

**Attached is Additional Information
for
Agenda Item #16**

**Consideration of the Current "Mosquito Control
No-Spray Program"**

Meeting of Tuesday, November 10, 2009

This document distributed November 4, 2009

BOARD OF COUNTY COMMISSIONERS

MEMORANDUM

DATE: November 4, 2009

TO: Honorable Chairman and Members of the Board

FROM: Parwez Alam, County Administrator
Alan Rosenzweig, Assistant County Administrator
Tony Park, P.E., Director of Public Works

SUBJECT: Agenda Item #16 - Consideration of the Current "Mosquito Control No-Spray Program"

The State's Department of Health has provided additional information for the Board's review regarding Agenda Item #16.

The additional information includes:

1. Chapter 388, Florida Statutes Declaration of Legislative Intent
2. Information produced by the U. S. Environmental Protection Agency
3. An Anvil Information Sheet

Chapter 388, Florida Statutes – Legislative Intent

388.0101 Declaration of legislative intent.--It is declared to be the public policy of this state to achieve and maintain such levels of arthropod control as will protect human health and safety and foster the quality of life of the people, promote the economic development of the state, and facilitate the enjoyment of its natural attractions by reducing the number of pestiferous and disease-carrying arthropods. It is further declared to be the policy of the state to conduct arthropod control in a manner consistent with protection of the environmental and ecological integrity of all lands and waters throughout the state.

History.--s. 1, ch. 86-203.



Pesticides: Mosquito Control

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Permethrin, Resmethrin, Sumithrin: Synthetic Pyrethroids For Mosquito Control

Current as of: April 17, 2002

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Questions on Pesticides?

- National Pesticide Information Center (NPIC)
1-800-858-7378

[EXIT Disclaimer](#)

The Environmental Protection Agency (EPA) evaluates and registers (licenses) pesticides to ensure that they can be used safely. These pesticides include products used in the mosquito control programs that states and communities have established. To evaluate any pesticide, EPA assesses a wide variety of tests to determine whether a pesticide has the potential to cause adverse effects on humans, wildlife, fish and plants, including endangered species and non-target organisms.

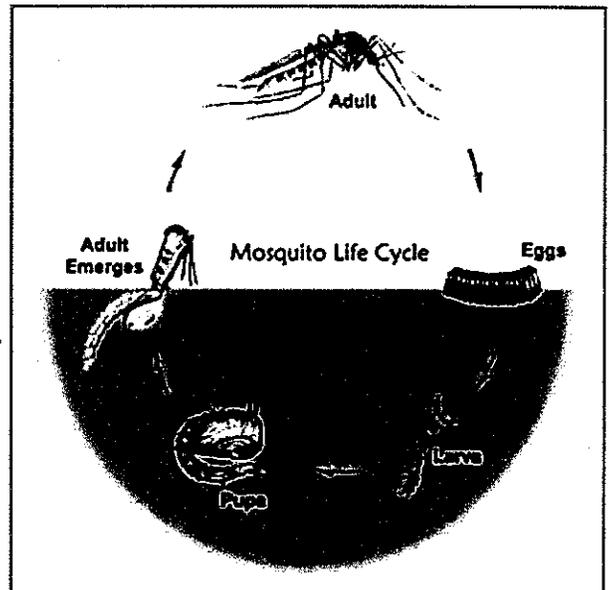
Officials responsible for mosquito control programs make decisions to use pesticides based on an evaluation of the risks to the general public from diseases transmitted by mosquitoes or on an evaluation of the nuisance level that communities can tolerate from a mosquito infestation. Based on surveillance and monitoring, mosquito control officials select specific pesticides and other control measures that best suit local conditions in order to achieve effective control of mosquitoes with the least impact on human health and the environment. It is especially important to conduct effective mosquito prevention programs by eliminating breeding habitats or applying pesticides to control the early life stages of the mosquito. Prevention programs, such as elimination of any standing water that could serve as a breeding site, help reduce the adult mosquito population and the need to apply other pesticides for adult mosquito control. Since no pesticide can be considered 100 percent safe, pesticide applicators and the general public should always exercise care and follow specified safety precautions during use to reduce risks. This fact sheet provides basic information on larvicides, a type of pesticide used in mosquito control programs.

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What is the Mosquito Life Cycle?

The mosquito goes through four distinct stages during its life cycle:

- egg** - hatches when exposed to water;
- larva** - (plural - larvae) lives in the water; molts several times; most species surface to breathe air;
- pupa** - (plural - pupae) does not feed; stage just prior to emerging as adult;
- adult** - flies short time after emerging and after its body parts have hardened.



Leon County Mosquito Control, Tallahassee

What are Synthetic Pyrethroids?

Pyrethroids are synthetic chemical insecticides that act in a similar manner to pyrethrins, which are derived from chrysanthemum flowers. Pyrethroids are widely used for controlling various insects. **Permethrin, resmethrin, and sumithrin** are synthetic pyrethroids commonly used in mosquito control programs to kill **adult mosquitoes**.

- **Permethrin** has been registered by EPA since 1977. It is currently registered and sold in a number of products such as household insect foggers and sprays, tick and flea sprays for yards, flea dips and sprays for cats and dogs, termite treatments, agricultural and livestock products, and mosquito abatement products.
- **Resmethrin** has been registered by EPA since 1971 and is used to control flying and crawling insects in the home, lawn, garden, and industrial sites. It can also be used to control insects on ornamental plants (outdoor and greenhouse use), on pets and horses, and as a mosquitocide. Because of its toxicity to fish, resmethrin is a Restricted Use Pesticide (RUP) that is available for use only by certified pesticide applicators or persons under their direct supervision.
- **Sumithrin** has been registered by EPA since 1975 and is used to control adult mosquitoes and as an insecticide in transport vehicles such as aircraft, ships, railroad cars, and truck trailers. It is also used as an insecticide and miticide in commercial, industrial, and institutional nonfood areas, in homes and gardens, in greenhouses, and in pet quarters and on pets.

How are Synthetic Pyrethroids Used in Adult Mosquito Control?

Most pyrethroid mosquito control products can be applied only by public health officials and trained personnel of mosquito control districts. Mosquito control professionals apply pyrethroids as an ultra low volume (ULV) spray. ULV sprayers dispense very fine aerosol droplets that stay aloft and kill adult mosquitoes on contact. Pyrethroids used in mosquito control are typically mixed with a synergist compound, such as piperonyl butoxide, which enhances the effectiveness of the active ingredient. The product is often diluted in water or oil and applied at rates less than 1/100th of a pound of active ingredient or less than 4 fluid ounces of mixed formulation per acre.

Do Pyrethroids Pose Risks to Human Health?

Pyrethroids can be used for public health mosquito control programs without posing unreasonable risks to human health when applied according to the label. Pyrethroids are considered to pose slight risks of acute toxicity to humans, but at high doses, pyrethroids can affect the nervous system.

Do Pyrethroids Pose Risks to Wildlife or the Environment?

Pyrethroids used in mosquito control programs do not pose unreasonable risks to wildlife or the environment. Pyrethroids, when applied at mosquito control rates, are low in toxicity to mammals, and are practically nontoxic to birds. Mosquito control formulations of permethrin break down in the environment, and high temperatures and sunlight accelerate this process. However, pyrethroids are toxic to fish and to bees. For that reason, EPA has established specific precautions on the label to reduce such risks, including restrictions that prohibit the direct application of products to open water or within 100 feet of lakes, streams, rivers or bays.

What is The Current Regulatory Status of Pyrethroids?

As part of its responsibility to reassess all pesticides registered before 1984, EPA has given highest priority to reviewing more acutely toxic pesticides such as organophosphates and carbamates. Organophosphates are currently under review. Comprehensive reviews of the synthetic pyrethroids are scheduled for approximately 2004.

Where Can I Get More Information About Synthetic Pyrethroids and Mosquito Control?

For more information about mosquito control in your area, contact your state or local health department. Other resources for information on public health, disease control, and mosquito control include the following:

Centers for Disease Control and Prevention (CDC) [\[EXIT Disclaimer\]](#)

Tel: 970-221-6400

Fax: 970-221-6476

E-mail: dvbid@cdc.gov

Web site: <http://www.cdc.gov>

National Pesticide Information Center (NPIC) [\[EXIT Disclaimer\]](#)

Tel: 1-800-858-7378

E-mail: npic@ace.orst.edu

Web site: <http://npic.orst.edu/>

West Nile Virus Resource Guide: <http://npic.orst.edu/wnv/>

American Mosquito Control Association (AMCA) [\[EXIT Disclaimer\]](#)

Joseph M. Conlon, Technical Advisor

Tel/Fax: (904) 215-3008

E-mail: amca@earthlink.com

For more information regarding public health mosquito control or strategies for controlling mosquitoes around your home, [contact EPA headquarters](#) or one of the 10 [regional offices](#).

Other Helpful EPA Publications

- [Mosquitoes: How to Control Them](#) (735-F-02-005)
- [Malathion for Mosquito Control](#) (735-F-02-006)
- [Larvicides for Mosquito Control](#) (735-F-02-007)
- [Naled for Mosquito Control](#) (735-F-02-008)
- [Synthetic Pyrethroids for Mosquito Control](#) (735-F-02-009)

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Last updated on Thursday, April 9th, 2009.

<http://www.epa.gov/pesticides/health/mosquitoes/pyrethroids4mosquitoes.htm>

[Print As-Is](#)

New York State Department of Health
Anvil Information Sheet

1. What is Anvil?

Anvil is a pesticide product that is used to control mosquitoes in outdoor residential and recreational areas. It contains sumithrin, piperonyl butoxide and petroleum solvents. Sumithrin is a synthetic pesticide similar to a natural pesticide (pyrethrum) produced by chrysanthemum flowers. Piperonyl butoxide does not directly kill insects on its own but acts to increase the ability of sumithrin to kill insects. Other pesticide products containing these ingredients are used indoors and on pets to control insects such as fleas, ticks and ants.

2. Is Anvil harmful to my health?

Since Anvil is being applied at very low concentration rates, it is unlikely that anyone will develop symptoms as a result of contact with the insecticide used in the spraying operations. Anvil is not very toxic following short-term contact and is not very irritating to the skin or eyes.

The effects of exposure to any chemical depends primarily on the amount of the chemical which a person contacts and the amount of time that the person is in contact with that chemical. The person's age, sex, genetics, life style and general health may also influence the possible health effects. Therefore, some sensitive individuals may experience health effects.

3. Are some people more likely than others to experience symptoms after they have been in contact with Anvil?

Most people would not be expected to experience any symptoms. However, there could be some individuals who may be particularly sensitive to pesticides or petroleum solvents, including those in the Anvil product, and could possibly experience short-term effects such as eye, skin, nose or throat irritation or breathing problems. These are less likely to occur if practical and simple precautions are taken to minimize contact with the pesticide. Such precautions include staying indoors, closing windows and doors and turning fans and air conditioners off during the spraying.

4. If I'm pregnant, can the spraying affect this pregnancy or harm my baby?

Neither sumithrin nor piperonyl butoxide are likely to affect pregnancy outcomes in people as a result of spraying. Although some effects occurred in laboratory animals that were given large amounts of either sumithrin or piperonyl butoxide, these amounts far exceeded the amounts that individuals are likely to contact from the spraying with Anvil.

5. Should I be concerned about cancer because of the spraying program?

The available information does not suggest that Anvil is likely to cause cancer if people are exposed during or following the spraying program. Both sumithrin and piperonyl butoxide were tested in laboratory animals at high doses for their entire lifetimes. Although the studies have some limitations, the data are not sufficient to show that Anvil will cause cancer in humans.

6. Can pets go outside during the spraying?

If you want to reduce your pets' exposure, keep them inside during the spraying. As mentioned above, products containing sumithrin and piperonyl butoxide can be applied directly on pets to control ticks and fleas.

7. Should I be concerned about my private swimming pool?

Anvil breaks down fairly quickly in water and in sunlight. If possible, you may want to cover your pool before the spraying occurs. However, given the small concentrations of Anvil being sprayed, no special precautions or waiting periods are recommended for swimming pools.

8. What can I do to reduce my exposure to the insecticide?

The chance of experiencing any health effects from the spraying is quite low. As with any pesticide, you may want to reduce or eliminate exposures that are not necessary. The following are some added precautions that you can take:

- If possible, remain inside whenever spraying takes place.
- Keep children inside during spraying and away from playgrounds and playing fields for about 1 hour after spraying.
- Close windows and doors and turn off your air conditioning (or set it to circulate indoor air) before spraying begins.
- If you have to remain outside, avoid eye contact with the spray. If you get Anvil spray in your eyes, immediately rinse them with water or eye drops.
- Wash exposed skin surfaces with soap and water if you come in contact with Anvil spray.
- Rinse homegrown fruits and vegetables thoroughly with water before cooking or eating.
- Cover outdoor tables and play equipment or rinse them off with soap and water after they have been sprayed.
- Bring laundry and toys inside before spraying begins (wash with soap and water if exposed to Anvil during spraying).
- Bring pets inside and cover ornamental fishponds to avoid direct exposure.

9. Where can I get more information on Anvil?

If you have additional questions about Anvil or the health effects from spraying, contact the New York State Department of Health toll-free Environmental Health Information Line at 1-800-458-1158, extension 27530.