11. Is additional information being reviewed for Scourge?

A substantial amount of information exists on both resmethrin and piperonyl butoxide. However, additional studies have been required by the US Environmental Protection Agency for these active ingredients to fill knowledge gaps as part of the agency's ongoing reregistration process for certain pesticides. Results from these studies are reviewed and will help determine how Scourge and other products containing these active ingredients may be used in the future.

12. Where can I get more information on Scourge?

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

State of New York
Department of Health

Information Sheet

Scourge and Mosquito Control

1. What is Scourge?

Scourge is a pesticide product that is used to control mosquitoes in outdoor residential and recreational areas. It contains resmethrin and piperonyl butoxide as active ingredients. Resmethrin is a man-made pyrethroid insecticide that can also be found in other pesticide products used indoors and on pets to control ticks and insects, such as fleas and ants. Piperonyl butoxide does not directly kill insects on its own, but acts to increase the ability of resmethrin to kill insects. These active ingredients are dissolved in a petroleum solvent. Petroleum solvents are similar to paint thinner or kerosene. Scourge may be applied as is or may be diluted with other petroleum-based products, such as mineral oil, before application.

Because pesticide products are inherently toxic, no pesticide exposure is risk free. The likelihood of experiencing adverse health effects from exposure to any pesticide, including Scourge, depends primarily on the amount of pesticide that a person contacts and the amount of time the person is in contact with that pesticide. In addition, a person's age, sex, genetic makeup, life style and/or general health characteristics can affect his or her likelihood of experiencing adverse health effects as a result of exposure to pesticides.

2. Is the spraying of Scourge harmful to my health or my family's health?

Short-term exposures to very high levels of pyrethroid pesticides similar to resmethrin can affect the nervous system, causing effects such as loss of coordination, tremors or tingling and numbness in areas of skin contact. Short-term exposure to high levels of petroleum solvents can cause irritation of the eye, skin, nose, throat or lung. Vomiting or central nervous system depression may occur if very high levels of petroleum solvents are ingested. There are no studies examining whether the use of Scourge to control mosquitoes has caused any long-term health effects in humans.

Scourge is applied at very low concentrations to control mosquitoes. It is unlikely that adverse health effects will occur as a result of this use for most people, but some individuals may experience health effects. For these reasons, individuals should consider taking common sense steps to minimize their exposure to Scourge if it is applied to control mosquitoes (see question #10).

3. Is Scourge an "endocrine disruptor"?

"Endocrine disruptors" are chemicals that interfere with endocrine system function. The endocrine system consists of glands that produce hormones that act together to guide development, growth, reproduction and behavior, and to maintain normal organ function. Our knowledge of the relationship between exposure and endocrine system effects is still developing. Some chemicals that act like the hormone estrogen (for example, DES) have been reported to cause long-term effects in mice born to mothers who ingested low levels during pregnancy. This area of research is the subject of intense scientific inquiry.

When added to cells growing in plastic dishes in a laboratory, high concentrations of resmethrin acted like an androgen (a class of naturally occurring hormones). This suggests that resmethrin may interfere with endocrine system function in animals. However, resmethrin showed the weakest androgen-like activity of seven pesticides tested and did not mimic testosterone (a natural androgen) activity in a different test. Although changes in thyroid hormone levels occurred in animals repeatedly exposed to some other pyrethroids, there are no specific studies examining whether or not resmethrin or the other components of Scourge interfere with endocrine system function in animals.

4. Are some people more likely than others to experience symptoms after they have been in contact with Scourge spray?

Most people would not be expected to experience any symptoms when Scourge is sprayed for mosquito control. However, there could be some individuals who may be particularly sensitive to one or more constituents of Scourge, and could possibly experience short-term effects such as eye, skin, nose or throat irritation or breathing problems. Children, in particular, may be at greater risk of experiencing adverse effects from the application of Scourge since they may have the potential for greater exposure than adults.

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

As with chemical exposures in general, pregnant women should take care to avoid exposure when practical, as the fetus may be vulnerable. Resmethrin and piperonyl butoxide are unlikely 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 resmethrin or piperonyl butoxide during pregnancy, these amounts far exceeded the amounts that individuals are likely to contact from the spraying with Scourge.

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

Resmethrin did not cause cancer in rats or mice when they were fed high levels for their lifetime. Experimental studies have reported that piperonyl butoxide causes liver tumors in rats and mice when they are fed high levels of piperonyl butoxide every day for a long period of time. The amount of piperonyl butoxide ingested by animals in these studies, however, far exceeds the amount humans might be exposed to as a result of the use of Scourge to control mosquitoes. Although uncertainties exist, available information indicates that piperonyl butoxide is unlikely to cause cancer in humans as a result of its use to control mosquitoes.

7. Should I be concerned about coming into contact with pesticides on surfaces after spraying (e.g. outdoor furniture, soil, grass, bushes?)

Some pesticide residues may be present on outdoor surfaces after spraying. Limited studies on other chemicals suggest the amount of pesticide transferred to skin

a) decreases with more time after spraying (and very little transfers 24 hours after spraying);

b) is less on dry skin compared to wet skin; and

c) is less from porous surfaces compared to non-porous ones.

Pesticides are degraded from surfaces more rapidly when exposed to sunlight and water. Although not necessary under most circumstances, if spraying has just occurred and surface contact is high (e.g. playing field sports), then exposure can be minimized by wearing long pants and sleeves and washing exposed skin. Normally, most people would not be expected to experience any symptoms from contact with outdoor surfaces after spraying. However, if you want to take extra steps with small babies, the infant could be placed on a blanket instead of grass if spraying has just occurred. In addition, some small toys, such as those that babies may place in their mouths, could be taken inside before spraying.

8. Can pets go outside during the spraying?

If possible, keep your pet inside during the spraying and for about 30 minutes afterwards to help minimize exposure. The amount of pesticide that a pet is likely to track into the house will depend on many of the same factors that were discussed in the previous question.

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

Scourge breaks down fairly quickly in water and in sunlight. No special precautions or waiting periods are needed for swimming pools. However, if you have a pool cover, you may wish to use it before spraying.

10. What can I do to reduce exposure to Scourge?

As with any pesticide, steps can be taken to help reduce possible exposures to Scourge before, during or after spraying.

Steps you should take:

- Children and pregnant women should take care to avoid exposure when practical.
- If possible, remain inside or avoid the area whenever spraying takes place and for about thirty minutes after spraying. That time period will greatly reduce the likelihood of your breathing pesticide in air.
- Close windows and doors and turn off window air-conditioning units or close their vents to circulate indoor air before spraying begins. Windows and air-conditioner vents can be reopened about 30 minutes after spraying.
- If you come in direct contact with Scourge spray, protect your eyes. If you get Scourge spray in your eyes, immediately rinse them with water. Wash exposed skin. Wash clothes that come in direct contact with spray separately from other laundry.
- Consult your health care provider if you think you are experiencing health effects from spraying.

Steps you may want to take:

- If spraying just occurred, minimize your contact with surfaces and wash skin that has come in contact with surfaces.
- Pick homegrown fruits and vegetables you expect to eat soon before spraying takes place. Rinse homegrown fruits and vegetables (in fact, all produce) thoroughly with water before cooking or eating.
- Cover outdoor tables and play equipment before spraying or wash them off with detergent and water after they have been sprayed.
- Bring laundry and small toys inside before spraying begins (wash with detergent and water if exposed to Scourge during spraying).
- Bring pet food and water dishes inside, and cover ornamental fishponds to avoid direct exposure.