiding going outdoors at dawn or dusk when mosquitoes are most active.

Surveillance and Sampling

Surveillance (Figure 1) means collecting and testing adult and immature mosquitoes and assessing numbers of species and breeding habitats. Surveillance is an important component of community mosquito control because it informs mosquito control personnel when and where a problem requires intervention, and when use of pesticides around homes, people, animals, and the environment is justified.

Figure 1. Checking for mosquito larvae in standing water. Photo by the American Mosquito Control Association.

Source Reduction

Source reduction (Figure 2) simply means finding and eliminating places where mosquitoes breed. Breeding sites might be anything from old cans and tires around the house to low spots in the yard or poorly flowing ditches.

Larviciding

Larviciding means placing chemicals or other products designed to kill larval-stage mosquitoes into water sources. Some larvicides are relatively safe for people, pets, and the environment, while others are traditional chemical pesticides that must be used with caution. Always read the label instructions and follow them regardless of which product you are using.

Adulticiding

Adulticiding means spraying a fine mist or "fog" into the air to kill adult mosquitoes. These days, most adulticiding is carried out with ultra-low-volume machines mounted on trucks, which apply only about one to six ounces of pesticide per acre. If done properly, adulticiding is generally safe for people and the environment.

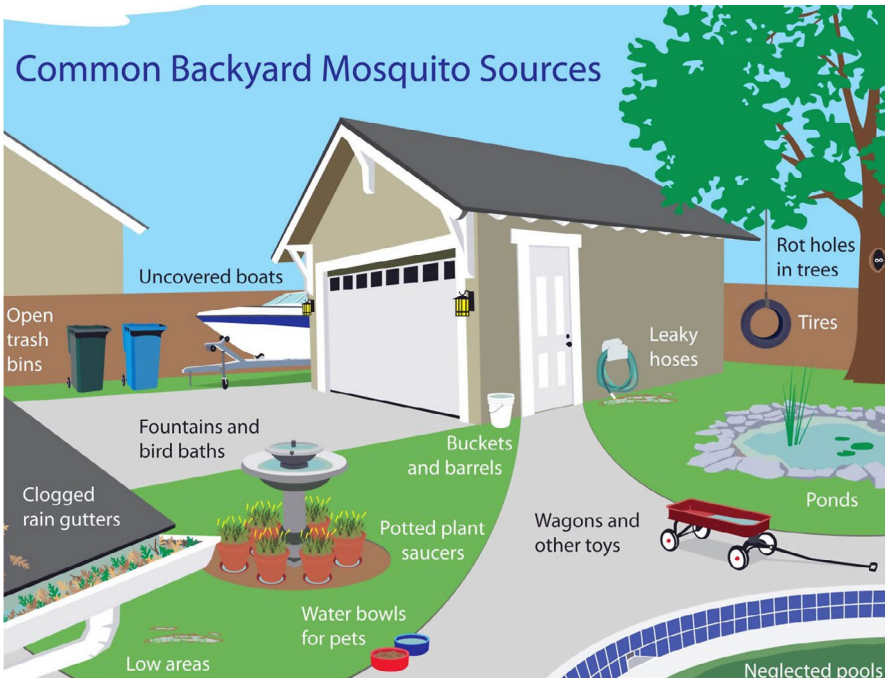

Figure 2. Common backyard mosquito breeding sites. Graphic by the City of Southlake, Texas.

For More Information

American Mosquito Control Association

Centers for Disease Control and Prevention: Mosquito Control/Integrated Pest Management

Center for Food Security and Public Health, Iowa State University

Mississippi Department of Health

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