



A Community Guide to Recognizing & Reporting Pesticide Problems



The Department of Pesticide Regulation (DPR) has prepared this booklet to give people easy-to-understand information about how DPR and the County Agricultural Commissioners control pesticide use in California. We explain how to get help in emergencies and how to resolve pesticide use complaints and concerns. The guide also tells you how to find information on pesticide use in your area and the health effects of specific pesticides. A list of major topics covered is on the next two pages.

We have included many useful phone numbers and Web addresses below and on the inside back cover, including contact information for your County Agricultural Commissioner. You can also look up the Commissioner's number in the government pages of your local phonebook, or by calling our toll-free complaint information line, 1-87PestLine (1-877-378-5463).



DPR phone numbers, Web site

Department of Pesticide Regulation...	www.cdpr.ca.gov
Executive Office/General Information	916-445-4300
Enforcement Branch.....	916-324-4100
Northern Regional Office	916-324-4100
Central Regional Office	559-243-8111
Southern Regional Office	714-279-7690
Legislation/Regulations Office	916-445-3976
Licensing Office	916-445-4038

Other useful phone numbers

Contact information for your local Agricultural Commissioner is on the back inside cover, or get the number by calling 1-87PestLine (1-877-378-5463)

National Pesticide Information Center
1-800-858-7378, npic@ace.orst.edu

Regional Poison Control Center
1-800-222-1222

Want more copies of this guide? Call 916-445-4300 to have a free copy mailed to you, or download it from DPR's Web site, www.cdpr.ca.gov.

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Pesticide Emergencies

At a Glance

- **If you or anyone else is seriously ill, call 911 for help.**

In less serious cases, call your doctor or the Poison Control Center, 1-800-222-1222.

- Be sure to tell emergency responders or your doctor that you may have been exposed to a pesticide.
- If you or anyone else is being exposed to pesticide drift, move away from any area where you can smell pesticides.
- To report possible pesticide misuse, call your County Agricultural Commissioner's office. You can get the number and be connected by calling toll-free, 1-877PestLine (1-877-378-5463).

What you should do in an emergency depends on the type of pesticide incident and how serious it is. Taking the right action is as important as taking action right away.

- **If you or anyone else is seriously ill, call 911 for help.**

If you feel ill and want to see the doctor or go to the hospital, have someone else drive.

- **If someone swallowed a pesticide,** call for help right away.

Do not wait for symptoms to appear and **DO NOT MAKE THE PERSON VOMIT. Call 911** or take the person to the nearest emergency medical clinic or hospital.

- **If the person is unconscious,** immediately remove the victim from the source of the exposure, if you can do so without putting yourself or the victim in further danger.

Call 911 for emergency help. If possible, have someone

What are the typical symptoms of pesticide illness?

A pesticide can make you sick if you swallow it, breathe it, or get it on your skin or in your eyes. Your symptoms could be delayed as long as a day. Depending on the pesticide and the amount you were exposed to, you may experience:

- Flu like symptoms including tiredness, headache, or dizziness.
- Blurred vision.
- Stuffy nose, sore throat or coughing.
- Eye, nose or skin irritation.
- Excessive sweating.
- Vomiting, diarrhea, or stomach cramps.
- Nervousness, confusion, loss of coordination.

In more serious cases, you may:

- Be weak or unable to walk.
- Feel discomfort in your chest.
- Have pinpoint pupils.
- Foam at the mouth and nose.
- Have problems breathing.
- Lose consciousness or even go into a coma.

Your regional Poison Control Center *can give you information and advice on whether your symptoms may be related to pesticide exposure. Call 1 800 222 1222. (Interpreters are available in more than 100 languages.) At no charge, the Poison Control Center will give you first aid information and advise you on what to do next. Have as much information as possible about what happened and, if you know, the pesticide involved.*

else call while you give first aid. **DO NOT GIVE FLUIDS TO AN UNCONSCIOUS OR SEMI-ALERT PERSON.** If the victim is unconscious, do not perform mouth-to-mouth rescue breathing as you may become contaminated yourself. Warn emergency responders that the person may be contaminated with pesticides.

If the pesticide is on a person's skin, remove their clothing and thoroughly wash their skin with soap and water. Be careful not to contaminate yourself. Dry the person and wrap in a blanket. Put all contaminated clothing in a paper bag and seal it. If you believe the incident was the result of an illegal application, do not wash the clothing. Save it as evidence to give to investigators. If you wash the clothing, keep it separate from other laundry.

If the pesticide got into the eyes, immediately flush with cool water (not too cold or too hot.) Keep the eye open and as wide as possible while flushing for at least 15 minutes. If the person is wearing contact lenses and the lenses did not flush out from the running water, have the person try to remove the contacts AFTER the flushing procedure. (If both eyes are affected, or if the chemicals are also on other parts of the body, have the victim take a shower.) Continue to flush the eye with clean water while seeking urgent medical attention.

If the pesticide was inhaled, remove the person to fresh air if you can do that without danger to yourself. Loosen all tight clothing and keep the victim as quiet as possible while you call for medical assistance.

If the problem is related to home-use pesticides, have the pesticide container with you when you go to a doctor or call Poison Control. Put it in a plastic bag to protect you and others from exposure. The information on the label helps with diagnosis and treatment. Take care in handling pesticide containers to avoid contaminating yourself or anyone else.

Be sure to tell the doctor you may have been exposed to a pesticide and that your symptoms may be related to that exposure. Because many pesticide symptoms are similar

to symptoms of flu or other common illnesses, making a diagnosis is sometimes difficult. Doctors have access to pesticide experts at the Department of Pesticide Regulation (DPR) by calling 916-445-4222 during business hours. They can also click on “Information for Physicians” on DPR’s Web site, www.cdpr.ca.gov, to get links to medical information on pesticides.

Remind the doctor that the law **requires any suspected pesticide illness to be reported to the county health officer within 24 hours**. Information on these requirements and the reporting form are on DPR’s Web site, www.cdpr.ca.gov. Click on the “Information for Physicians” link.

What should I do if I think there has been pesticide drift through the air?

Move away from any area where you can smell pesticides.

If people are getting sick, call 911 to get emergency medical help. Call the County Agricultural Commissioner’s office to report what is happening. You can find the phone number on the inside back cover of this booklet, in the government white pages of your local phone book, or by calling DPR’s toll-free complaint information line, 1-87PestLine (1-877-378-5463). In a non-emergency situation after hours or on weekends, call the non-emergency number for your local police or sheriff’s office. (You can find the number in the government pages of your local phone directory.) They will know how to contact the proper authorities.

Drift can be in the form of a spray or a gas in the air. If a liquid spray drifts onto skin, wash with soap and running water for at least 15 minutes. Call the doctor or the Poison Control Center, 1-800-222-1222, for advice on what to do next.

If you are indoors and you smell a pesticide being applied outside or if you think that a pesticide gas is drifting into your neighborhood, stay inside and close all windows, doors, and any other openings. Turn off swamp coolers, air conditioners, and other fans that bring in outside air.

If you are outdoors, move to where you can’t smell the pesticide. You may need to move some distance away.



Bring the pesticide container with you when you go to the doctor. The information on the label will help with diagnosis and treatment.

Fumigants are gaseous pesticides. They are released into buildings (like termite infested homes) or into stored grain or other food. They can also be injected into the soil and covered with a plastic tarp, applied as a liquid on top of soil and then covered with water, or applied by drip irrigation. Fumigants, being a gas, can drift into neighborhoods near treated fields or buildings. Many (but not all) fumigants have a strong smell or have odor added to them. Some can cause eye irritation before you can smell them.

Do not touch any spray residue on a vehicle, building surface, or other object, and don't wash it off. Call the County Agricultural Commissioner's office. They may want to take samples for their investigation. You can find the phone number on the inside back cover of this booklet, or by calling toll-free 1-877-378-5463 (1-87PestLine).

You can find more information on pesticide drift beginning on page 13.

What should I do if there is a pesticide spill?

Call 911 if you see an accident involving a vehicle carrying pesticides or a large pesticide spill into a river or onto a road.

Even small pesticide spills can threaten the safety of people, wildlife, and the environment. The danger depends on the pesticide and how much is spilled. With major pesticide spills, it is better to let emergency responders contain and clean up the spill. They have the training and equipment to safely handle such emergencies.

You can clean up a small spill of household pesticides yourself. Do it right away. You don't want a child or pet harmed by spilled pesticide. **Don't hose down the spill.** Runoff can damage plants or pollute rivers and streams. Instead, sprinkle the spill with sawdust or cat litter and sweep it into a paper bag. You can call your County Agricultural Commissioner or county office of environmental health to ask how to dispose of the bag. The product label may also include disposal information. Many communities have hazardous waste collection facilities for this purpose. Go to www.earth911.org to find the one closest to you.

If you spill pesticide on yourself, wash it off immediately with soap and water or as the product label tells you. Remove contaminated clothing and call the **Poison Control Center, 1-800-222-1222**, for more advice on what to do.

Using Pesticides in California

At a Glance

- Pesticide sales and use are controlled by the California Department of Pesticide Regulation and by County Agricultural Commissioners in each of the State's 58 counties.
- Pesticide labels are your guide to using the product safely. The label is the law. This means that if you don't follow the directions printed on the label, you are breaking the law.
- To report illegal pesticide use, call your County Agricultural Commissioner's office. You can get the number and be connected by calling toll-free, 1-87PestLine (1-877-378-5463).

Pesticides are unique among toxic substances. Most environmental toxins are an unwanted by-product of another process (for example, outflow from a manufacturing plant or emissions from an automobile engine). Pesticides are chemicals *designed* to be toxic to a target pest and *purposely* introduced into the environment to do their job of managing insects, bacteria, weeds, rodents, or other pests.

Farmers use pesticides to control the pests that can destroy or damage food and other crops. Health agencies use pesticides to combat insects and other organisms known to carry disease (like West Nile virus). Hospitals use disinfecting pesticides to destroy viruses and other "germs" on floors and equipment. Many of us use pesticides to control pests in our homes and gardens.

While pesticides can be useful, they can also harm people, animals or the environment if they are misused or used indiscriminately. That is why the most desirable pest control

What is a pesticide?

A pesticide is any substance intended to control, destroy, repel, or attract a pest. Any living organism that causes damage, economic loss, transmits or produces disease may be the target pest. Some common pesticides (and their target pests) include:

- Insecticides (that are targeted at insects and other "bugs").
- Herbicides (weeds and other unwanted plants).
- Rodenticides (mice, rats).
- Molluscicides (snails, slugs).
- Repellents (mosquitoes, ticks).
- Disinfectants and sanitizers (bacteria, mildew and other microorganisms).
- Fungicides (plant diseases, molds).
- Wood preservatives.





Mowing your lawn at the proper height and fertilizing at the right times contribute to a more vigorous lawn that can out-compete weeds and resist pests.

Three inches of mulch can prevent weeds.

method is to prevent pests from becoming a problem in the first place. If prevention doesn't work and pests do become a problem, the next step is to choose the least-toxic method of handling it. You can get rid of weeds, for example, with a mechanical technique (pulling them out), a cultural practice (spreading a mulch over the soil), or an herbicide. If a pesticide is the best solution, make sure the product is designed for your pest problem, and always choose the least-toxic alternative. This stepwise approach is called "integrated pest management," or IPM, and is practiced by many farmers and consumers. DPR encourages everyone to learn about IPM, pest prevention, and least-toxic pest control methods.

You can find more information about pest prevention and IPM on DPR's Web site, www.cdpr.ca.gov. You can also call your county farm and home advisor at the University of California Cooperative Extension Office. You can find the phone number in the government pages of your local phone directory, or on UC's Web site at <http://ucanr.org/ce.cfm>.

Concerned about potential harmful effects of pesticides, California has been active in pesticide regulation since passing its first pesticide law in 1901. California's Department of Pesticide Regulation and County Agricultural Commissioners work with the federal Environmental Protection Agency to regulate pesticide use. These agencies face an increasing challenge: protect the public, workers, and the environment while allowing the use of chemicals to manage pests. Regulators need help to make sure we have safe and sensible pesticide rules – and to make sure pesticide users follow those rules.

Why do you say, "The label is the law"?

A simple rule: every pesticide product must have a label. The federal label law is strict. The label must describe:

- The pesticide's active ingredients (the chemicals that do the work).

- The target pests (the pest the product is designed to control).
- Instructions telling users how to make sure the pesticide is applied only to the target pests.
- Information about possible harmful effects from short-term exposure (the product's acute toxicity).
- Precautions the person applying the pesticide should take to protect themselves, other people, and the environment.

Whether the person using the pesticide is a professional applicator, a farmer, or someone in their own home and garden, he or she must read and follow all directions and safety measures stated on the product label. The label is the law.

Read the label first

The pesticide label is your guide to using pesticides safely and effectively. It contains information you should read and understand before you use a pesticide product. For how to read a pesticide label, go to www.cdpr.ca.gov, click "Consumer Fact Sheets."



That label is your main source of information on how to use the product correctly, safely, and legally. Using a pesticide in a way that is different from what the label says is against both federal and State laws. In California, farmers and other professional pesticide users must also follow extra rules contained in State regulations or required by County Agricultural Commissioners.

NOTE: Most labels do not include information about symptoms you may experience if you become ill from pesticide exposure. Two sources of information are the National Pesticide Information Center (toll-free 1-800-858-7378) or your regional Poison Control Center, 1-800-222-1222.



Product labels use three signal words, **Danger**, **Warning** or **Caution** to tell you the potential hazard of a pesticide. Read the label carefully to find out how to use the product safely.

How to read a pesticide label

Labels use three signal words, **Danger**, **Warning**, or **Caution** to show how dangerous a pesticide can be to people who are overexposed on an acute (that is, short-term) basis. Signal words do not provide any information about potential problems with long-term exposure.

The signal words tell you the potential hazard of active ingredients and other substances (such as solvents) contained in pesticides. The signal word is based on laboratory tests on animals that indicate the potential effects if the pesticide is eaten, swallowed, inhaled, or gets on skin or in eyes.

Pesticides with the signal word **Danger** are the most toxic or dangerous. Often, they will also have the word Poison and the skull-and-crossbones on the label.

The signal word **Warning** is applied to less toxic pesticides that pose a specific hazard to people, such as severe skin or eye injury, or a particular danger to the environment.

Pesticides with the signal word **Caution** are the least toxic to people and are generally less dangerous. But still handle them carefully, and always follow the label instructions.

Any substance – whether a pesticide, household cleaner or over-the-counter medication – can be dangerous if not used correctly.

What is illegal pesticide use?

An illegal use occurs when someone doesn't follow the directions on a pesticide label or doesn't obey California's rules. Anyone who uses a pesticide illegally can be fined or criminally prosecuted. This applies even to people using pesticides in their own homes or gardens. Farmers who break the rules can also lose their permits to apply restricted pesticides.

Businesses treating property must give the property operator information about the chemicals they will use and have the owner's permission to treat the property. For some pesticides, rules require neighbors be informed that a permit has been issued and be given an opportunity to get more information.

The County Agricultural Commissioner from the affected county decides if someone using pesticides has broken the law. The Department of Pesticide Regulation, which oversees the work of the County Agricultural Commissioners, also prosecutes some cases.

Under California law, controls on pesticide use begin before an application and continue after it is over. For example, if a rule requires that, after application, tarps be kept over a building, ignoring the rule would be illegal. Similarly, if an applicator does not get a permit before using a restricted pesticide, that would be an illegal use. And if during an application, a person applying the pesticide breaks the rules that, too, would be illegal. Any time someone using a pesticide injures people or the environment, they have broken the law and can be fined or prosecuted criminally.

Who does what?

Pesticide sales and use in the United States are controlled by government agencies working cooperatively at the national, state, and local levels.

U.S. Environmental Protection Agency (U.S. EPA)

- Evaluates and registers (licenses) new pesticides before use anywhere in the U.S. Also evaluates and re-registers older pesticides.
- Determines the wording on pesticide labels.
- Sets the allowable levels of pesticide residue (“tolerances”) in fresh produce.
- Oversees import and domestic manufacture of pesticide products.
- Sets minimum standards for enforcement of pesticide laws by the states.

California Department of Pesticide Regulation (DPR)

- Evaluates and registers new pesticides for use in California (after U.S. EPA registration).
- Monitors potential health and environmental impacts of previously registered pesticides.



Anyone who uses pesticides – whether a farmer, professional pest control company, your neighbor, or you – must follow the law and the pesticide label and be careful to avoid harming themselves, anyone else or the environment.

- Does comprehensive assessments of pesticide risks to all populations (workers, children, other sensitive groups) from exposure via air, water, and food, and in the home and workplace.
- Licenses people who make recommendations on pesticide use, and pesticide dealers and brokers. Licenses professional agricultural applicators and businesses and ensures they are adequately trained. (The Structural Pest Control Board licenses companies that apply pesticides to homes and other structures.)
- Determines practices to ensure a safe pesticide workplace.
- Sets statewide policies for pesticide enforcement. Oversees local enforcement officials.
- Reduces pesticide risks by encouraging use of alternative pest management strategies.

County Agricultural Commissioners in all 58 counties are responsible for local enforcement of laws and regulations regarding pesticide use. They:

- Investigate pesticide incidents and illnesses, and impose fines and other penalties if laws have been violated.
- Collect pesticide use reports. California requires full reporting of all agricultural pesticide use.
- Evaluate proposed use of the most potentially hazardous pesticides (“restricted materials”), issue permits for these uses, and impose restrictions as appropriate.

Pesticide Drift

At a Glance

- **If people are ill and it is an emergency, call 911.**
- If you believe that drift has occurred and has harmed people, plants, or the environment, call your County Agricultural Commissioner, who will look into your complaint. The number is on the inside back cover of this booklet. You can also get the number by calling DPR's complaint information line, 1-87PestLine (1-877-378-5463).
- Drift can be noticeable as a cloud of pesticide spray or dust, or can be invisible and odorless.
- If you believe you have been exposed to spray drift and have health-related questions, you should contact the doctor or the Poison Control Center, 1-800-222-1222.

We expect pesticides, when applied, to reach a specific target and remain there. That is the goal of all pesticide applications. Application equipment is built for that purpose. It's the focus of applicator training. When a pesticide product goes where it is not needed or wanted, it may endanger the safety and health of people, injure desirable plants and animals, and affect environmental quality.

Scientists recognize that almost every pesticide application produces some amount of drift off the target area. Not all drift may be harmful or illegal. How much a chemical may drift and whether it is harmful depends on such factors as the formulation of the product, the amount used, the application method, the weather, and – most critically – decisions by the applicator.



If pesticide drift is making people sick, call 911 right away.



Drift can occur from residential and household pesticide applications, too. It can even happen indoors.

Because some drift can occur with any application (and may be in amounts too small to affect people or property), the laws focus on preventing substantial drift.

What is pesticide drift?

Drift is the movement of a pesticide through the air away from the intended target. This drift can be in the form of mist, particles, or vapor (gas). It isn't limited to agricultural activities. Drift can occur when a neighbor sprays pesticides in his garden. It can even occur indoors. Air currents created by heating, cooling, and ventilation systems can pick up and spread pesticides you use in your house.

Pesticide drift was originally thought to occur only when applications were not done properly, and pesticide drifted away from the target, harming people or property. Laws and regulations governing pesticide application were written with this kind of illegal, harmful drift in mind.

As we learned more about how chemicals move through air, we found out that pesticides could drift whether or not those using the pesticides are following the rules. As now used, "drift" refers to any off-site movement of a pesticide – not just to illegal applications. Off-site movement often depends on factors like weather, the application site, or the pesticide used. It can happen when traces of pesticide from one or several legal applications accumulate and remain in the surrounding air. The residues in air are usually (but not always) below the level of health concern.

Measuring and evaluating this kind of low-level off-site movement requires scientific monitoring and study, which we at DPR do in collaboration with Cal/EPA's Air Resources Board and the Office of Environmental Health Hazard Assessment. If we find that drift is harming health, we review the pesticide rules and change them as necessary to protect people. County Agricultural Commissioners enforce these rules.

When does drift occur?

Drift isn't limited to the period during or immediately after an application. It can occur hours or even days later. For ease of explanation in this booklet, we will divide drift into two categories: spray drift, and post-application drift.

“Spray drift” describes drift that occurs during or shortly after the pesticide is applied. It often occurs when wind or application equipment blows the pesticide off the intended site. Spray drift can be in the form of liquid droplets, dust particles (if the pesticide was applied as a dust), or vapor. Vapor can be formed as a liquid or oil dries, or it can be drift of a pesticide that is already a gas (such as a fumigant).

“Post-application drift” occurs after an application is completed. Post-application drift may be the result of an illegal application; for example, an applicator may neglect to follow fumigant application rules. (Fumigant pesticides can escape quickly from application sites and cause problems, resulting in illegal drift.)

On the other hand, post-application drift may also occur with correct applications. Days or even weeks after application, pesticides can evaporate (“volatilize”) into a gas. Low levels of pesticides may be carried long distances by air currents.

Vapor drift from a legal pesticide application is sometimes difficult to predict. It depends on factors like what the weather will be even days after the application. Also, some pesticides evaporate more easily than others, as do some different formulations of the same pesticide.

Why is some drift unavoidable?

The air that surrounds this planet carries vapors and particles long distances. Rain clouds, for example, move with the wind over long distances. Think about how you can smell the disinfectant in your bathroom long after you've cleaned. The same thing happens with pesticides; some amount will drift off target, even though the amount may be very small.

Because pesticides can drift, applicators are legally required to take all possible measures to make sure that any off-site



Although some pesticide may move off target in any application, applicators can and must prevent harmful drift.

movement does not reach a level that could harm people or the environment. They must:

- Exercise a high degree of professionalism in making decisions about applications.
- Ensure their equipment and techniques produce a minimum of drift that is below potentially harmful levels.
- Make sure they don't apply pesticides when conditions exist that make drift more likely, for example, when it is too windy.

Are some pesticides more likely to drift?

Yes. Fumigants are gaseous pesticides used to treat homes, storage bins, and soil before planting. Applicators inject them into soil or release them into buildings. Because they are gases, fumigants move easily through soil and air, and will drift away from where they are applied unless they are confined. Various techniques are used. For example, applicators cover buildings with tarps and seal the edges, to keep the fumigant in the structure. In fields, tarps are placed over the soil to minimize leakage. Over time, the gas slowly releases into the air. Application rules focus on ensuring that the fumigant dissipates slowly so it doesn't build up to harmful levels.

Because they are gases, fumigants are especially volatile. This means they are more likely to drift than other pesticides. Fumigant drift can be a problem during or immediately after application, or days later, particularly if applicators do not pay careful attention to the rules governing fumigant use. That is why fumigants are a major focus of DPR's drift reduction efforts.

Is all drift illegal?

No. Some off-site movement occurs with every application, even if only a few molecules. But to protect people and the environment from harm, California has strict standards concerning drift and many rules limiting applications to minimize drift. Additionally, County Agricultural Commissioners direct significant enforcement activity toward preventing harmful spray drift.



Because they are gaseous pesticides, fumigants are more volatile and special precautions must be taken to prevent harmful drift, such as these tarps placed over fumigated soil.

Pesticide laws focus on spray drift that causes harm, or has the potential to do so. The law specifically recognizes that pesticides may drift but says that “substantial” drift is not allowed. The law prohibits applications if there is a reasonable possibility of harm to people or property.

Enforcement specialists from the County Agricultural Commissioner’s office look at the facts and circumstances of each incident. If an applicator did not follow the rules, he or she could face fines and other penalties.

Sometimes DPR finds that drift from legal applications poses an unacceptable risk. This kind of drift is not related to whether the application was done correctly but to such things as the chemical properties of the product used, the amount used in an area, and the weather. When we learn about post-application problems resulting from legal uses, we look for the causes of the problem. We then change the rules, as necessary, to keep harmful residues out of the air.

What responsibility do applicators have to prevent drift?

People who are applying pesticides have the primary responsibility for drift management. They must take all reasonable precautions to prevent harmful drift. Spray drift can be illegal if the applicator did not follow the instructions on the label or other requirements, or if the drift causes harm to humans and property, or has the potential to do so.

Preventing harmful exposure to people or property requires that applicators, before using pesticides, evaluate:

- Their equipment.
- The weather.
- The site to be treated.
- The surrounding area to decide the likelihood of harm or damage.

After their evaluation, applicators must use available practices to reduce drift that might otherwise occur.

Applicators:

- Must not make an application likely to result in harmful drift.



To prevent harmful drift, applicators must evaluate their equipment, the surrounding area, weather conditions, and anything else that may cause problems.

What are the roles of the Department of Pesticide Regulation and County Agricultural Commissioners regarding drift?

It depends on when the drift occurs in relation to the application, and whether the drift was illegal.

County Agricultural Commissioners:

- Enforce the rules designed to prevent harmful drift.
- Investigate pesticide complaints and take enforcement actions when violations are found.
- Put extra controls on certain pesticides when needed to prevent problems (depending on local conditions; for example, to protect area schools or endangered species habitats).

We at DPR set statewide standards and rules on pesticide use. We also monitor and conduct scientific studies to identify and prevent potentially harmful levels of pesticides in air. When we find problems, we develop additional rules on applications.

- Must not proceed with any action likely to result in the reasonable possibility of contaminating people or interfering with use of neighboring property.

Applicators who do not follow the rules (for example, instructions on the pesticide label or other requirements) will be in violation and may be penalized. Also, if their judgment during an application results in injuries to people, damage to property, or unintended harm to the environment, they will be found in violation and penalized.

What is being done to prevent post-application drift?

Some drift into surrounding air is expected with all pesticide applications. Our job is to make sure that legal applications don't result in pesticide levels in ambient air that pose a risk to health or the environment. If the rules aren't doing that, we change them.

Along with the Air Resources Board, we study pesticides in air next to application sites, as well as in rural communities and cities near agricultural operations. If the studies show that pesticide traces from legal applications accumulate to levels that can harm human health or the environment, we impose extra controls to avoid this harm.

For example, after doing air monitoring, we found that applications of fumigants and certain herbicides could lead to unacceptable post-application drift. Among other changes, we added statewide restrictions on the amount of pesticide that can be applied and acreage that can be treated. We also worked with the County Agricultural Commissioners to develop restrictions that would protect public health while allowing use under specific local conditions.

Application of some pesticides also contributes to the formation of smog, so, along with the Air Resources Board, we are putting controls into place that reduce the contribution of pesticide products to smog.

Pesticide Odor

At a Glance

- All odors represent exposure to a chemical.
- If a pesticide application is causing an odor problem, call your County Agricultural Commissioner. Get the number by calling 1-87PestLine (1-877-378-5463).
- If you or someone else is sick and it is an emergency, call 911,

Because chemical vapors are invisible, odor may be the only way people have of knowing they have been exposed to a chemical.

Odors surround us, some pleasant and some not. Being able to smell an odor doesn't always mean there is a health risk. At the same time, many chemicals – including some pesticides – have odors that can be bothersome. In some cases, chemical odors can make people sick or affect their quality of life.

If a pesticide odor is causing problems for you, call the County Agricultural Commissioner to report it. It is important for us to know what impact pesticide odors have had on you, so we can do something about it.

All odors represent an exposure to a chemical. The chemical you smell may not be the pesticide active ingredient itself. Pesticide products contain a number of ingredients – the “active ingredient” that targets the pest, solvents to dilute the formula, and other ingredients designed to make the product work better. Any one of them may produce a sickening odor.

Odor also may be related to a breakdown product (*see box, right*), a warning agent (a smelly substance added to make

What is a breakdown product?

A breakdown product is the result of a chemical breaking apart into other chemicals. Some kinds of pesticides break down when exposed to sun or rain, or to bacteria found in soil. The breakdown is a natural process that may produce a compound that is more or less toxic than the original chemical. Many common pesticide breakdown products contain sulfur, which has a particularly bad smell.



Pesticides typically contain several ingredients, any one of which may produce a sickening odor.

otherwise odorless products easier to detect), or a chemical added to the formula to hide a bad odor.

Finding the source of a pesticide odor or why it occurred can be difficult. Two pesticide applications may be almost identical in how they are done, yet one results in odor problems and the other does not.

Who do I call when an application is causing an odor?

If you see an application that you suspect is causing the odor, or if a pesticide odor has made you or someone else sick, call your County Agricultural Commissioner. (You can find the phone number on the inside back cover of this booklet, or by calling 1-877-378-5463, 1-87PestLine.) A biologist representing the commissioner will look into your complaint. The biologist will ask you several questions, including:

- The time you noticed the odor.
- Description of odor. Try to associate the odor with something familiar such as rotten eggs, sweet or sour chemicals, petroleum, garlic, or chlorine. Some other useful descriptions are *oily*, *metallic*, *sharp*, *burning*, *light* or *heavy*.
- Names and addresses of other people affected, if you know. Description of any illness symptoms (for example, nausea, teary eyes, difficulty breathing).
- How long the odor lasted.
- Wind direction, if you know.
- Any information that will relate the problem to a specific source or operation.

If there is an odor but no application in view, the Commissioner's office biologist will take your complaint and review their files to try to find nearby applications that may have caused the odor. Even if the odor is gone when the biologist takes your report, he or she will try to determine the cause.

For more information, please turn to page 23, *Reporting Pesticide Incidences and Illnesses*.

If I notice a pesticide odor, does that mean the pesticide was applied incorrectly?

Not necessarily. It is possible to smell odors with lawful applications. However, odor can also indicate a problem. An investigation is required to determine if an odor resulted from an applicator not following the rules or not applying the product correctly.

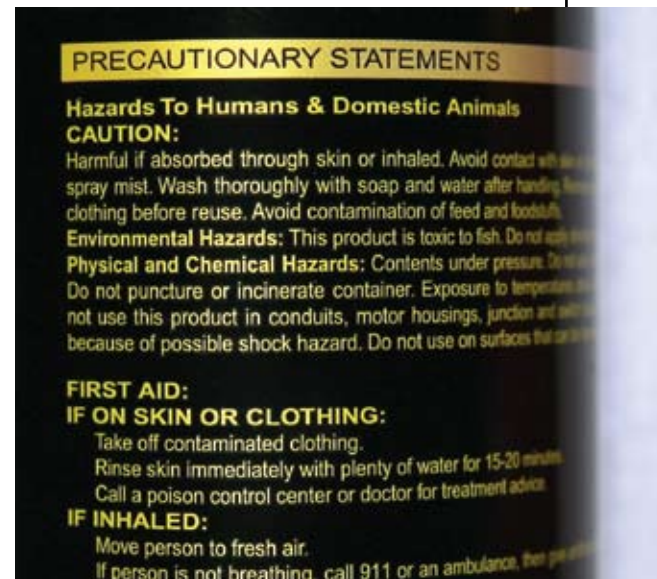
The County Agricultural Commissioner investigates to decide if the applicator followed the rules. If the Commissioner finds a violation, he or she can issue fines and other penalties against the applicator.

But even if the commissioner finds the applicator followed the rules, the problem will not be dismissed without further investigation. The odor may have several causes, such as:

- The product formulation may contain one or more odorous substances.
- The use instructions on the product label may not be adequate to prevent problem odor.
- Many pesticide applications may have occurred in the same area.

All products made with a certain active ingredient may share the odor problem, or it may be limited to certain products, depending on what other ingredients they contain. A product made by one company may produce strong odors while a very similar product made by a different company, using a different method, does not.

We at DPR look into product-related problems. After reviewing reports from County Agricultural Commissioners on odor incidents and collecting other data, we may require the manufacturer to make changes to fix the problem.



Some pesticide odors may occur when the use instructions on the product label are not adequate to prevent problems.



County Agricultural Commissioners can put additional restrictions on a farmer's use of restricted materials, for example, prohibiting the use of certain pesticides near playgrounds when children are likely to be present.

For pesticides classified as restricted materials, we may also suggest to the County Agricultural Commissioners that they put extra controls on how a product is used. These restrictions, designed to be part of the county permit to use the pesticide, can include buffer zones between the application site and places where people live, work, or play. Or an application may not be allowed when the weather increases the chance of odor problems, such as when it is hot, breezy, or there is a low-level inversion layer (a layer of warm air that keeps air under it still and close to the surface). The controls chosen depend on the application site, the particular chemical, and how it is usually applied.

About the human sense of smell

The human sense of smell depends on receptors in the nose being exposed to a chemical. When people smell pesticide odors, they are being exposed to a chemical, although not necessarily the pesticide chemical itself. It may be a solvent (a substance that dissolves other chemicals), a breakdown product, or a warning agent added to give products a noticeable smell.

The ability to detect the odor of a specific chemical varies from person to person, and depends on other conditions such as how often a person is exposed to the odor. People who are often exposed to a certain odor may become insensitive to it – or more sensitive. If you become insensitive to an odor, you may be surprised that other people can smell the odor when you cannot. If you become extra sensitive, you may smell the odor when others do not notice it. There are also differences in chemicals – some chemicals have very low “odor thresholds” and can be detected at very low levels, sometimes lower than the most sensitive monitoring equipment can detect.

Reporting Pesticide Incidents and Illnesses

At a Glance

- **If this is an emergency and people are ill, call 911.**
- If you have questions or concerns about a pesticide application, call your County Agricultural Commissioner as soon as possible. You can get the number and be connected toll-free by calling 1-87PestLine (1-877-378-5463).
- Agricultural Commissioners investigate pesticide incidents and illnesses, and can assess fines and other penalties if laws have been broken.
- You can use the form on page 30 to make notes about a pesticide incident to help answer questions an investigator may ask.

How do I report a pesticide problem?

Many cases of pesticide misuse don't involve emergencies. But emergency or not, pesticide problems should be reported so they can be investigated. Call the County Agricultural Commissioner's office. They will look into your complaint. The phone number is on the inside back cover of this booklet, or call 1-87PestLine to be connected. After-hours or on weekends, call the non-emergency number of your local police or sheriff's department. (You can find the number in the government pages of your local phone directory.) They will contact appropriate authorities.

Don't delay reporting. Prompt reporting is the best way to make sure investigators can find the facts of the case and collect useful evidence.



If you see a pesticide problem or have a question about an application, call your County Agricultural Commissioner. The number is on the inside back cover of this booklet. You can also call DPR's information line, 1-87PestLine (1-877-378-5463).



If you file a complaint about pesticide use, you will be asked for certain information. You can use the form beginning on page 30 to make notes before you call.

Will I be told the results of the investigation into my complaint?

If you ask, the Commissioner's office will let you know in writing the results of the investigation.

After you have handled any medical emergency, you may want to write down what happened. The form beginning on page 30 will help you make notes. If you don't have the form handy, here are the general things you should write down:

- When and where the incident happened.
- Who was involved (if you know).
- What you saw.
- What you smelled, if anything.
- Names and symptoms of anyone who was sick.

Remember: You can file your complaint anonymously with your Agricultural Commissioner, if you wish. But it helps the county's follow-up investigation if you leave your contact information.

You can also ask the county to send you written information on the outcome of the investigation.

If you don't want anyone to know you made a report, you can ask the Commissioner's office not to reveal your name.

What happens when I file a complaint?

The Agricultural Commissioner's staff will gather evidence to find out if pesticide laws were broken. They typically:

- Interview the people involved. This may include you, the applicator, the property operator, workers, neighbors, and others affected by or near the incident.
- Collect evidence for laboratory analysis.
- Check pesticide use records and laboratory results to find out if a pesticide was used, what it was, and if it drifted.
- Write a report on the investigation.
- If the evidence shows that laws were broken, the Agricultural Commissioner can penalize the violator.
- Let you know in writing the result of the investigation into your complaint, if you request it.

Completing these steps may take weeks or months, depending on the complexity of the investigation.

Who investigates pesticide illnesses?

County Agricultural Commissioners investigate all reported pesticide-related illnesses. If you go to a doctor or the hospital, make sure the doctor knows to call the County Health Officer to report the illness. A doctor's report can help in the investigation and in setting penalties for violators.

After the Agricultural Commissioner's staff complete their investigation, they prepare a report describing what occurred. If they found violations, they can also assess fines and other penalties. Agricultural Commissioners send their reports to DPR where scientists look for illness trends and potential problem areas. Scientists at DPR and the U.S. Environmental Protection Agency also rely on the information to improve use practices and safety information on pesticide labels.



To investigate complaints, staff from the County Agricultural Commissioner's office will gather evidence to find out if pesticide laws were broken.

What are the penalties for breaking pesticide use rules?

Penalties are based on how serious the violation was. They include warning letters, fines imposed by the Commissioner or a court, and action that suspends or cancels a violator's license to do business. Fines start at fifty dollars for minor offenses to as high as tens of thousands of dollars for violations where people are injured. Regulations spell out when Agricultural Commissioners should impose a fine, based on how serious the violation was and the violator's record.

Commissioners can also work with local district attorneys to prosecute serious cases. Incidents are considered serious when someone is hospitalized, when several people are injured, or when there is significant property or environmental damage.



What if the environment or wildlife is harmed?

We at DPR work closely with the County Agricultural Commissioners and the State Department of Fish and Game to investigate pesticide incidents that harm birds, fish, or other wildlife. We also work with State and Regional Water Boards on complaints involving contamination of rivers and streams. Commissioners, the Fish and Game Department, and the Water Boards can impose penalties for damage to wildlife or the environment.

You can report industrial and agricultural pollution that harms fish and wildlife by calling CalTIP, “Californians Turning In Poachers and Polluters,” managed by the State Department of Fish and Game. The toll-free number--1-888-DFG-CALTIP (1-888-334-2258) operates 24 hours a day, 7 days a week. You may remain anonymous.

If I am not satisfied with the results of the investigation, what should I do?

If your complaint was not handled the way you expected, you should call the Agricultural Commissioner’s office and ask to speak to the Commissioner directly about your concerns. We want to ensure that people understand the answers they receive and that their concerns are handled correctly. We encourage you to work with the Commissioner’s office. You can also call the Department of Pesticide Regulation where staff can explain the process. You’ll find phone numbers at the front of this booklet.

What information do I need to file a complaint?

The County Agricultural Commissioners need to know what you saw, heard, or smelled. If plants were in the path of a drift, you may wish to take pictures so you can show what they were like before they were affected. Damage to plants sometimes takes a while to appear. But remember that many things can damage plants, including frost, insects, diseases, or too much or too little watering. Try to eliminate these causes first. The Master Gardeners at your UC Cooperative Extension office can help you diagnose plant problems.

Write down everything you saw, heard, or smelled as soon as you can. Be as factual as possible. The form on beginning on page 30 will help you put down your thoughts and observations. If you can’t write down the information yourself, ask someone to help.

What Are the Potential Health Effects of Pesticides?

At a Glance

- Toxicity is the ability of a chemical to cause harm to health. The amount needed to cause harm depends on the chemical.
- With most pesticides, the longer you are exposed the greater the chance of harm.
- People can be exposed by breathing a pesticide, getting it into the mouth (by eating or drinking, for example), or by contact with the skin or eyes.
- Some people are more at risk than others, depending on their age, gender, individual sensitivity, or other factors.

Although pesticides are intended to harm only the target pest, if not used correctly, they can also harm people or the environment.

The presence of a pesticide in the environment is not necessarily a problem, but it may be a source of exposure. As with all toxic substances, whether the exposure causes harm depends on the dose, how someone is exposed, how sensitive an individual may be to that toxin, and the toxicity of the pesticide involved.

What do you mean, "Risk = Toxicity + Exposure"?

Toxicity is the capacity of a chemical to cause harm to health. The amount needed to cause harm depends on the chemical. Like other chemicals, some pesticides are more toxic than others. A small quantity of a highly toxic pesticide



With most (but not all) pesticides, the more a person is exposed to a particular substance, the greater the chance of harm. Two aspirin may get rid of your headache, but a bottle will make you sick.



Humans can be exposed to pesticides by breathing it, getting it into their mouth, or absorbing it through the skin.

can cause great harm, but almost any substance can cause harm in large enough doses. That's why, when we consider risk, we consider both the toxicity and your exposure to it (how, how much, how long).

With most (but not all) pesticides, the more a person is exposed to a particular substance, the greater the chance of harm. Two aspirin may get rid of your headache but an entire bottle will make you sick. And for some people, aspirin may be harmful even at low doses. The degree of harm depends on the chemical, the situation, and the person. The same is true of pesticides. Very small amounts of even the most toxic materials may do no or immeasurably small harm. Less toxic materials in large amounts can cause great harm.

How are people exposed to pesticides?

People can be exposed to pesticides in three ways:

- Breathing (inhalation exposure).
- Getting it into the mouth or digestive tract (oral exposure).
- Contact with the skin or eyes (dermal exposure).

Pesticides can enter the body by any one or all three of these routes. Inhalation exposure can happen if you breathe air containing pesticide as a vapor, as an aerosol, or on small particles like dust. Oral exposure happens when you eat food or drink water containing pesticides. Dermal exposure happens when your skin is exposed to pesticides. This can cause irritation or burns. In more serious cases, your skin can absorb the pesticide into the body, causing other health effects.

Some pesticides evaporate more easily than others so they are more likely to be inhaled. Some break down quickly on surfaces; others last longer. A pesticide applied as a liquid spray may drift more easily than dry granules. A pesticide sealed in a trap is less likely to be eaten accidentally by a child or a pet. A dry pesticide plowed into the soil can be dangerous to groundwater, but is not as likely to drift through the air. All these factors affect the potential risk of human exposure and are considered when DPR makes rules for pesticide use.

Does how long you are exposed make a difference?

Generally, the longer or more often a person is exposed to a given amount of a pesticide, the greater the chance of harm. We at DPR consider both how long and how often someone might be exposed when we develop rules for pesticide use. For example, we know that fumigant pesticides slowly escape into the air during the hours or days after an application. (Fumigants are gaseous pesticides injected into the soil or released into buildings.) When we evaluate controls on fumigant use, we work to make sure people near an application, including workers and nearby residents, are protected over both short and long periods.

Are some people more at risk than others?

Pesticides affect different people differently. Children may be more sensitive to some pesticides than adults. Compared to adults, they breathe in more air and eat more food relative to their body size, increasing their exposure. When they play on floors or lawns or put objects in their mouths, they increase their chance of exposure to pesticides used in yards or lawns. Also, their developing bodies may not break down some chemicals as effectively as adults.

People of any age with asthma or other chronic diseases may be more likely than healthy individuals to get sick after pesticide exposure. Some individuals are also more sensitive to the odor or other irritant effects of certain pesticides.

But no matter what their individual sensitivities, people in the greatest danger of pesticide illness are those whose exposure is highest, such as workers who mix or apply pesticides. People who use pesticides in their homes may also be overexposed and become ill, especially if they do not carefully follow the directions on the product label. People living near agricultural fields are more likely than urban residents to be exposed to farm chemicals (although their exposure may not necessarily be high enough to cause harmful effects).



Because they are smaller, children get a larger dose from a given exposure to pesticides. Regulators take this into consideration when they develop restrictions on pesticide use.

This form will help you record your notes about a pesticide incident or illness.
The information can help investigators find out what happened.

GENERAL INFORMATION

You do not need to provide personal information if you do not want to. You can file a complaint without giving your name or the name of anyone else.

Your name _____

Your address _____

Do you want a copy of the incident report mailed to you? Yes No

Your phone number _____

Names of other witnesses (if you know them) _____

DESCRIBE WHAT HAPPENED

Where the incident happened (please write in the street address or the general location) _____

The date and time of the incident _____

Was it: Indoors Outdoors

If it was indoors, was it:

At home At a school At work Other (please specify) _____

If it was outdoors, was it:

In your back yard On your street In a park

In your front yard At a school playground Along a road

In an agricultural field Other _____

How far away were you? _____

What did you see? Describe what happened. *For example, did you see a pesticide application nearby? Was there a spill or a leak? Was the pesticide being sprayed? Being mixed? Transported?* _____

If you saw it, describe the equipment being used to apply the pesticide

- A tractor. Was the tractor spraying up or down? Up Down
- A hand-held or backpack sprayer A helicopter An airplane
- Other _____

Use this space to make notes about the color, license number, or other markings on the equipment used to apply the pesticide: _____

Did you see any dust or particles? Yes No

Describe the weather:

Wind

- No wind
- Light breeze
- Medium wind
- Strong wind
- Gusty winds

Wind direction from the:

- North
- South
- East
- West
- From direction of this landmark: _____

Skies

- Clear
- Cloudy
- Foggy
- Raining/drizzling

If you know, what was the name of the pesticide? _____

If you know the name of the company, utility, or government agency doing the application (for example, you saw their truck), write it here: _____

WHAT WERE THE EFFECTS?

Did you smell or taste anything unusual? If so, describe it as best you can. *Try to associate the odor with something familiar, like rotten eggs, sweet or sour chemicals, garlic, or chlorine. Some other descriptions are oily, metallic, sharp, burning, light or heavy.*

Did you feel anything on your skin, eyes, or clothing? Yes No

Did you inhale fumes? Yes No

Did you eat contaminated food? Yes No If yes, what was it? _____

Was anyone injured? Yes No

If yes, when did they start feeling sick? _____

Name of the injured person, or the type of animal or plant injured. _____

(You don't have to provide names or other personal information, if you do not want to.)

Address of injured person _____

(If you know the names of other people who were injured, you can write them below)

What were their symptoms? What part of the body was affected? How long did the symptoms last?

Did the injured person go to the doctor or to the hospital? If so, please list the name of the doctor or hospital, and phone number if you have it. _____

Call your County Agricultural Commissioner if you have concerns about pesticide use in your area. Call the number below, or toll-free 1-87PestLine to be connected directly.

Alameda	510/670-5232	www.acgov.org/cda/awm/
Amador	209/223-6487	www.co.amador.ca.us/depts/agriculture/index.htm
Butte	530/538-7381	www.buttecounty.net/agcommissioner/
Calaveras	209/754-6504	www.co.calaveras.ca.us/
Colusa	530/458-0580	www.colusacountyclerk.com
Contra Costa	925/646-5250	www.co.contra-costa.ca.us/
Del Norte	707/464-7235	www.co.del-norte.ca.us/
El Dorado/ Alpine	530/621-5520	www.co.el-dorado.ca.us/ag/
Fresno	559/456-7510	www.co.fresno.ca.us
Glenn	530/934-6501	www.countyofglenn.net
Humboldt	707/445-7223	www.co.humboldt.ca.us
Imperial	760/482-4314	www.imperialcounty.net
Inyo/Mono	760/873-7860	www.inyomonoagriculture.com
Kern	661/868-6300	www.co.kern.ca.us\kernag\
Kings	559/582-3211 ext. 2830	www.countyofkings.com
Lake	707/263-0217	www.co.lake.ca.us
Lassen	530/251-8110	www.co.lassen.ca.us/govt/dept/ag_comm/
Los Angeles	626/575-5451	http://acwm.co.la.ca.us
Madera	559/675-7876	www.madera-county.com/agcommissioner/
Marin	415/499-6700	www.co.marin.ca.us/depts/AG/main/
Mariposa	209/966-2075	www.mariposacounty.org
Mendocino	707/463-4208	www.co.mendocino.ca.us
Merced	209/385-7431	www.co.merced.ca.us/ag/
Modoc	530/233-6401	www.infopeople.org/modoc/codept.html
Monterey	831/759-7325	www.co.monterey.ca.us/ag/
Napa	707/253-4357	www.co.napa.ca.us/
Nevada	530/273-2648	http://new.mynevadacounty.com/
Orange	714/447-7100	www.ocagcomm.com/
Placer	530/889-7372	http://www.placer.ca.gov/agriculture/agri.htm
Plumas/Sierra	530/283-6365	http://www.countyofplumas.com/ , www.sierracounty.ws
Riverside	951/955-3045	www.rivcoag.org
Sacramento	916/875-6603	www.saccounty.net/agcomm/index.html
San Benito	831/637-5344	www.san-benito.ca.us/
San Bernardino	909/387-2115	www.sbcounty.gov
San Diego	858/694-2741	www.sdcawm.org
San Francisco	415/252-3830	www.sfdph.org/eh/
San Joaquin	209/468-3300	www.sjgov.org
San Luis Obispo	805/781-5910	www.slocounty.ca.gov/agcomm
San Mateo	650/363-4700	www.co.sanmateo.ca.us
Santa Barbara	805/681-5600	www.countyofsb.org/agcomm
Santa Clara	408/918-4600	www.sccagriculture.org/
Santa Cruz	831/763-8080	www.co.santa-cruz.ca.us/
Shasta	530/224-4949	www.co.shasta.ca.us
Siskiyou	530/841-4033	www.co.siskiyou.ca.us
Solano	707/784-1310	http://www.co.solano.ca.us/
Sonoma	707/565-2371	www.sonoma-county.org/agcomm/index.htm
Stanislaus	209/525-4730	www.stanag.org
Sutter	530/822-7500	http://www.co.sutter.ca.us/doc/government/depts/ag/aghomet
Tehama	530/527-4504	www.tehamacountyadmin.org/index.cfm
Trinity	530/623-1356	www.trinitycounty.org
Tulare	559/685-3323	http://agcomm.co.tulare.ca.us
Tuolumne	209/533-5691	http://www.infonettc.org/
Ventura	805/933-8415	www.ventura.org
Yolo	530/749-5400	www.yolocounty.org
Yuba	530/749-5400	www.co.yuba.ca.us

Note: This list was compiled in early 2008. If the number has changed and you have difficulty connecting, call 1-87PestLine to be connected directly.



Arnold Schwarzenegger, *Governor*

Linda S. Adams

Secretary for Environmental Protection

Mary-Ann Warmerdam, *Director*

Department of Pesticide Regulation

April 2008

Department of Pesticide Regulation

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General Information
916/445-4300

Enforcement Branch
916/324-4100

Enforcement Regional Offices

Northern Regional Office (Sacramento)
916/324-4100

Central Regional Office (Fresno)
559/243-8111

Southern Regional Office (Anaheim)
714/279-7690

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