OHIO DEPARTMENT OF HEALTH

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Pesticides and Environmental Protection Agency (EPA) approved Insect repellents are part of a more comprehensive program to control mosquitoes that transmit diseases such as Dengue, Zika Virus or West Nile. Avoiding or preventing bites can help prevent transmission of these vector-borne diseases. That can be done by using PA insect repellent, wearing long sleeves and pants when weather permits or staying inside during peak mosquito season.

What is a Pesticide?

A pesticide is any substance or mixture of substances used to prevent development of, repel, destroy, or kill a pest. And what is a pest? Pests are living organisms that bother, injure, or cause damage to buildings, plants, humans, and animals, including pets. Pests can be animals such as rats, mice, birds, and deer; or insects such as ticks, mites, snails, slugs, and nematodes. Many animal and insect pests carry a variety of disease organisms that are injurious to adults, children, and pets. Pests can also be plants such as weeds; or fungi such as mildews, blights, molds, and rusts. Finally, pests can be microorganisms such as bacteria and viruses.

The term pesticide refers to insecticides, herbicides, fungicides, and various other substances used to control pests. Some pesticides are classified as *Restricted Use* pesticides if there is reason to believe they could harm humans, livestock, wildlife, or the environment, even when used according to label directions. To apply these types of pesticides in Ohio, a person is required to have a pesticide applicator certification or be under the direct supervision of a certified applicator. All other pesticides are classified as *Unclassified/General Use* pesticides, and anyone can apply them according to label directions. Many household products are pesticides, including the following common products:

- Cockroach sprays and baits
- Insect repellents to repel mosquitoes and other biting insects
- Rat and other rodent poisons
- Flea and tick sprays, powders, and pet collars
- Kitchen, laundry, and bath disinfectants and sanitizers
- Products that kill mold and mildew
- Some lawn and garden products such as weed killers
- Some swimming pool chemicals

Pesticides are made up of one or more active ingredients (AI), and inert ingredients. The active ingredient(s) is the material that controls the pest. The inert ingredients are used to dilute the active ingredient and/or are substances to help the active ingredient target the pest.

Pesticides have a specific purpose in society. Pesticides are intended to:

- kill organisms that cause disease and threaten public health
- control insects, fungus, and weeds that damage crops
- control pests that damage homes and structures vital to public safety

Because people use pesticides to kill, prevent, repel, or in some way adversely affect some living organism (the pest), pesticides by their nature are toxic to some degree. Even the least-toxic products, and those that are natural or organic, can cause health problems if someone is exposed to enough of it.

People come into contact with pesticides in many ways, including:

- When pesticides are used in and around our homes and gardens
- When pesticides are used on our pets
- When we work with pesticides
- When pesticides are used in our communities or in our environment
- When pesticides are used on the food we eat

The risk of health problems depends not only on how toxic the ingredients are (Pesticide Ingredients), but also on the amount of exposure to the product. In addition, certain people like children, pregnant women and sick or aging populations may be more sensitive to the effects of pesticides than others.

If pesticides are being applied near you, try to find out some details about the application, such as where it is happening, how much area is being treated, and what is being applied. This will help you determine your risk. If you smell, taste or feel a pesticide, then you may have been exposed to it. In some cases, exposure can happen even if you do not smell or taste the pesticide.

Try to determine the route by which you might be exposed. It is important to consider the route of exposure, or how the pesticide may contact your body. The amount that actually enters the body may vary depending on pesticide and the route of exposure.

Some pesticides may move into the body very easily after an exposure, whereas others will not.
If you have been exposed to a pesticide, take note of the situation in which it happened. The length of time the exposure occurred and how much of the substance actually gets on or in the body are important details in understanding the risk. If the pesticide is low in toxicity and you had a very limited exposure, the risk is low. If the pesticide is very toxic and you had a large exposure to it, then the risk is higher.

Pesticide Regulation

Pesticides are regulated by the EPA under two major federal statutes—the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug, and Cosmetic Act (FFDCA). Under FIFRA, EPA registers pesticides for use in the United States and sets labeling and other regulatory requirements to prevent unreasonable adverse effects on human health and the environment.

Under FFDCA, the EPA establishes tolerances for pesticide residues in food to ensure the safety of the U.S. food supply. A tolerance is the amount of pesticide residue that can legally remain in or on each treated food commodity. In establishing tolerances, the EPA considers the toxicity of each pesticide, how much of the pesticide is applied, the frequency of application, and the amount of pesticide residue that remains in or on food. Regulators use a wide margin of safety to ensure that residues remaining in or on foods are many times lower than amounts that could actually cause adverse human health effects. Food producers and the EPA are committed to a safe food supply.

The Food Quality Protection Act (FQPA) of 1996 amended both the FIFRA and the FFDCA to establish a more consistent and protective regulatory scheme based on the best science available. In defining standards and tolerances, the FQPA uses "a reasonable certainty of no harm" as the single health-based standard, eliminating the

problem posed by multiple standards for pesticides in raw and processed foods. Further, the FQPA requires the EPA to add an additional tenfold safety factor for children unless data indicate that a reduced or no additional safety factor is needed.

The FQPA requires all existing pesticide tolerances to be reviewed within 10 years to make sure they meet the requirements of the new health-based safety standard. The EPA has given priority to reviewing the tolerances or exemptions that appear to pose the greatest risk to public health: organophosphates, carbamates, and probable human carcinogens.

If you are concerned about pesticide use in your community, there are several things you can do to reduce your risk of exposure:

- Stay out of public areas with signs, flags, or postings that indicate a pesticide application has recently taken place.
- Find out whether any prior notification laws exist in your area. Some states and local communities have neighbor, occupant, or school policies that require notification of residents before pesticide applications.
- Check with your local health department or vector control agency about community pesticide programs in your area. Often, information about community-wide pesticide applications (such as mosquito spraying) are published in local newspapers.

Ensuring Safety

Remember these important points to use repellents safely:

Applying the Product

- Read and follow the label directions to ensure proper use; be sure you understand how much to apply.
- Apply repellents only to exposed skin and/or clothing. Do not use under clothing.
- Do not apply near eyes and mouth, and apply sparingly around ears.
- When using sprays, do not spray directly into face; spray on hands first and then apply to face.
- Never use repellents over cuts, wounds, or irritated skin.
- Do not spray in enclosed areas.
- Avoid breathing a spray product.
- Do not use it near food.

Other Safety Tips

- Check the label to see if there are warnings about flammability. If so, do not use around open flames or lit cigarettes.
- After returning indoors, wash treated skin and clothes with soap and water.
- Do not use any product on pets or other animals unless the label clearly states it is for animals.
- Most insect repellents do not work against lice or fleas.
- Store insect repellents safely out of the reach of children, in a locked utility cabinet or garden shed.

Repellents and Children

We advise consumers to always read and follow label directions in using any pesticide product, including insect repellents.

Because children frequently put their hands in their eyes and mouths, EPA recommends that all repellent products have the following precautionary statements related to children on their labels:

- Do not allow children to handle this product, and **do not apply to children's hands**. When using on children, apply to your own hands and then put it on the child.
- After returning indoors, wash your child's treated skin and clothes with soap and water or bathe.
- Always store insect repellents safely out of the reach of children.

If you are concerned about using repellent products contact the National Pesticide Information Center (NPIC) or through their toll-free number, 1-800-858-7378.

Summary

Controlling pests in and around the home and garden is seemingly a never-ending problem. A wide array of pesticides has been developed for the homeowner; however, choosing to use them is a personal decision. If homeowners decide to use pesticides, they should follow an integrated pest management strategy. This program includes a full range of pest control methods, of which pesticides are just one component, rather than the principal defense against pests.

Generally, home pesticide products are safe if handled properly and according to the instructions on the product label. The best way to avoid the hazards of pesticides is to educate yourself about the product you are using and how to use it safely. The only way you can do this is to read the label. The pesticide label is a legal document, and misusing a pesticide product is a violation of the law. The attitude of the pesticide user is an important aspect in pesticide use safety.

Use common sense when using pesticides. Choose the correct pesticide and formulation. Take the proper precautions when mixing, applying, storing, and disposing of pesticides. Wear proper clothing and use safety equipment according to label instructions

Be aware of the symptoms of pesticide poisoning as well as fundamental first aid techniques. Have the telephone number of the nearest Poison Center posted near the telephone in case of a pesticide emergency. Remember to have the pesticide label available when calling for help or going to the hospital, as it contains important medical information.