Pesticides Used in Mosquito Control

Q. What are “larvicides” and “adulticides”?
A. Larvicides are products used to kill immature mosquitoes. They can be either biological (such as toxin from specific bacteria that is lethal to mosquito larvae but not to other organisms) or chemical products, such as insect growth regulators, surface films, or organophosphates. Larvicides are applied directly to water sources that hold mosquito eggs or larvae. When used well, larvicides can help to reduce the overall mosquito population by limiting the number of new mosquitoes that are produced.

Adulticides are products used to kill adult mosquitoes. Adulticides can be applied from hand-held sprayers, truck-mounted sprayers or using airplanes. Adulticides, when used well, can have an immediate impact to reduce the number of adult mosquitoes in an area, with the goal of reducing the number of mosquitoes that can bite people and possibly transmit West Nile virus.

Larvicides and adulticides used by the Sacramento-Yolo Mosquito & Vector Control District are regulated by the US Environmental Protection Agency.

Q. When does the Sacramento-Yolo MVCD use chemical mosquito control?
A. SYMVCD control measures, including the decision to use chemical adulticides (pesticides used to treat adult mosquitoes) are based on surveillance data and the risk of human disease. For a better understanding of the District’s surveillance and control programs, you may download their Mosquito Management Plan on FightTheBite.net.

Q. What is CDC’s position regarding the use of chemical mosquito control?
A. Chemical control measures are one part of a comprehensive and integrated mosquito management program. An integrated program is the most effective way to prevent and control mosquito-borne disease. An integrated mosquito management program should include several components: (1) surveillance (monitoring levels of mosquito activity, and where virus transmission is occurring), (2) reduction of mosquito breeding sites, (3) community outreach and public education, and (4) the ability to use chemical and biological methods to control both mosquito larvae and adult mosquitoes. CDC’s Revised Guidelines for Surveillance, Prevention, and Control of West Nile Virus in the US, 2003 [254 KB, 77 pp].) provides detailed guidance about the use of control measures, including suggestions for a phased response and the actions that are possible at different levels of virus activity.

Q. Are pesticides harmful to people?
A. Effect on human health is one of the primary factors considered in regulation of pesticides. Pesticides that can be used for mosquito control have been judged by the EPA not to pose an unreasonable risk to human health. People who are concerned about exposure to a pesticide, such as those with chemical sensitivity or breathing conditions such as asthma can reduce their potential for exposure by staying indoors during the application period (typically nighttime).
For more information on pesticides and health, consult the US Environmental Protection Agency, which oversees the registration of these chemicals. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, 1-800-858-7378 or online.

Q. How does pesticide spraying affect the environment?
A. A great deal of research must be done before pesticides can be used in the environment. The best source for finding out about the pesticides used in your area, and their effect on specific types of wildlife, is with the US Environmental Protection Agency, which oversees the registration of these products. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, 1-800-858-7378 or online.

Q. What training is required for workers who apply pesticides?
A. Each state has mandated training and experience requirements that must be met before an individual can commercially apply pesticides. In California, for example, California State Health and Safety Code requires that every employee of a mosquito abatement or vector control district who handles, applies, or supervises the use of any pesticide for public health purposes be certified by the Vector-Borne Disease Section of the California Department of Health Services (DHS) as a Certified Vector Control Technician, and upon certification, must also meet established continuing education hours. In addition, these applicators must follow the instructions and precautions that are printed on the pes ticide label. All pesticide products are required to have a label which provides information, including instructions on how to apply the pesticide and precautions to be taken to prevent health and environmental effects. All labels are required to be approved by U.S. EPA.

Q. Where can I get information regarding the safety of specific pesticides?
A. Questions concerning specific pesticides can be directed to the U.S. Environmental Protection Agency, as this agency has responsibility for registration of pesticides. Many issues are addressed on the EPA's Mosquito Control Web site.

The National Pesticide Information Center (NPIC) provides pesticide information and questions about the impact of pesticide use on human health. NPIC is cooperatively sponsored by Oregon State University and the U.S. Environmental Protection Agency. NPIC can be reached online or toll-free: 1-800-858-7378.

Q. What type of pesticides are being used by the Sacramento-Yolo MVCD?
A. For larval mosquito control, SYMVCD typically uses *Bacillus thuringensis israelensis* (*Bti*), a bacteria, or Methoprene, an insect growth regulator which keeps the immature mosquito from becoming a flying adult. Both products are host-specific and will not harm other aquatic organisms. For adult mosquito control, SYMVCD uses Pyrethrins in most situations. Pyrethrins are insecticides derived from chrysanthemums. They must be applied under favorable weather conditions to reach the target area.

Q. Are these pesticides harmful to me and my family?
A. At the rates SYMVCD applies these pesticides (2/3 oz./acre), they are not harmful to you or your family; however, it is always a good idea to remain indoors and keep windows and doors closed during applications.

Q. Can these pesticides harm my cats or dogs?
A. At the application rates SYMVCD uses, they will not harm your cats or dogs, and in fact, this is the same material that is used to treat cats and dogs for fleas and ticks.

Q. Will the spray contaminate my swimming pool water?
A. Again, at the application rates SYMVCD uses, your swimming pool water will not be contaminated. Also, applications are made in the very early hours or late evening hours, and pyrethrins break down rapidly in sunlight.

Q. What should I do if I think that I am having health problems because of pesticides used in my area?
A. If you are experiencing health problems **for any reason** it is important to see your health care provider promptly.