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Frequently Asked Questions about Permethrin

What is permethrin?

Permethrin is a pyrethroid insecticide that is similar to the natural insecticide, pyrethrum. Pyrethrum is found in chrysanthemums. Permethrin can kill a broad range of pests, such as fleas, ticks, cockroaches, flies, and mosquitoes. Products with permethrin commonly contain piperonyl butoxide (PBO). The PBO increases the permethrin's ability to control insects. Permethrin and other pyrethroids work by overexciting the nervous system of insects, eventually causing the insect to die.

Where, when and how much permethrin may be applied?

Mosquito control programs carried out or guided by state or local agencies may apply permethrin from backpack sprayers, or sprayers mounted to trucks, or aircraft. These programs apply permethrin as an ultra-low volume (ULV) spray. ULV sprayers put out very fine droplets that are small enough to stay airborne. Permethrin kills mosquitoes when they contact the droplets. The small droplet size improves the insect control, and also decreases the amount that may settle on surfaces where someone may contact it. ULV sprayers use small amounts of permethrin to treat large areas.

Why has the U.S. Environmental Protection Agency (EPA) reviewed the use of permethrin?

The EPA has carried out "re-registration" reviews on all pesticides registered before 1984. The program was started to review older chemicals based on the latest environmental and toxicity data. The intent of the re-registration program was to make sure that the regulation of a pesticide stands up to today's stricter standards. Under this program, pesticide makers must submit the latest data and update the safety data to keep the registration current. This process makes sure that the product can be safely used. EPA continues to review pesticides on a routine basis.

What happens to permethrin in the environment?

Permethrin can stay a rather long time in soil and sediment, but with time, microbes and sunlight break it down. In lakes and other types of surface water, the organic matter in the water and sediment adsorbs permethrin within hours. Very low levels of permethrin stay in water.

What are the potential human health effects of permethrin exposure?

At the levels used in mosquito control, no harm to human health is expected. According to EPA estimates, the amount used in mosquito control is much less than the amount that could harm people.

At levels far higher than those used to control mosquitoes, permethrin can cause headaches, dizziness, nausea, vomiting, shortness of breath, or difficulty breathing. Very high doses may lead to loss of consciousness. Permethrin may make the skin and eyes redden, itch, or sting. However, the small amount used in spraying is not likely to be irritating.

Does permethrin pose a cancer risk?

Based on studies in laboratory animals, permethrin could possibly cause cancer in humans. However, the cancer occurred in animals only after being treated with very high levels of permethrin over very long periods of time. Because mosquito control only presents a short-term exposure to very small amounts of permethrin, the EPA has concluded that its use to control mosquitoes would not present a cancer risk.

What does the Florida Department of Health (DOH) suggest to protect health?

The surest way to prevent harm from pesticides is to avoid coming into contact with them. In most cases, it is not essential or practical to leave an area being sprayed. Instead, you can reduce or prevent exposure by staying indoors. Even so, being outside during spraying has very little chance to cause any harm to health.

What can I do to reduce exposure to pesticides like permethrin during spraying?

EPA has evaluated permethrin in this use and concluded that permethrin poses little risk to human health when used according to the label. Also, a number of common sense steps can help reduce possible contact with pesticides during spraying:

- Look for spraying notices in the newspapers. Stay tuned for radio and TV announcements.
- If you have to stay outdoors, try to keep the spray out of your eyes. If you get it in your eyes, rinse them right away with water or eye drops.
- If you must go outside during spraying, you can reduce contact by wearing clothing that limits skin contact with the spray.
- Wash exposed skin with soap and water, if you come in contact with the spray.
- Wash any fruits and vegetables that were outside during spraying with water before storing, cooking or eating.
- Talk to your doctor if you have major health concerns about the spraying.

What if my child puts fingers or unwashed toys in his or her mouth while playing outdoors?

EPA concluded that the amount of permethrin that contacts solid surfaces is well below any amount that could cause any harm to health.

Will permethrin harm my pets?

The amount of permethrin that enters the body of dogs, cats, or other animals from spraying is very small. It is not likely to harm pets, even if they are outside during spraying. To further reduce any risk of harm to your pet's health, you can take the same safety steps as for humans. Permethrin is not very toxic to mammals, so it is not likely to harm pets such as dogs or cats when used according to the label.

Does permethrin pose risks to livestock?

Permethrin is not likely to harm the health of livestock when used for mosquito control according to the label.

Will permethrin affect my fishpond?

Permethrin can be toxic to fish, but the amount likely to enter an outdoor fishpond or any other water body after spraying for mosquito control is much lower than that shown to be toxic to fish. If you wish to reduce exposure, you can cover your fishponds with a tarp before spraying. Do not leave tarps on long enough to cause overheating or a decrease in oxygen. Some people may prefer to bring their fish to a tank inside.

Can I swim in my pool after the spraying of permethrin?

Since permethrin droplets are designed to stay airborne for an extended period, little permethrin is expected to settle in your pool. Also, the water in the pool dilutes and quickly breaks down any permethrin that might enter the water. If you choose, you can cover your pool before the spraying occurs. You do not need to take special steps or wait before you can use your pool again.

What effect does permethrin have on wildlife?

Permethrin used in mosquito control programs does not pose high risks to wildlife or the environment. While permethrin does stay in the environment for a while, it is not very toxic to birds and mammals. The small amount needed for mosquito control is not known to cause acute or chronic toxicity to fish. EPA has set certain safety steps on the label to reduce the risk to invertebrates that live in water from ongoing mosquito control spraying. Permethrin may be toxic to bees and other insects besides mosquitoes. However, it is most often sprayed in the early morning or evening hours when bees are not out searching for food, which reduces their chance of contact.

What can I do if I believe that permethrin might be making me sick?

If you are ill, you should call your doctor. You can also call your local county health department or call the DOH Bureau of Epidemiology, Pesticide Surveillance toll-free number at 1-800-606-5810. You can also call the Florida Poison Control Center at 1-800-222-1222

How do I get more information about permethrin?

You can get more information on the use of permethrin in mosquito control from the Florida DACS Bureau of Entomology and Pest Control by calling (850) 617-7997. You can also get more technical information about permethrin by calling the Florida DACS Bureau of Pesticides at (850) 617-7917.