

# The Pesticide Label



**Cooperative Extension Service**  
College of Tropical Agriculture and Human Resources  
University of Hawai'i at Mānoa

## *Key to Pesticide Safety and Education*

April–June 2014

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### Regulatory Updates

#### Special Local Need Registration

#### NEW since the last issue of this newsletter

- None

#### EXPIRES April 1–September 30, 2014

- EPA SLN Number **HI-100005**, for the product **ETHREL® brand Ethephon Plant Regulator**, with EPA Reg. No. **264-267**, to treat **macadamia trees**, expires September 6, 2014.
- EPA SLN Number **HI-840004**, for the product **ETHREL® brand Pineapple Growth Regulator for Pineapple and Sugarcane**, with EPA Reg. No. **264-257**, to treat **macadamia trees**, expires September 6, 2014.

RECERTIFICATION CREDITS may be earned by certified applicators who score at least 70% on the set of comprehension evaluation questions about the recertification articles in this newsletter. These articles have a title followed by “(recertification).” However, credits may not necessarily be applicable for the following categories: Private 2, Private 3, Commercial 7f, and Commercial 11. The quizzes are written and administered by the Hawaii Department of Agriculture staff. To ask about earning recertification credits on Hawaii call Derek in Hilo at (808) 974-4143. On Oahu, Kauai, Maui, Lanai, and Molokai, call Honolulu at (808) 973-9424.

## How to Find Bed Bugs

(recertification)



**Adult bed bugs are about 4-5 mm long (0.15-0.2 in), yellowish to reddish brown.** Photo courtesy of G. Alpert, Bugwood.org

As with any invasive organism, the earlier you find bed bugs (*Cimex lectularius*) the better chance you have of containing and eradicating them before they can spread. However, early infestations can be difficult to find, even if you know where to look.

A correct identification of the insects is essential. Bed bugs may be confused with other insects. If misidentified, the time wasted can allow the bed bugs to multiply and spread. Being bitten by “something” during the night is not a good enough identification to base an eradication effort on.

How do you find bed bugs, and once you find them how do you know they are actually bed bugs? There are often signs of their presence that will help you identify these insects. Knowing some of the common places bed bugs inhabit and how they live will also help you find them.

### Looking for Signs of Bed Bugs

Signs of these insects are most often found where they feed and include:

- rust-colored spots on sheets or mattresses from crushed bed bugs.
- small dark spots on fabrics from insect excrement.
- small white eggs or parts of shells about the width of a pencil lead.
- yellowish skin that nymphs shed as they grow.
- live bed bugs



**Adult bed bug, shed exoskeleton and blood spots on a bed spring.** Photo courtesy of G. Alpert, Bugwood.org

For help identifying the different stages of bed bugs—eggs to adults—visit the EPA website at <http://www2.epa.gov/bedbugs/bed-bugs-appearance-and-life-cycle>

### Places Bed Bugs Inhabit

When not feeding, bed bugs can inhabit a variety of places, some of them very small. Eggs and immature bed bugs are



**Bed bugs are often found wedged in tight spaces such as seams in chair and couch cushions, and in mattresses and box springs.** Photo courtesy of G. Alpert, Bug-wood.org

1 to 2 mm (0.04–0.08 in) long, adults 4 to 5 mm (0.16 to 0.20 in) long. Some common places are:

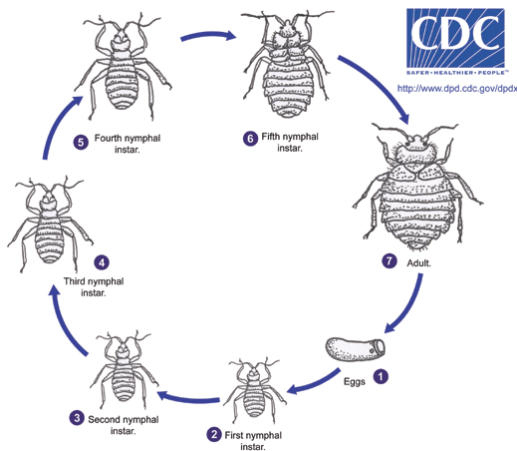
- the seams of chairs and couches, between cushions, and in the folds of curtains.
- in the joints of drawers.
- in electrical receptacles and appliances.
- under loose wall paper and wall hangings.
- at the junction where the wall and the ceiling meet.
- the notch in the head of a screw.

## Lives and Habits of Bed Bugs

Understanding the behavior of bed bugs (how they eat, live, and reproduce) will help you to find an infestation before it becomes established. It will also help you keep track of their population growth, especially if they reappear after your home has been treated

### Feeding

- They appear to prefer feeding on humans, but will also feed on pets, birds, and other mammals.
- They will travel up to 20 feet from their homes to feed on a human or other host.
- They are primarily active at night; if hungry they will seek hosts in full daylight.
- Feeding usually takes 3 to 12 minutes.
- Rusty or tarry spots on bed sheets or in the bugs' homes are from adults and large nymphs that occasionally discharge remains of earlier blood meals while still feeding.



**Life cycle of bed bugs beginning with the egg (lower right), followed by five stages of the nymph, then the adult (at 3 o'clock).** Photo from Centers for Disease Control and Prevention

### Life stages/mating

- A bed bug needs at least one blood meal before it can develop to the next of the six life stages.
  - They can feed more than once.
  - Each stage also requires the molting (shedding) of skin.
- To continue to mate and produce eggs, both males and females must feed at least once every 14 days.
- Each female may lay 1 to 3 eggs per day and can lay 200 to 500 eggs in her lifetime, which is 6 to 12



An individual bed bug egg is only about 1 mm (0.06 in) long. Photo by M. El Damir, Bugwood.org



Bed bugs following a blood meal. Photo courtesy of A. Szalanski, Bugwood.org.

months or longer.

- An egg-to-egg life cycle may take four to five weeks under favorable conditions.

### Living conditions

- Bed bugs can survive and remain active at temperatures as low as 7°C (46°F), but die when if their body temperature reaches 45°C (113°F).
  - To kill bed bugs with heat, a room must be hotter than 45°C to ensure that continuous heat reaches the bugs.
- Common bed bugs (*Cimex lectularius*) are found almost anywhere their host can live.
- Tropical bed bugs (*Cimex hemipterus*) require a warmer climate than the common bed bug. To date, only the common bed bug has been reported in Hawaii.

### Bed Bugs in Hawaii

Bed bugs are a people problem. They feed on and are carried from place to place by humans. Hawaii's massive tourist industry and mild climate are perfect for the introduction and spread of this pest.

If you travel, be aware that places you stay might be infested with bed bugs. Look for signs of bed bugs in hotel or motel rooms. If you think they might be present, check your luggage when you leave and again when you return home. Vacuum your luggage thoroughly before storing it. Wash clothing in hot water before returning it to closets or drawers. The same caution applies when bringing used furniture into your home, especially bedroom furnishings.

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### For more information about bed bugs:

EPA home page at <http://www2.epa.gov/bedbugs>

Hawaii Department of Health

<http://health.hawaii.gov/san/files/2013/06/Vector-Bedbuginfo.pdf>

This article is based on the EPA publication at <http://www2.epa.gov/bedbugs/how-find-bed-bugs>

# Protecting Children from Poison Emergencies

(recertification)



**Do not put poisonous substances in containers where children might mistake them for food or drink.** Photo U.S. Environmental Protection Agency

This safety and treatment advice for parents is from the American Academy of Pediatrics.

More than 1.2 million American children under the age of 6 swallow or come into contact with poisonous substances each year.

The American Academy of Pediatrics (AAP) offers advice on preventing and treating poisonings.

Medicines, pesticides, cleaning products, furniture polish, antifreeze, windshield-wiper fluid, gasoline, kerosene and lamp oil are among the most dangerous potential poisons in or near the home.

Most child poisonings occur when parents or caregivers are at home but not paying attention to youngsters, the AAP said in a news release. It's important to be especially watchful when there is a change in household routine, such as holidays, visits to and from relatives, and other special events.



**Pesticides and other toxic chemicals are common around the home. They should be kept out of the sight and reach of children, preferably in a locked cabinet or container.** Photo courtesy of G. Holmes, Bugwood.org

Store medicines, pesticides, cleaning and laundry products, and paints and varnishes in their original packaging in locked cabinets or containers that are out of sight and reach of children.

Check the label every time you give a child medicine to ensure the correct dosage, the AAP said. When giving children liquid medicines, use the dosing device that came with the product. Never call medicine "candy" or other appealing names and be sure to throw out unused medicines. Never put poisonous items in food or drink containers.

If your child has swallowed or come in contact with poison and is unconscious, not breathing or having convulsions, call 911 or your local emergency number immediately.

## U.S. EPA's Kid-Safe Checklist

- Read the label first. Follow the directions as they are written on the label before using a product.
- Crawl around on your hands and knees to see if you've missed any potential dangers from your child's viewpoint.
- Use child-resistant packaging correctly by tightly sealing the container after every use.
- Install safety latches on cabinets.
- Re-close a pesticide package if ever interrupted during application (e.g., phone call, doorbell, etc.). Make sure the container is completely out of children's reach while you're absent.
- Keep pesticides in their original containers. Never put poisonous products in containers that could be mistaken for juice or food.
- Alert all caregivers about the potential dangers of pesticides and share these tips with them.
- Teach children that "pesticides are poisons" and not to be touched.
- Lock up all pesticides and harmful products in a cabinet, out of a child's reach.

EPA 735-K-07-003 July 2007

<http://www.epa.gov/oppfead1/Publications/playitsafe.pdf>

ately, the AAP said. If your child has swallowed poison, have the child spit out any remaining substance, but do not make the child vomit and do not use syrup of ipecac.

If a child's skin has come into contact with poison, remove the child's clothes and rinse the skin with lukewarm water for at least 15 minutes, the AAP said.

If poison has gotten into a child's eyes, flush their eyes by holding the eyelid open and pouring a steady stream of room-temperature water into the inner corner of the eye for 15 minutes, the AAP said.

If a child has been exposed to poisonous fumes, take the child outside or into fresh air immediately. If the child is not breathing, start CPR and do not stop until the child breathes on his or her own, or until another person can take over CPR.

This article by Robert Preidt appeared Saturday, April 12, 2014 in the HealthDay News. The source of its content was an American Academy of Pediatrics news release.

### More information

The U.S. Centers for Disease Control and Prevention has more about [poison prevention](#).

## WPS Comment Period Extended

The U.S. EPA has extended the deadline to comment on its proposed changes to the Worker Protection Standard (WPS) until 18 August 2014. For more information on the proposed changes and how to comment, go to <http://www.epa.gov/pesticides/safety/workers/proposed/index.html>

On this webpage you can read about the proposed changes compared to the current WPS rules, get tips on commenting, and read some things to consider when responding to the main areas of change. The following is a brief overview of proposed changes to the WPS:



Signage regulations are expanded and strengthened under the proposed changes to the Worker Protection Standard. Image from [federalregister.gov](http://federalregister.gov)

- Increased frequency of mandatory trainings (from once every five years to annually) to inform farm workers about the protections they are afforded under the law, including restrictions on entering pesticide-treated fields and surrounding areas, decontamination supplies, access to information and use of personal protective equipment. Expanded trainings will include instructions to reduce take-home exposure from pesticides on work clothing and other safety topics.
- Expanded mandatory posting of no-entry signs for the most hazardous pesticides; the signs prohibit entry into pesticide-treated fields until residues decline to a safe level.
- First-time-ever minimum age requirement: Children under 16 will be prohibited from handling pesticides, with an exemption for family farms.
- No-entry buffer areas surrounding pesticide-treated fields will protect workers and others from exposure from pesticide overspray and fumes.
- Measures to improve the states' ability to enforce compliance including requiring employers to keep records of application-specific pesticide information as well as farmworker training and early-entry notification for two years.
- Personal Protection Equipment (respirator use) must be consistent with the Occupational Safety

## MATERIAL SAFETY DATA

### SECTION 4 - FIRST AID

**act:** Flush with large amounts of water for at least 15 minutes. Do not  
**act:** Wash affected area gently with soap and water. Skin cream or  
: Do not induce vomiting; drink plenty of water.  
**n:** Remove affected person to clean fresh air.  
\*\*If any of the symptoms persist, seek medical attention immediately.

### SECTION 5 - FIRE FIGHTING MEASURES

**fl:** Non-combustible  
**ing media:** Use extinguishing media appropriate to the surrounding fire.  
**hazards:** None  
**ig equipment:** Wear full bunker gear including positive pressure self-contained breathing apparatus.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

**cedures:** Avoid creating airborne dust. Follow routine housekeeping procedures. Use HEPA filtered equipment. If sweeping is necessary, use a dust suppressant. Do not use compressed air for clean-up. Personnel should wear an approved respirator. Avoid clean-up procedures that could result in exposure to dust.

### SECTION 7 - HANDLING AND STORAGE

Limit use of power tools unless in conjunction with local exhaust ventilation. Frequently clean the work area with HEPA filtered vacuum or HEPA filtered air. Do not use compressed air for clean-up.

This product is stable under all conditions of storage. Store in a cool, dry place.

Material Safety Data Sheets, now called Safety Data Sheets, give important and potentially useful information about the active ingredients of pesticide products. Image from Wikimedia commons

and Health Administration standards for ensuring respirators are providing protection, including fit test, medical evaluation, and training.

- Make available to farm workers or their advocates (including medical personnel) information specific to the pesticide application, including the pesticide label and Safety Data Sheets.
- Additional changes make the rule more practical and easier to comply with for farmers.
- Continues the exemptions for family farms.

EPA would like to know your thoughts on the:

- need for a change, the value of any changes, and any alternatives to the proposed changes.
- studies and scientific articles used as a basis of this proposed rule.
- clarity of the proposed revisions.
- ability to effectively enforce the proposed regulation.
- economic analysis of the proposed rule, including its underlying assumptions, economic data, high- and low-cost options and alternatives, and benefits.

Comments can be made through either the Federal eRule-making Portal <http://www.regulations.gov>, by mail, or by hand delivery.

The above information is from the EPA website <http://www.epa.gov/pesticides/safety/workers/proposed/index.html>



## Least Toxic, Last Resort—Another Opinion

### What is IPM?

**U.S. EPA:** Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.

The IPM approach can be applied to both agricultural and non-agricultural settings, such as the home, garden, and workplace. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides. In contrast, organic food production applies many of the same concepts as IPM but limits the use of pesticides to those that are produced from natural sources, as opposed to synthetic chemicals.

### University of California:

Integrated pest management (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

To many promoters of Integrated Pest Management (IPM), pesticides are to be avoided if possible. The “least toxic” pesticides are to be used, and then only as the “last resort.” In our January–March 2013 issue of *The Pesticide Label*, we presented the views of the Weed Science Society of America, the American Phytopathological Society, and the Plant-Insect Ecosystems Section of the Entomological Society of America. Their 12 November 2012 statement is accessible through the WSSA website at <http://www.wssa.net/>. They cautioned against a blanket application of this approach, arguing that there were times when the only effective pesticide available was not the least toxic. Further, using a pesticide as a last resort may allow a pest population to grow to an unmanageable size.

The following is an interview with Brian Leahy, appointed director of the California Department of Pesticide Regulation (CDPR) in February 2012. Mr. Leahy, previously manager of an 800-acre organic farm in Nebraska in the early 1990s, is asked for his views on the use of pesticides in organic and commercial farming. The following questions about organic and conventional pesticides were asked of Mr. Leahy, the U.S. Department of Agriculture and the U.S. Environmental Protection Agency,

**Question:** In 1980, you took over the operations of a 900-acre rice farm in Northern California that converted to organic farming practices. You also managed an 800-acre organic corn, soybean, alfalfa, and cattle farm in Nebraska in the early 1990s and served as executive director of the California Certified Organic Farmers from 2000 to 2004. As a pioneer in organic farming practices, why did you want to be the head of CDPR?

**Answer:** I wanted to head CDPR for the same reason I became an organic farmer: to change society’s relationship with chemistry and reduce the risk from pesticides. Overall, my focus is change – and how to bring it about. I want to show people that you can effectively manage pests by using pesticides as a last resort and choosing ones that are less toxic to people. And I want to transition away from older, more

toxic pesticides and help accelerate the development of more benign products and practices to control pests. At the same time, we have to ensure that if farmers choose to use pesticides, they do so in a manner that is protective of people and the environment. I also believe that, having farmed and having a good understanding of agriculture and resource management, I can see what progress is possible, what the barriers to change are and why pesticides will always be part of modern life.

**Question:** What is your biggest challenge as a pesticide regulator?

**Answer:** With nearly 38 million people, California is both the most populated state as well as the most productive agricultural state in the nation. California produces more than 50 percent of the nation's fruit, nut and vegetable crops. Pest control is vital to maintain our vibrant agricultural industry. The greatest challenge to agriculture in California is the urban and agricultural conflict. People are living closer to farms and urban neighbors are far less willing to accept farming practices that were once considered necessary. Pesticide application or fumigation are examples of this. The public expects new pesticides to be more benign and they expect us to protect public health and the environment. In addition, at CDPR we recognize that the non-professional user of pesticides (such as homeowners, unlicensed landscapers and janitors) can cause unnecessary damage to human health and the environment. California has the nation's most comprehensive program to regulate pesticide use. CDPR staff includes medical doctors, toxicologists and environmental scientists with expertise in pesticides. Our job is to enforce restrictions intended to ensure the proper and safe use of pesticides. We develop comprehensive safety measures, unique to California, to protect neighboring communities and sensitive sites like schools that are located in agricultural areas.



California agriculture produces over 50 percent of the nation's fruits, nuts, and vegetables.



**Pesticides are needed to protect our food supply and public health. They should be used along with other means of reducing pest populations when possible and always according to their labeling.** Photo courtesy of H. Schwartz, Bugwood.org.

**Question:** Are pesticides necessary?

**Answer:** Pesticides are an important tool to grow food and to protect public health and the environment. Our modern food supply, public health and resource management all rely on pesticides. CDPR aims to protect human health and the environment as pesticides are used and to foster reduced-risk pest management through research, grants and recognition. We encourage the use of pesticides as a last resort and the use of pesticides that are less toxic to people. This strategy, known as Integrated Pest Management (IPM), emphasizes the natural control and prevention of pests. The IPM approach and many of the reduced-risk pest management tools that are developed and promoted with CDPR support are valuable to conventional and organic producers alike.

**Question:** Should consumers be concerned about pesticide residues on produce?

**Answer:** In California, CDPR purchases fresh organic and conventionally grown produce at retail and wholesale outlets, distribution centers and farmers' markets throughout the state to test for illegal pesticide residues. We give special emphasis to commodities consumed by infants and children. Our fresh produce pesticide residue monitoring program – the largest state program of its kind – is in addition to the U.S. Food and Drug Administration's food safety program, and the U.S. Department of Agriculture's Pesticide Data Program that evaluates pesticide residues on agricultural commodities, including organic commodities, in the U.S. food supply. All programs consistently confirm that most produce has no detectable pesticide residues, and residues that are detected generally fall well below allowable limits to protect public health.

**Answers provided by USDA and U.S. EPA**

**Question:** How can the public be confident that pesticides with no tolerance levels are safe?

## What is a tolerance?

**U.S. EPA:** Before allowing the use of a pesticide on food crops, EPA sets a tolerance, or maximum residue limit, which is the amount of pesticide residue allowed to remain in or on each treated food commodity. The tolerance is the residue level that triggers enforcement actions. That is, if residues are found above that level, the commodity will be subject to seizure by the government.



This official USDA-AMS logo is a marketing signal to consumers. It is backed by federal law and enforced by the USDA. Farmers using this symbol must closely follow the rules of the National Organic Program (NOP). The NOP is a marketing program, not a nutrition nor a food safety program, such as Good Agricultural Practices (GAPs). Source: Hollyer, J., et al. 2013, The Allowed Use of Commercial Fertilizers, Pesticides, and Synthetic Substances on U.S. Farms Under the USDA National Organic Program. CTAHR Publication FST-56.

**Answer:** A tolerance, or the exemption from the requirement of a tolerance, must be established for each active and inert ingredient in the formulation before a pesticide can be registered for use on a food or feed crop, or for use in a food processing or storage area. Pesticides registered for use on organic and conventional crops undergo the same rigorous scientific evaluation by U.S. EPA to ensure they will not harm people when used according to label instructions. When a pesticide is exempt from the requirement of a tolerance, this means the agency has determined that all levels of the pesticide that may remain in food under the conditions of use are safe. More information on tolerances is posted at:

<http://www.epa.gov/pesticides/bluebook/chapter11.html>.

**Question:** Which pesticides approved for use on organic crops are exempt from the requirement of a tolerance level?

**Answer:** Pesticides approved for use on organic crops and exempt from the requirement of a tolerance are on the following list:

- [USDA's National Organic Program National List of Allowed and Prohibited Substances](#)

**Question:** What is a minimum-risk pesticide?

**Answer:** Minimum-risk pesticides are a special class of pesticides not subject to federal registration requirements because their ingredients are considered safe if used according to label directions. A list of exempt active ingredients is posted at:

[http://www.epa.gov/oppbppd1/biopesticides/registration/25b\\_list.htm](http://www.epa.gov/oppbppd1/biopesticides/registration/25b_list.htm).

**Question:** What data sources are available to the public that show pesticide use on organic crop production?

**Answer:** Since 1991, the National Science Laboratory (NSL) chemistry staff has performed pesticide residue analysis for the annual USDA Pesticide Data Program report. This program evaluates pesticide residues on agricultural commodities, including organic commodities, in the U.S. food supply, emphasizing commodities highly consumed by infants and children:  
<http://www.ams.usda.gov/PesticideDataProgram>

In 2010, the NSL also performed the testing for the National Organic Program's pesticide residue testing pilot study titled "2010–2011 Pilot Study: Pesticide residue Testing of Organic Produce." This study included 571 domestic and foreign fruit and vegetable samples bearing the USDA organic seal. View the full report at:  
<http://bit.ly/residue-pilot-study>.

**Question:** Are there less pesticide residues on organic crops than on conventionally grown crops?

**Answer:** Some of the studies evaluating this relationship are described in the discussion of the Pilot Study report: <http://bit.ly/residue-pilot-study>.

**Question:** In November 2012, the USDA Agricultural Marketing Service announced there would be mandatory pesticide residue testing, effective Jan. 1, 2013. This rule requires that certifying agents must annually sample and conduct residue testing from a minimum of 5 percent of the operations they certify. What is the intent and significance of this new testing program?

**Answer:** This additional testing will help certifying agents identify and take enforcement action against farms and businesses intentionally using prohibited substances or methods. Additionally, certifying agents can use test results to identify and address instances in which organic products may have unintentionally come in contact with prohibited substances. For example, when test results suggest pesticide drift from neighboring

farms or facilities, this could lead certifying agents to require a larger buffer zone between the organic and non-organic farms or better cleaning before organic products use shared handling facilities. Overall, this action will discourage mislabeling and tighten oversight of USDA organic products. This increased oversight will increase consumer confidence in organic products worldwide, supporting continued growth of the \$32 billion organic industry in the United States. Supplementary information can be found at:

- [Final Rule: Periodic Residue Testing](#)  
Strengthens testing requirements in USDA organic regulations
- [Pilot Study: Pesticide Residue Testing](#)  
Serves as a model for pesticide residue testing projects
- [Consumer Questions and Answers](#)

**Question:** Are these data available to the public?

**Answer:** Certifying agents must retain the residue testing results and make them available to the public upon request. USDA auditors review these results during each certifying agent's audit.

This article is from the Alliance for Food and Farming's website

<http://safefruitsandveggies.com/regulations/questions-answers>

*The Alliance for Food and Farming is a non-profit organization formed in 1989. Its membership includes approximately 50 agricultural associations, commodity groups and individual growers/shippers who represent farms of all sizes and includes conventional and organic production. The alliance works to provide a voice for farmers to communicate their commitment to food safety and care for the land.*

## **Toward Responsible Regulation of Spray Drift— An Opinion Paper**

*Editors' note:* The U.S. Environmental Protection Agency is considering a “new general statement” on pesticide labels regarding spray drift. The statement is said to be considering a “zero-drift” pesticide policy. The following posting is by Crop Life America, an organization that represents manufacturers and distributors of plant protection products in the U.S.

### **The Issue**

The U.S. Environmental Protection Agency's (EPA) proposals for the new “general label statement on spray drift” creates a new standard (harm, or no harm) that is not defined within the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is subject to interpretation that is potentially inconsistent with the current standard for registered pesticides of “no unreasonable adverse effects.”

Without a clear definition of “harm,” EPA's proposed changes do little to reduce ambiguity in labeling, and they create a potential for violation of the label for users who diligently follow all use directions based on subjective interpretation by state enforcement officials.

The current EPA risk assessment conservatively estimates the potential for off-target movement of an applied product as spray drift. In many cases, the data used by EPA in assessment does not account for the use of the additional protections of advanced drift-reduction technologies such as:

- Low-drift spray tips;
- Large droplet/low pressure application equipment;
- Drift-reduction product formulations and adjuvants;
- Use of shrouds, fans, electrostatic sprays and physical barriers.

### **CropLife America's (CLA) Outlook**

1. CLA supports the “no unreasonable adverse effect” standard contained in FIFRA which governs pesticide registration and use.
2. CLA suggests that any pesticide product labeling regarding spray drift should provide applicators with scientifically-based, consistent, validated and appropriate directions for managing drift.
3. CLA would oppose any regulatory definition of “harm” from

off-site drift that is inconsistent with the FIFRA standard of “no unreasonable adverse effects.” The definition of harm should not be left open to interpretation, which could include mere detection, without including any scientifically valid benchmarks for adverse effects.

### **Talking Points**

Appropriate measures should be taken by all applicators to reduce the potential for spray drift. This includes following the label directions, as legally required, and using best management practices for spray drift minimization as applicable.

- EPA acknowledges that, regardless of the management practices put in place, small levels of pesticide drift may be unavoidable. In their risk evaluation, EPA assumes that some drift will occur. Restrictions on product use are put in place accordingly as a condition of registration.
- Registered products, when used according to the product’s label, have been determined by EPA to pose minimal potential for ‘unreasonable adverse effects’ to humans and the environment.
- Science-based and consistent drift management guidance is needed to eliminate confusion with FIFRA compliance among applicators.
- EPA should use the best available science in the estimation of spray-drift potential.
- EPA should encourage the use of new drift-reducing technology by considering its impact on drift, and making restrictions less onerous on applicators using the best management practices and technology that minimizes drift potential.

This paper is available from CropLife America at

[http://www.croplifeamerica.org/sites/default/files/node\\_documents/Spray%20Drift%20White%20Paper.pdf](http://www.croplifeamerica.org/sites/default/files/node_documents/Spray%20Drift%20White%20Paper.pdf)

CropLife America describes itself as, “Established in 1933, CropLife America represents the developers, manufacturers, formulators and distributors of plant science solutions for agriculture and pest management in the United States. CropLife America’s member companies produce, sell and distribute virtually all the crop protection and biotechnology products used by American farmers.”

<http://www.croplifeamerica.org/about>



## ILLUSTRATED GLOSSARY

Terms From Pesticide Labels  
(recertification)

**Leach, leaching:** (with reference to a soluble chemical or mineral) drain away from soil, ash, or similar material by the action of percolating liquid, especially rainwater

Label example: *Atrazine can travel (seep or **leach**) through soil and can enter ground water that may be used as drinking water.*



Leaching (mobilization) of chalcopyrite ( $\text{CuFeS}_2$ ) above, and its precipitation (immobilization) as chrysocotta (light blue) and malachite (green) below. Photo by Torbjorn Kjellsson.

**Sinkhole:** also known as a sink-hole, sink, swallow hole, shake-hole, swallet or doline, is a depression or hole in the ground caused by some form of collapse of the surface layer.

Label example: *This product must not be mixed/loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and **sink holes**.*



A sudden collapse of the soil surface can cause not only severe property damage or human injury, it can provide a means of groundwater contamination. Image from Phys. Org. 6 March 2013.

**Right of way:** the legal right, established by usage or grant, to pass along a specific route through grounds or property belonging to another.

Label example: *For the control of woody plants and annual and perennial . . . **rights-of-way** such as electrical power lines, communication lines, pipelines, roadsides . . .*



As a right of way, these power lines are similar to country roads. Unwanted vegetation needs to be controlled in order to provide a clear passage. Courtesy of the Tennessee Valley Authority.

**Sucker:** an upright stem growing vigorously from a plant's base or roots.

Label example: *Use extreme care to avoid contact of this herbicide solution, spray, drift or mist with foliage or green bark of trunk, branches, **suckers**, fruit of other parts of trees, canes and vines.*



A sucker growing from the base of a banana plant.

Definitions in this glossary are intended to help understand the terms used on pesticide labels. Trademarks, companies, or proprietary names are not endorsements to the exclusion of other companies or products

# The Pesticide Label

## April–June 2014

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*Caution: Pesticide use is governed by state and federal regulations. Pesticides and pesticide uses mentioned in this newsletter may not be approved for Hawaii, and their mention is for information purposes only and should not be considered a recommendation. Read the pesticide’s labeling to ensure that the intended use is included on it and follow all labeling directions.*