

# 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.

**Surveillance and Sampling** 

mosquitoes are most active.

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.

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

# **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 diseaseinfected 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



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.

# Common Backyard Mosquito Sources Rot holes in trees Open trash bins Fountains and bird baths Buckets and barrels Clogged rain gutters Water bowls for pets

Figure 2. Common backyard mosquito breeding sites. Graphic by the <u>City</u> 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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**Publication 3826** (POD-08-22)

By **Jerome Goddard**, PhD, Extension Professor, Agricultural Science and Plant Protection; and Kristine T. Edwards, PhD, former Senior Extension Associate, Agricultural Science and Plant Protection.



Produced by Agricultural Communications.

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