What You Need to Know About Pesticides and Your Health

Lawn care operator spraying turf with herbicides.
Photo:1999. M.J. Weaver; Virginia Polytechnic Institute and State University
http://pesticidepics.ext.vt.edu/view_photo.php?set_albumName=album18&id=A_TO0005

Michigan Department of Community Health
Division of Environmental and Occupational Epidemiology

State of Michigan

Governor – Jennifer M. Granholm, JD

Michigan Department of Community Health

Director – Janet D. Olszewski, MSW
Surgeon General – Kimberlydawn Wisdom, MD, MS

Chief Administrative Officer, Public Health Administration – Jean Chabut, BSN, MPH
Director, Bureau of Epidemiology – Mathew Boulton, MD, MPH
Director, Division of Environmental and Occupational Epidemiology – David R. Wade, PhD

Prepared by
Abby Schwartz, MPH
Martha Stanbury, MSPH
Jill Granger, MPH

Acknowledgements
Michigan Department of Agriculture
Brian Rowe
Brian Hughes, PhD
Robin Rosenbaum

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What You Need to Know about Pesticides and Your Health

This booklet is intended to provide information and resources to anyone interested in learning more about pesticides and possible health effects of pesticide use. It is not intended to be used as a substitute for pesticide handler training.

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What You Need to Know about Pesticides and Your Health

What is a pesticide?

A pesticide is any substance or mixture of substances used to:

- prevent
- destroy
- repel or
- reduce

pests and the damage caused by pests.

Pests are living organisms that occur where they are not wanted or that cause damage to crops, humans, or other animals. Pests can include insects, weeds, fungi, and rodents. The term pesticide can refer to insecticides, herbicides, fungicides, rodenticides, and various other substances used to control pests.

> Although antimicrobial agents such as sterilizers, disinfectants, sanitizers, and antiseptics may be considered pesticides because they kill microbes, they are not addressed in this booklet.
>
> The U.S. Environmental Protection Agency (EPA) regulates antimicrobial agents that are used on non-living objects and surfaces as pesticides. Products intended for the control of microorganisms in or on living humans or animals are considered drugs, not pesticides, and are regulated by the U.S. Food and Drug Administration (FDA).

Americans use more than a billion pounds of pesticides each year. There are over 600 different approved “active” ingredients that are sold in about 16,000 pesticide products used in the Unite States. Pesticides consist of

- active ingredients, that have been shown to act against specific pests and
- inert ingredients that are used as carriers for the active ingredients, to help dissolve them, make them easier to apply or to preserve them.

Inert ingredients do not have to be listed individually on the pesticide label and do not go through the same approval process as active ingredients.

Pesticides are widely used on agricultural crops, in the home and yard, and in public places. Pesticides come in a variety of states. They can be solid, such as dusts, granules, pellets, wettable powder, etc. Liquids can be ready-to-use or concentrated. Pesticides can also come as gases such as those used for fumigation.

Pesticides are classified in the following two categories:
General Use Pesticides: These pesticides are not likely to harm the environment when used according to label directions. These are pesticides that can be generally

purchased and used by anyone. RAID®, ROUND-UP® and other similar products, used to kill household pests or eliminate weeds, are considered general use pesticides.

Restricted Use Pesticides: These pesticides may harm humans or the environment *even when used according to label directions*. Pesticide products whose use has been classified by the EPA as "restricted" can only be applied by a certified pesticide applicator or under the direct supervision of a certified applicator. Everyone who handles a restricted use pesticide, from the manufacturer to the end user, must keep and retain records.

Are pesticides harmful to people?

Pesticides were developed to help make our lives safer and more comfortable. They rid our homes of mice, ants, termites, flies and other pests. They kill weeds and insects found in our gardens and farms that could destroy crops. In addition, pesticides are used to repel disease-bearing insects such as mosquitoes and ticks.

However, if not properly handled, any benefit derived from using pesticides can be cancelled out by the harm done to the health and well being of people and the environment. The potential for pesticides to harm people is related to the types and concentrations of chemicals in each product. It also depends on how much of the pesticide a person was exposed to, how long the exposure was, and how it enters your body. There are three major ways for a pesticide to enter the body. It can be breathed in, swallowed, or passed through the skin. If you believe you have been exposed to a pesticide and begin to feel sick, call **poison control** at **1-800-222-1222.**

If you must use pesticides, always read the label before buying and applying them. Use pesticides only for the purpose(s) listed and in the manner directed. *Reading the label and carefully following the directions is important for safe use of pesticides.*

Consider alternatives such as integrated pest management (IPM). IPM is a system of common sense practices designed to choose the most environmentally friendly course of action in controlling pests. The principles of IPM can be used at home, in schools, in

commercial settings, and in agriculture. IPM programs use many pest management strategies, including:

- keeping vegetation, shrubs and wood mulch at least one foot away from structures;
- filling cracks and crevices in walls, windows, floors and pavement;
- repairing window screens;
- cleaning dishes, utensils, and surfaces daily;
- storing food in sealed containers;
- sealing, emptying and cleaning garbage cans and dumpsters regularly;
- identifying the specific pest problem before taking action;
- using spot treatments rather than area-wide applications; and
- using crop rotation.

Michigan schools, public buildings, and health care facilities must have an IPM program in place. A pesticide applicator must attend a Michigan Department of Agriculture approved IPM training program before applying pesticides in any of these buildings.

Are some people at greater risk of harmful effects of pesticides?

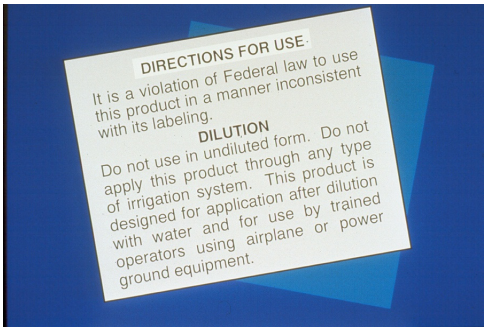
How often and how long people come into contact with pesticides affects their risk of developing problems. People who regularly work with or around pesticides, like pesticide applicators and agricultural workers, are usually at highest risk.

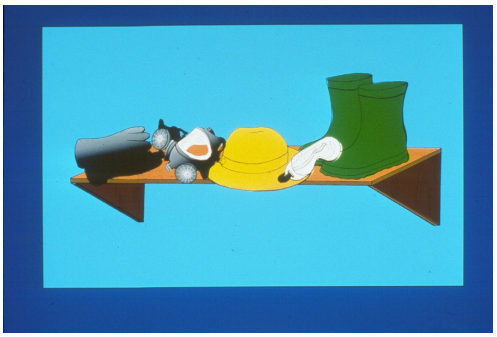
Some individuals may be more sensitive to the harmful effects of pesticides, including:

- newborns and young children (because they absorb greater concentrations of pesticides per body weight, are more likely to play on treated areas, and their organs and immune system are not fully developed);
- the elderly (because their immune systems and organs may no longer be working as well as in younger adults); and
- those with many allergies, asthma, or other medical problems (because their immune systems or organs may be compromised).

What should be done to protect people from the harmful effects of pesticides?

Follow all requirements for application and personal protection that are listed on the pesticide label!





Occupational pesticide users

Structural pest control applicators, agricultural workers, and others who have frequent contact with pesticides are at a higher risk of pesticide exposure. Workers can expose their families by carrying pesticides into their homes on their bodies, clothes, and shoes.

Pesticide applicators should be certified or trained and wear appropriate personal protective equipment. Information about the personal protective equipment required for each pesticide is listed on the pesticide label. Anyone who might come into contact with pesticides through work should receive training that includes the importance of:

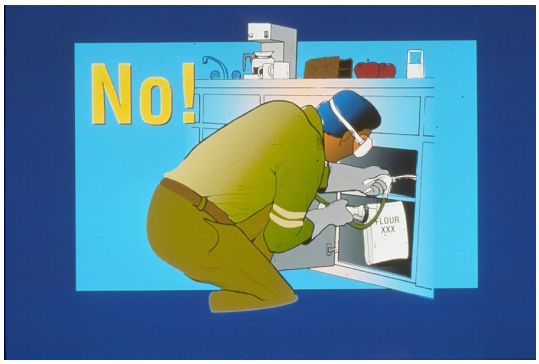
- keeping out of treated or restricted areas;
- washing before eating, drinking, smoking, chewing gum, or using the toilet;
- wearing work clothing that protects the body from pesticide residues;
- washing/showering with soap and water, shampooing hair and putting on clean clothes after work;
- washing work clothes separately from other clothes before wearing them again;
- washing immediately in the nearest clean water if pesticides are spilled or sprayed on the body and, as soon as possible, showering, shampooing, and changing into clean clothes.

Household members

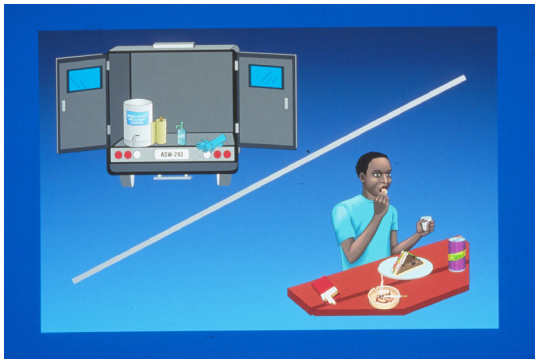
Pesticides are used in homes and gardens and can be applied by homeowners or professional applicators. They are also used on pets and for mosquito control. Pesticide residues may be found on fruits and vegetables or in water.

To minimize your chances of being exposed when using pesticides, always follow label instructions.

Do not spray pesticides near food and dishes.



Don't smoke, eat or drink while spraying pesticides since these activities increase the likelihood of their ingestion. Wash your hands after handling any pesticide product.



Properly ventilate the treated area during or after application. If a pesticide dust is being used, wear a disposable dust mask. If you spill a pesticide on your skin or clothing, wash with soap and water immediately and change your clothes.

What should I do if I am exposed to a pesticide?

1. Minimize further exposure.
   - If a pesticide is splashed on your clothing remove the clothes as soon as possible and later wash the clothes separately from other clothes.
   - If pesticides are on your skin wash with soap and water for at least 15 minutes.
   - For pesticides in the eyes, rinse your eyes with water for at least 15 minutes.

   - If you accidentally eat or drink a pesticide, read the label to see if vomiting should be induced. If you feel a burning sensation, rinse your mouth with water and dilute the poison by drinking milk or water.
   - If you have inhaled a pesticide, leave the area and seek fresh air. Follow re-entry directions on the product label.

2. If you begin to have symptoms, such as feeling dizzy, having skin irritation/pain, feeling sick to your stomach, or vomiting, call the **Poison Control Center (PCC) at 1-800-222-1222.** The PCC has trained professionals to answer the phone 24 hours a day. They can give information on pesticides and treatment information for those that need it. Help is available in several languages.

3. If advised by the PCC, or if unable to reach a PCC, get medical help from your doctor or hospital emergency room. Bring with you:
   - labels of all pesticides you were exposed to, if available; and/or
   - records telling what and how much was sprayed from the person or company that sprayed, if available.

What types of pesticides are commonly used and what are their health effects?

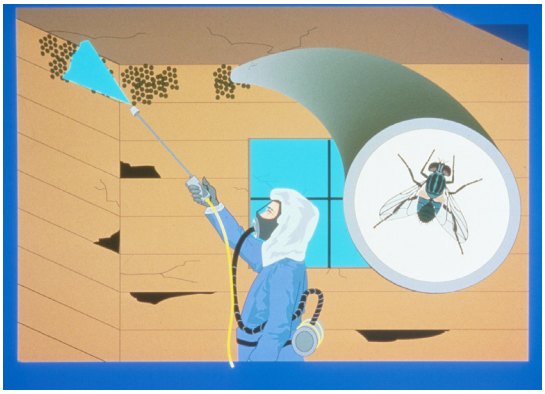
In addition to exposure, potential health effects are related to the toxicity of the pesticide. General pesticide categories are discussed in this section. They include insecticides, herbicides, fungicides, and rodenticides. Information about active ingredients is presented here including toxicity, possible symptoms, and examples of the trade names of products containing those active ingredients. Trade names are given as examples and are not recommendations.

While the active ingredients are discussed here it should be noted that the inert ingredients, while not acting as a pesticide, might be toxic to humans or the environment.

Insecticides

Insecticides are used to control or kill insects. They are used in agriculture, the home, office buildings, schools, lawns, gardens, and in veterinary practice. Some major groups of insecticides are:

- organophosphates
- carbamates
- pyrethrins
- pyrethroids
- biologicals and
- organochlorines.



Organophosphates:
Many insecticides used in the U.S are organophosphates, although other chemicals are gradually replacing them. Organophosphates can affect the nervous system. Symptoms include headache, salivation, nausea, vomiting, diarrhea, sweating, shortness of breath, muscle twitching, and chest tightness. A large exposure can cause respiratory failure, loss of consciousness, convulsions, and even death.

An example of an organophosphate is malathion. It is a general use pesticide considered by the EPA to be slightly toxic. One brand name of malathion is Fyfanon®. Another organophosphate is diazinon, which is classified as a restricted use pesticide. It is either moderately or slightly toxic, depending on the formulation. An example is Spectracide®.

Carbamates:
These insecticides also affect the nervous system, and symptoms of carbamate poisoning are similar to the symptoms of organophosphate poisoning.

Carbaryl is a carbamate that is classified as a general use pesticide, but formulations vary widely in toxicity. An example is Sevin®. Aldicarb is a restricted use carbamate and is an extremely toxic systemic insecticide that is applied directly to the soil. An example is Temik®.

An airblast sprayer spraying in an orchard.
Photo: 1999. M.J. Weaver; Virginia Polytechnic Institute and State University
http://pesticidepics.ext.vt.edu/view_photo.php?set_albumName=album04&id=A_MS0008_001

Pyrethrins:
Pyrethrins refers to natural insecticides derived from chrysanthemum flowers. Pyrethrins are used to control human lice, pet fleas, mosquitoes, cockroaches, beetles and flies. Inhaling pyrethrins can cause coughing, runny or stuffy nose, wheezing, or shortness of breath. Exposure to the skin can cause a rash, itching, or blisters.

Pyrethrins are swiftly detoxified by enzymes in the insect, so small amounts of more lethal insecticides or synergists may be added to the product. Drione® is a general use pesticide containing pyrethrin. It is classified as slightly toxic.

Pyrethroids:
Pyrethroids are related to pyrethrins but have been modified to increase their stability in the environment. Pyrethrum is a general name covering both pyrethrins and pyrethroids.

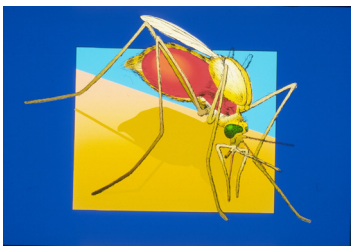
A common pyrethroid is permethrin. It is used on crops, home gardens and for termite and cockroach control. It is moderately to practically non-toxic, depending on the formulation. Symptoms of exposure include skin irritation, sneezing, nasal stuffiness or asthmatic breathing. Examples of products containing permethrin are Ambush®, Prelude Termiticide/Insecticide®, and Pounce®.

Another pythrethroid is cypermethrin. Many products containing cypermethrin are classified as restricted use pesticides because of its toxicity to fish. Cypermethrin is slightly to moderately toxic. Dermal exposure to cypermethrin can cause numbness, tingling, itching, burning sensation, loss of bladder control, and loss of coordination. Ingestion can cause nausea, vomiting, stomach pains, and diarrhea. Cypermethrin is a slight skin or eye irritant, and may cause allergic skin reactions. Examples are Barricade® and Raid Fogger K®.

Biologicals:
These consist of living organisms or the toxins produced by them. One advantage to using biologicals is that they are usually not very toxic to humans and non-target insects. However, they do not have as long a shelf life as conventional pesticides, so they must be stored and used by the date specified.

Bacillus thuringiensis (Bt) is an insecticidal bacterium used to control moths, mosquitoes, and black flies. It occurs naturally in the environment. There are different strains of Bt, each with specific toxicity for particular insects. Bt works when insects eat it as larvae. It is a general use pesticide. Bt is practically non-toxic to humans, but can irritate the eyes and skin.

Bacillus thuringiensis israelensis (Bti) is a naturally occurring soil bacterium that can effectively kill mosquito larvae present in water. VectoLex®CG, Aquabac®, and LarvX® are examples of common trade names. Bacillus thuringiensis kurstaki *(*Btk) can be used for gypsy moth control. And example is Foray 48B®.



Organochlorines:
These insecticides may be harmful to humans and wildlife. They can accumulate in the body and stay for a long time. Organochlorines last a long time in the environment, too. DDT and chlordane, both banned for use in the U.S. because of their ecological effects and environmental persistence, are the most well known pesticides of this type. Exposure can cause headache, nausea, vomiting, diarrhea, dizziness, and seizures.

An example of a registered organochlorine is endosulfan (Phaser®, Dragon Thiodan Insect Spray®). Another organochlorine is lindane, available by prescription only to treat lice and scabies.

Some insecticides are intended for use directly on people or animals.

Insect Repellents for Personal Use: Insects such as mosquitoes, ticks, lice, mites, etc., bother people. In addition, some of these insects can carry diseases such as West Nile Virus, caused by the bite of an infected mosquito.

You can minimize your exposure to mosquitoes by:

- avoiding being outdoors when mosquitoes are most active (dawn and dusk) and wearing light colored long-sleeved shirts and long pants
- emptying standing water from puddles, buckets, barrels, cans or similar sites where mosquitoes can lay eggs
- maintaining window and door screens to keep mosquitoes out of buildings
- applying insect repellant according to product directions.

Products containing DEET are effective at repelling mosquitoes, flies and ticks. DEET is completely eliminated from the body in 1-3 days. DEET may be mildly irritating to the eyes and skin. Serious adverse effects are rare, and generally associated with misuse of the product. Examples of products containing DEET are Off!®, Skintastic for Kids®, Backwoods Cutter®, and Skeeter Beater®.

Head lice rarely, if ever, cause direct harm, but they can be annoying. Combing carefully each day with a louse comb until two weeks pass with no live lice being discovered is an effective way to eliminate lice. Infestations may also be treated with shampoos containing permethrin (Nix®) or pyrethrins (Rid®) specifically labeled for use on people. A second treatment is often necessary about 10 days later to target lice that hatch after the initial treatment.

Prescription insecticides such as the organochlorine lindane, and the organophosphate malathion (Ovide®) are to be used only when other, less toxic, treatments have failed. Lice sprays are not effective in killing lice or nits.

Pet Care Products: Fleas live on cats and dogs and feed on their blood. Fleas can also transmit disease. The best way to manage fleas is through prevention. Adult fleas spend most of their time on the pet, but eggs laid on the fur fall off into carpeting, beneath furniture cushions, and wherever else the pet lays, sleeps or spends time. Insect growth regulators such as methoprene (Precor®) or nylar (Archer®, Flea Fix®) are used on furniture and carpets to kill flea eggs.

Some pesticides used to protect pets are potentially harmful if not used properly. Read the instructions on the container before use. It is important to keep children away from pets when they are still wet from pesticide treatment. Some common products that kill fleas and ticks include Happy Jack Flea-Tick Powder II ®, a carbamate, and Hartz® 2 in 1 Rid Flea™ Dog Shampoo containing pyrethrin.

Herbicides

Herbicides are used to kill weeds in farm land, parks, golf clubs, gardens, and lawns. There are several types of herbicides, designed to work in different ways. Pre-emergent herbicides are used to stop the germination of plant seeds. Post-emergent herbicides control actively growing weeds.

Herbicides can also be selective or non-selective. A non-selective herbicide kills most plants while a selective herbicide is designed to kill specific types of plants, usually grasses or broad leaf weeds.

Pre-emergent herbicides:
Atrazine is a pre-emergent herbicide used to control broadleaf and grassy weeds for agriculture. It has been classified as a restricted use pesticide due to its potential to contaminate groundwater. Symptoms of atrazine poisoning include abdominal pain, diarrhea and vomiting, eye irritation, irritation of mucous membranes, and skin reactions. An example is AAtrex®.

Post-emergent herbicides:
Steadfast® is a post-emergent grass and broadleaf weed herbicide. It is a general use pesticide containing nicosulfuron and rimsulfuron. It is slightly toxic and can cause eye irritation, skin irritation and upper respiratory tract irritation.

Paraquat is one of the most widely used herbicides in the world. It is a post-emergent, non-selective, restricted use pesticide and can be toxic by inhalation, ingestion and if absorbed through skin. It can cause burns. It is a possible mutagen (causes birth defects) and possible carcinogen (causes cancer). It has been employed for killing marijuana in the U.S. and in Mexico. Examples of paraquat are Gramoxone Max® and Cyclone®.

Non-selective herbicides:
Glyphosate is a broad-spectrum, nonselective, post emergent herbicide used for control of annual and perennial plants including grasses, sedges, broad-leaved weeds, and woody plants. It is a general use pesticide that is classified as moderately toxic by the EPA. It can be irritating to eyes, skin, and the upper respiratory tract. Examples include Rodeo® and Roundup®.

Another non-selective herbicide used for bare ground vegetation control in driveways, brick walks, paths, etc. is prometon. Prometon is a general use pesticide that can cause eye irritation. An example is Total Vegetation Killer Formula II®.

Selective herbicides:
Dichlorophenoxyacetic acid (2, 4-D), a member of the phenoxy family of herbicides, was the first successful selective herbicide developed. It is active only on broadleaf-weed species and has little or no effect on grasses. It is used in agriculture and on roadsides, non-crop areas, forestry, lawn and turf care, and on aquatic weeds.

It is a general use pesticide classified as slightly toxic orally, but highly toxic by eye exposure. Prolonged breathing of 2,4-D can cause coughing, burning, dizziness, and temporary loss of muscle coordination. Examples of 2,4-D are Barrage® and Weedone®.

Pendimethalin is a general use selective herbicide used to control most annual grasses and certain broadleaf weeds in many crops. It is used both pre-emergence and early post-emergence. Pendimethalin is slightly toxic if ingested, inhaled or absorbed through the skin. Inhalation may cause irritation to the mouth, nose, throat, and lungs. An example is Prowl®. Pendimethalin is also used by homeowners as a pre-emergent herbicide to control crabgrass. An example is Scotts® Halts® Crabgrass Preventer.

Fungicides

Fungicides are used to control molds and fungi. They are used in agriculture and in the home and garden to protect seed grains, berries, flowers and grasses. Fungicides vary in their potential to cause harm. The most common health effect is irritation to the skin, mouth, and nose. Some of the more toxic fungicides can cause headaches, nausea, vomiting, dizziness, and loss of consciousness, although most fungicides are unlikely to be absorbed enough to cause systemic poisonings.

An example of a fungicide is mancozeb, a practically nontoxic compound. Trade names include Manzate® and Dithane®.

Copper compounds are also used as fungicides. Copper sulfate is used to control bacterial and fungal diseases of fruit, vegetable, nut, and field crops. It is a general use pesticide but is considered highly toxic to the eyes by the EPA. Examples include Basicop® and BSC Copper Fungicide®.

Sulfur is a fungicide used for control of black spot, brown rot, powdery mildew, apple scab, mites, etc. It is a general use pesticide used on fruits such as apples and grapes, and on ornamental plants such as roses and lilacs. Examples are Safer® and Thiolux®. Both are considered low toxicity pesticides, but can cause irritation to the eyes, skin, and respiratory tract.

Rodenticides

Rodenticides are used to kill rats, mice, and other rodents. Some rodenticides contain an anticoagulant (blood thinner). When rodents eat these, they begin to bleed internally until they die. If a human accidentally swallows an anticoagulant rodenticide it can cause internal bleeding in the person. Other rodenticides can cause breathing difficulties, nausea, vomiting, and unconsciousness. Rodenticides usually have to be eaten in order for them to be harmful.

Warfarin was the first anticoagulant rodenticide introduced. It is used for controlling rats and mice in and around homes, agricultural premises, and commercial sites. It is odorless and tasteless and effective in very low dosages. Warfarin is a general use pesticide that is only slightly dangerous to humans when used as directed. It can cause bleeding and blood-thinning. An example is D-Con®.

Some populations of rats and mice have become resistant to anticoagulant baits. For these pests, alternatives have been developed.

Zinc phosphide is an inorganic chemical that is used to control rats, mice, and other rodents. It is a restricted use pesticide because of its danger to non-target organisms and its acute oral toxicity. It can be highly toxic to slightly toxic depending on the formulation. Zinc phosphide containing products should not be used in or around the home. Ridall® is an example of a zinc phosphide rodenticide.

Bromethalin is a restricted use rodenticide used in and around buildings and sewers, and inside transportation and cargo vehicles. It affects the central nervous system, causing paralysis leading to death. It is extremely toxic. A single dose of bromethalin can kill a rodent, unlike anticoagulants, which work over time. The EPA requires bromethalin-containing baits to include a bittering agent to discourage children from eating the bait, and a dye that will show if children or pets have eaten any of the pesticide.

In addition to accidental ingestion by children, adults could inhale this chemical when setting out the bait. Symptoms of exposure include skin and eye irritation; nasal discharge; loss of muscle control; weakness; loss of tactile sensation; swelling of the brain, spinal column and nerves; blurred vision; and loss of consciousness. Examples of products containing bromethalin are Wipe Out® and Vengence®.

What laws regulate pesticides and how they are used?

The main federal law administered by the U.S. Environmental Protection Agency (EPA) in regulating pesticides is the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Among other things, FIFRA requires that pesticides be properly registered and labeled before they can be sold or distributed in the U.S. In order for a product to be

registered by the EPA, it must go through an extensive evaluation of its toxicity. These tests look at acute and long-term health effects.

Some long-term effects include:

- reproductive and developmental effects
- effects on the nervous system, and
- the ability to cause cancer.

The EPA is the federal agency with primary responsibility for regulating pesticides. The Michigan Department of Agriculture (MDA) has an agreement with the EPA to enforce some provisions of FIFRA in Michigan. In addition, MDA regulates pesticides under the state authority of the Natural Resources and Environmental Protection Act (Act 451, part 83). The incorrect labeling or the misuse of a pesticide is a violation of both FIFRA and Act 451. MDA is responsible for enforcing these laws.

The EPA oversees the *Worker Protection Standard* (WPS). WPS is the part of FIFRA that governs protection of certain agriculture workers from agricultural pesticides. MDA is also responsible for enforcing the WPS in Michigan.

The WPS protects the health of agricultural workers and agricultural pesticide handlers (mixers, applicators, etc.). For example, farm employers must prevent workers without appropriate personal protective equipment from entering a field during a pesticide application or until the end of a waiting period after application. This waiting period is called a restricted-entry interval (REI). The REI is different for different pesticides, and it is listed on the pesticide label. The employer is also required to post recent pesticide application and REI information at a designated site.

WPS also requires agricultural employers to provide the following:

- Pesticide safety training for most agricultural workers and pesticide handlers;
- Personal protective equipment for pesticide handlers and those that enter a field before the REI is over;
- Enough water, soap, and towels for washing the pesticide off (within ¼ mile of the field); and
- Transportation to medical care when a worker or pesticide handler is injured.

The Natural Resources and Environmental Protection Act (PA 451 part 83) gives the MDA the authority to register and certify commercial and private pesticide applicators.

The MDA is responsible for investigating pesticide misuse and adverse environmental effects when pesticides are used in accordance with label instructions. Complaints about pesticide misuse should be made as soon as possible after the incident.

The Michigan Department of Labor and Economic Growth (DLEG) enforces the Michigan Occupational Safety and Health Act (MIOSHA) to ensure workplace safety, including safe pesticide use.

The EPA establishes residue tolerances that are enforced by the Food and Drug Administration (FDA). Residue refers to the pesticide that stays in or on farm products or processed foods. A tolerance is the amount that can legally remain on the food.

The Food Quality Protection Act (FQPA) of 1996 amended FIFRA and the Federal Food Drug, and Cosmetic Act (FFDCA). These amendments changed the way EPA regulates pesticides. FQPA requires a new, more stringent, safety standard to be applied to all pesticides used on foods. As a result of FQPA a number of pesticides are no longer registered for use.

What are the reporting requirements for a work-related pesticide illness?

Any occupational-related illness or injury should be reported to MIOSHA (Michigan State University, College of Human Medicine, manages the reporting system). Health care providers and employers are required by law to report occupational pesticide illnesses and injuries in accordance with Michigan's Public Health Code. For reporting information, see the useful telephone numbers/addresses at the end of this booklet.

Are there laws about spraying pesticides from airplanes?

MDA regulates the applicator pilot; the aircraft spray system; and the aerial application company when pesticides are applied by air. The Federal Aviation Administration (FAA) oversees the pilot and the aircraft. Complaints regarding the aircraft and actions of the pilot should go to the appropriate district office of FAA (Detroit, Grand Rapids, or South Bend). Complaints regarding spray drift incidents should go to MDA.

A Hiller helicopter in flight using a boom sprayer.
Photo: 1999. M.J. Weaver; Virginia Polytechnic Institute and State University
http://pesticidepics.ext.vt.edu/view_photo.php?set_albumName=album02&id=AAA0027

Are there laws regulating the disposal of pesticides and pesticide containers?

It is important to dispose of old or unwanted pesticides safely to prevent accidental use or accidental contamination of property and ground water. Be sure to use up old pesticides before buying more. “Clean Sweep” sites are available in 15 counties for safe and proper disposal of outdated, unused or unwanted pesticides. See below for contact information.

You may also be able to take unwanted pesticides to a community household hazardous waste collection site if your city has one. For more information contact the Department of Environmental Quality. Do not pour unwanted pesticides down the sink or flush them down the toilet. For more information, visit the EPA website listed in this booklet.

Are there laws regulating the transport of pesticides?

The shipping of pesticides across state lines is regulated by the federal Department of Transportation. There are rules for hauling and disposing of hazardous waste that truckers and shipping companies must obey.

What should I do if I am concerned about a pesticide application?

If pesticides are not applied properly they may drift onto people living, working, or going to school near farm fields or at other application sites.

If you are concerned about a possible exposure, call the applicator and/or property owner to ask about the pesticides used. If you remain concerned, contact your local MDA office to file a complaint (see contact information below).

To assist the MDA in their investigation, it is important to contact them as soon as possible. In addition, taking photographs and/or a videotape of the area that was treated, writing down the telephone numbers or addresses of any witnesses, and keeping a written record of what happened can help. Include calls to different agencies; when symptoms started and how long they lasted; doctor’s visits; and medical tests. Keep copies of all letters and records.

USEFUL TELEPHONE NUMBERS AND ADDRESSES

For medical information in an emergency, call:
Michigan Poison Control Center
1-800-222-1222

To report a misuse of pesticides or for information on the Worker Protection Standard for Agricultural Pesticides, contact:
Your regional MDA office:
Region 1 – Upper Peninsula (Escanaba) 888-684-1158
Region 2 – Northern Michigan (Traverse City) 231-922-5210
Region 3 – West Central Michigan (Grand Rapids) 616-356-0600
Region 4 – Thumb and Mid-Michigan (Saginaw) 989-758-1778
Region 5 – Southwest Michigan (St. Joseph) 269-428-2546
Region 6 – Central Lower Michigan (Lansing) 517-335-1830
Region 7 – Southeast Michigan (Southfield) 248-356-1701

Or:
Michigan Department of Agriculture (MDA)
Pesticides and Plant Pest Management Division
PO Box 30017
Lansing, Michigan 48909
517-373-1087 or 1-800-292-3939 and press 2 for pesticide-related issues
www.michigan.gov/mda

To dispose of unwanted pesticides contact:
Clean Sweep
Alpena County – 989-354-9870
Berrien County – 269-983-7111 ext. 8350
Delta County – 906-786-9056
Emmet County – 231-348-0640
Grand Traverse County – 231-995-6067
Ingham County –517-887-4312
Ionia County – 616-527-8219
Isabella County – 989-773-9631
Kalamazoo County – 269-383-8741
Lapeer County – 810-245-5791
Macomb County – 586-469-5235
Marquette County – 906-249-4125 ext. 14
Monroe County – 734-240-3170
Ottawa County – 616-393-5645
Saginaw County – 989-758-3685
http://www.michigan.gov/mda/0,1607,7-125-1568-68872--,00.html

Or:
Michigan Department of Environmental Quality

Household Hazardous Waste Collection
517-373-1322
http://www.michigan.gov/deq/1,1607,7-135-3312_4118_4239-14774--,00.html

To report work-related pesticide illnesses or injuries, as required by Michigan's Public Health Code, health care providers and employers should contact:
Michigan State University
Occupational and Environmental Medicine
117 W. Fee Hall
East Lansing, Michigan 48824-1315
517-353-1864
www.chm.msu.edu/oem

To obtain information about occupational human health effects, contact:
Pesticide Surveillance Coordinator
Michigan Department of Community Health (MDCH)
Division of Environmental and Occupational Epidemiology
3423 N. Martin Luther King, Jr. Blvd.
Lansing, Michigan 48909
1-800-648-6942 (1-800-MI-TOXIC)
www.michigan.gov/mdch-toxics

For educational materials about pesticides and their use, contact:
Michigan State University
Pesticide Education
B18 Food Safety & Toxicology Building
East Lansing, Michigan 48824
www.pested.msu.edu

For general information on pesticides, contact:
National Institute of Occupational Safety and Health
http://www.cdc.gov/niosh/topics/pesticides

National Pesticide Information Center
1-800-858-7378
http://npic.orst.edu/

U.S. Environmental Protection Agency
http://www.epa.gov/ebtpages/pesticides.html