

# 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*

January–March 2014

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### REGULATORY UPDATES

#### Special Local Need Registration

Special local need (SLN) labeling for Hawaii is now available from the Hawaii Department of Agriculture's webpage:

<http://hdoa.hawaii.gov/pi/pest/licensed-pesticides/>

On that webpage, click on the green letters "**List of current Hawaii special local needs registered pesticides**" to download the list, which includes links to the labeling.

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

- None

#### EXPIRES January 1–March 31, 2014

- EPA SLN Number: **HI-090001**, for the product **Lorsban® Advanced**, with EPA Reg. No. **62719-591**, expires March 29, 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 question sets (quizzes) are written and offered by the Hawaii Department of Agriculture staff. To ask about earning recertification credits on Kauai, Oahu, Maui, Lanai, and Molokai, call the Honolulu office at (808) 973-9409 or 973-9424. On Hawaii, call the Hilo office at (808) 974-4143.

## Proper Disposal of Pesticides Extends Far Beyond the Container

(recertification)

*The following is a slightly modified version of the last article in a series on pesticide stewardship sponsored by the Weed Science Society of America.*

### About the Weed Science Society of America (WSSA)

The WSSA, a nonprofit scientific society, was founded in 1956 to encourage and promote the development of knowledge concerning weeds and their impact on the environment. The WSSA promotes research, education and extension outreach activities related to weeds, provides science-based information to the public and policy makers, fosters awareness of weeds and their impact on managed and natural ecosystems, and promotes cooperation among weed science organizations across the nation and around the world. For more information, visit [www.wssa.net](http://www.wssa.net).

This is the last in a series on pesticide stewardship sponsored by the WSSA

(The editors of *The Plant Label* have modified this article slightly to comply with conditions in the State of Hawaii.)

A farmer, a local lawn and garden supply store, and a department store chain were fined recently for pesticide disposal violations. In each of these cases, the pesticide product itself was disposed of improperly. “Regulations on proper pesticide disposal govern the product and much more,” explains Fred Fishel, Ph.D., Professor of Agronomy and Director, University of Florida/Institute of Food and Agricultural Sciences Pesticide Information Office. “They address excess or damaged product, unused spray mixture, rinsate from containers and application equipment, empty containers, leftover treated seed, contaminated clothing and personal protective equipment, material from cleanup of spills and leaks, and other pesticide residues. If anything contains or is contaminated with a pesticide, appropriate disposal is a must.”

It is important to note that state and local laws regarding pesticide disposal may be stricter and more detailed than federal requirements on the pesticide label. Also, many disposal facilities can accept only certain types of waste.

Here are a few important tips about pesticide disposal:

**Excess Product.** Avoid having to dispose of excess product by purchasing only the amount needed. Excess pesticides can be taken to collection location authorized by the local hazardous waste regulator, or disposed of through a licensed waste transporter. If the product is a *restricted use* pesticide, consult with the Hawaii Department of Agriculture’s Pesticides Branch before trying to give it away. Special disposal programs may exist for products missing identifying labels.

**Unused Spray or Dip Mixture.** Whenever possible, eliminate or minimize excess spray or dip mixture by practicing careful measurement, calibration and application. Apply excess mixture to another labeled crop, animal, object, or site, or follow all disposal regulations.

**Rinsate.** Rinse the pesticide container or spray equipment over an impermeable surface and in a way that allows recovery of the rinsate. If the rinsate contains no debris, it can be used the same day as part of the water (or other liquid) portion of the next spray mixture of that chemical. Rinsate can also be applied to the original crop, animal, object, or site provided registered rates are not exceeded and the application is consistent with label directions. If practical, take clean water to the treatment site to rinse equipment immediately after the application.

Never pour excess product, unused spray/dip mixture or rinsate onto a roadway or into a sink, toilet, sewer, street drain, ditch or water body. Do not mix pesticides or load or rinse equipment near a well-head, sinkhole, or lava tube. Pesticides may interfere with the operation of wastewater treatment systems, pollute waterways or harm non-target organisms. Many municipal systems are not equipped to remove all pesticide residues.

**Empty Containers.** Rinse containers of liquid products thoroughly at the mixing site as soon as they are emptied using the triple rinse method or a pressure rinser. Puncture or crush disposable containers to prevent reuse. When disposable containers holding dry formulations are empty, open both ends to help remove any remaining pesticide. For non-refillable plastic containers made of high-density polyethylene, there are collection/recycling programs for agricultural and commercial applicators in most states. Where there is no recycling program, deposit all empty containers in a licensed sanitary landfill. Do not reuse or stockpile empty disposable containers.

If containers are refillable/returnable, follow all rinsing and collection instructions provided by the manufacturer, distributor or retailer.

**Leftover Treated Seed.** The best way to dispose of a small quantity of leftover seed that has been treated with a pesticide is to plant it in an uncropped area of the farm or garden. Use the normal seeding rate and depth and plant at the proper time of year. Do not put treated seed in your compost pile or leave it on the soil surface. Additional options exist for large quantities, but consult first with state and local authorities to make sure you are in compliance with appropriate regulations.

**Contaminated Clothing.** Discard clothing that has been drenched or heavily contaminated with concentrated product. Most of this clothing can be discarded as normal solid waste. However, if the pesticide is regulated as *hazardous waste*, the contaminated clothing may have to be disposed of as hazardous waste.

**Personal Protective Equipment (PPE).** Discard PPE (or a PPE component) that has been damaged or designated as one-time use, or has expired or reached its use limit. Follow the most strict disposal directions, which may be state or local laws, the pesticide label or the PPE manufacturer's instructions.

**Material from Clean-up of Spills or Leaks.** Absorbent material such as pet litter, sawdust, or soil should be used to absorb small liquid pesticide spills or leaks and any water/detergent mixture used to clean the spill area. The absorbent material and any soil contaminated in a spill must be placed in a suitable container for proper disposal and treated as pesticide waste. Sweep up dry spills and return the product to the container only if any contamination with soil, etc. will not impact use. Contact your state to determine notification and cleanup requirements that may be applicable to a larger spill or leak.

**Containment Pad/Sump Residue.** A containment pad/sump is a safety system designed to contain and recover rinsate, spills, leaks, etc. Any solids left in the containment pad/sump should be dried and spread evenly over a large part of the field in accordance with label directions. If this is not practical, the solids should be taken to an authorized waste transport company.

“Proper pesticide disposal depends upon state and local regulations, the pesticide(s) involved, the waste classification, the quantity of waste and the disposal facility,” says Fishel. “Ultimately, the only acceptable approach is to be diligent with pesticides from start to finish. Purchase and prepare only what you need, avoid contamination and spills, and discard the container and other pesticide wastes according to the instructions on the pesticide label and all other laws.”

The Association of American Pesticide Control Officials (AAPCO) provides contact information for state offices that regulate pesticides.

Check with your local solid waste management authority, environmental agency or health department to find out whether your community has a hazardous waste collection program.

Some Resources on Pesticide Disposal:

EPA <http://www.epa.gov/pesticides/regulating/disposal.htm> <http://szf>

Pest Environmental Stewardship [www.pesticidestewardship.org/disposal/Pages/default.aspx](http://www.pesticidestewardship.org/disposal/Pages/default.aspx)

University of Florida <http://edis.ifas.ufl.edu/pi010>

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## Proposed Changes to the Worker Protection Standard: EPA Requests Your Input (recertification)

The US Environmental Protection Agency requests your comments on its proposal to change parts of the existing *Worker Protection Standard* (WPS), a set of federal agricultural rules enforced in Hawaii. The deadline for getting your comments to EPA is June 20, 2014.

To help you to comment, this article presents three sections. The first section, BACKGROUND, discusses selected parts of the current regulation that maybe misunderstood. CHANGES PROPOSED, the second section, is EPA's summary of the changes it is proposing. The third and last section, REFERENCES, is a list of webpages including one that gives tips for sending comments.

### BACKGROUND

#### Does the Worker Protection Standard apply to you?

In its current form, the WPS affects both employers and employees of operations where pesticides are used to grow an *agricultural plant* for either commercial or research purposes. The operations are farms, nurseries, greenhouses, and forests where they may be producing any of the following commodities: • mushrooms • herbs or spices • tobacco • coffee beans, tea leaves, *awa* or kava root • cacao • berries • grains • seeds • *ti* leaves (of *ki* or *Cordyline fruticosa*) • seedlings, liners, cuttings, *keiki*, or other planting material • ornamental flowers, foliage, or stems (usually for florists & lei-makers) • ginger root, taro, or sweetpotato • vegetables or melons • fruits or nuts • sugarcane • lumber, pulp, fiber, or biomass • trees, shrubs, sedges, grasses, bedding plants, or groundcovers & turf grasses *to be transplanted* (for landscaping, golf course maintenance, production or conservation forestry, etc.)

#### Organic production

There is no exemption based on *organic* certification or production techniques.

#### Nursery or Greenhouse?

The words “nursery” and “greenhouse”, as used in the regulation, have distinctly different and specific meanings that might change your interpretation of the rules. According to the WPS, *nurseries are operations that produce agricultural plants outdoors for transplanting to another location, or flower or fern cuttings*. Thus, outdoor areas pro-

tected by shade cloth or wood laths and/or partially covered by plastic or fiberglass sheets are nurseries, not greenhouses. Also, an outdoor section of a golf course is a nursery if it used to grow turf for *transplanting* to another section. However, **greenhouses** are operations that produce agricultural plants indoors in an area that is enclosed with nonporous covering and that is large enough to allow a person to enter. Examples of greenhouses are polyhouses, mushroom houses and caves, as well as traditional greenhouses enclosed with glass. (Malls, atriums, and conservatories, arboretums, and office buildings that grow or maintain plants primarily for decorative or environmental benefits are not greenhouses, according to the regulation.)

#### Pesticide Handler or Worker?

The WPS is made up of rules to protect two types of agricultural employees from pesticide exposure, the pesticide handler and the worker. At family farms and other small agricultural operations, an employee could be a “pesticide handler” in the morning and then a “worker” in the afternoon. So you need to understand EPA’s meaning of each to get a good idea of how the WPS might affect you.

A **pesticide handler** is a person who is doing any of the following:

- mixing, loading, transferring, or applying pesticides;
- handling opened containers of pesticides;
- disposing of pesticides or pesticide containers
- cleaning, handling, adjusting, or repairing the parts of mixing, loading, or application equipment that may contain pesticide residues;
- acting as a flagger;
- assisting with application of pesticides, including incorporating the pesticide into the soil after the application has occurred;
- entering a greenhouse or other enclosed area after the application and before the inhalation exposure level listed on the product labeling has been reached or one of the WPS ventilation criteria have been met to operate ventilation equipment; adjust or remove coverings such as tarps, used in fumigation; or check air concentration levels;
- entering a treated area outdoors after application of any soil fumigant to adjust or remove soil coverings, such as tarpaulins; or
- performing tasks as a “crop adviser” during any pesticide application; before any inhalation exposure level or ventilation criteria listed in the labeling has been reached or one of the WPS ventilation criteria has been met.

The other type of agricultural employee is the worker. A **worker** is a person who is harvesting, weeding, or watering, relating to the production of agricultural plants on the farm, nursery, greenhouse, or forest.

The WPS makes the *employers* of these two types of employees responsible for following the WPS rules. Thus, there are two types of employers, the *handler employer* and the *worker employer*. This distinction is important for large operations whose workers may be employed, not by the owners of the agricultural operations themselves, but by independent labor contractors.

## PROPOSED CHANGES

Proposed changes to the Agricultural Worker Protection Standard (WPS) include:

- 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 (from oral or posted notification is acceptable); the signs prohibit entry into pesticide-treated fields until residues decline to a safe level.
- First time-ever minimum age requirement (from no minimum age). Children under 16 will be prohibited from *handling* pesticides, with an exemption for family farms.
- No-entry buffer areas surrounding pesticide-treated fields (from only applies in *nurseries* and *greenhouses*) 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 (from recordkeeping not required).
- Personal Protection Equipment (respirator use) must be consistent with the Occupational Safety & Health Administration standards for ensuring respirators are providing protection, including fit test, medical evaluation, and training. Recordkeeping as documentation required (from recordkeeping not required).
- 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 (from no requirement to make safety information available).

- Additional changes make the rule more practical and easier to comply with for farmers.
- Continues the exemptions for family farms.

#### **REFERENCES**

For a pdf of the above proposed changes, go to <http://www.epa.gov/oppfead1/safety/workers/proposed/proposed-wps-factsheet.pdf>

For a comparison of current WPS and proposed changes go to <http://www.epa.gov/oppfead1/safety/workers/proposed/comparisons-current-proposed-wps.pdf>

For more information on submitting a comment to EPA go to <http://www.epa.gov/oppfead1/safety/workers/proposed/index.html>

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## Do You Need a Permit Before Applying a Pesticide to “State Waters” of Hawaii? (Recertification)

If you will be applying a pesticide to state waters (which may include dry river beds, dry ditches, and dry taro lo‘i), or if the pesticide will get into state waters during its application, you are required by law to comply with a regulation set by the Hawaii Department of Health. (The regulation is Chapter 11-55, Appendix M of the Hawaii Administrative Rules.) A very brief introduction follows. If you have any questions, or if you would like to consult with the Hawaii Department of Health to determine whether you must obtain permit coverage before your pesticide application, please contact the Clean Water Branch at 808-586-4309.

The Hawaii Department of Health regulation mentioned above is in effect now. It could affect you even if your pesticide’s label allows treatments on or near bodies of water. The requirement is based on a 2009 decision made by the Sixth Circuit Court of Appeals, which is part of the US federal court system. The Court’s decision changed the way pesticide users can be regulated before making certain pesticide treatments outdoors. Now, if your pesticide treatments are covered by the Court’s decision, you should think about the location and size of the outdoor treatment areas because you must, *in some situations*, get a permit *prior to* making pesticide treatments that will cause the pesticide to get into “state waters” of Hawaii. The Hawaii Department of Health is the issuer of such a permit for the purpose of enforcing a law named the *Clean Water Act (CWA)*. The Department’s regulation has no provision to grant permits after a pesticide has been applied. If your situation triggers the requirement for you to get the permit, site-specific conditions and limits will apply. Permit holders may also be required to keep or submit additional documentation, in particular a *Notice of Intent (NOI)*.

The Court’s decision does *not* change the long-standing rules of another state agency, the Hawaii Department of Agriculture, which enforces the pesticide rules about following directions on pesticide labels. All pesticide users must continue to heed the do’s and don’ts given by

their product's labeling, which describes what animals, plants, objects, or sites may be treated, along with the allowed dilution, dosage, timing, and the required protective clothing or safety equipment.

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## **FAO International Code of Conduct on Pesticide Management**

The following is an introduction to the newly revised (2013) FAO International Code of Conduct on Pesticide Management. It was written for Plantwise, a division of the Commonwealth Agricultural Bureaux International (CABI), by Melanie Bateman (CABI Switzerland).

In the mid-1980s, in order to respond to problems associated with the sale and use of pesticides, the FAO Conference adopted the International Code of Conduct on the Distribution and Use of Pesticides. This document has subsequently been revised several times in order to keep pace with changing circumstances. The newest International Code of Conduct on Pesticide Management was approved by the FAO Conference in June 2013. The objectives of the Code are to establish voluntary standards of conduct for all public and private entities engaged in, or associated with, the management of pesticides, particularly where there is inadequate or no national legislation to regulate pesticides. As such, it is a valuable resource for governments in general and agricultural advisors in particular.

The Code establishes good conduct in pesticide management, listing government and industry obligations on topics such as pesticide management; testing to evaluate safety, efficacy, and environmental fate; reducing health hazards; regulatory and technical requirements; availability and use; distribution and trade; information exchange and prior informed consent; labelling, packaging, storage, and disposal; and advertising. The 2013 revised Code of Conduct is strengthened in particular with respect to human health, the environment and vulnerable groups such as pregnant women and children.

Through Plantwise, CABI endeavours to promote sustainable plant health management and to support implementation of the Code of Conduct. Plant doctors are trained within the Plantwise programme to offer sustainable plant health management advice to farmers following the principles of Integrated Pest Management (IPM). Where the use of pesticides is unavoidable, plant doctors are advised to recommend only locally-registered and available pesticides to the extent that this information is available. Furthermore, plant doctors are made aware that they must not recommend pesticides that are subject to international restrictions, such as those listed by the Stockholm Convention on Persistent Organic Pollutants, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Montreal Protocol on Substances that Deplete the Ozone Layer, as well as pesticides listed as Classes Ia and Ib by the WHO Recommended Classification of Pesticides by Hazard (WHO, 2009).

Above all, plant doctors are encouraged to give advice that keeps pesticide usage to the lowest effective level and ensures minimal risk to human health and the environment. For more information, refer to the Plantwise policy on the Use of Pesticides.

The FAO International Code of Conduct on Pesticide Management is available at <http://www.fao.org/agriculture/crops/core-themes/theme/pests/code/en/>

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## Pesticides and Suicide

In the United States in 2003-2004, 19% of all deaths due to injury were caused by suicide (Table 1). In 2010, there were 713,000 people treated in Emergency Departments for attempted suicides: 38,364 were successful. It is estimated that in the United States there is one suicide for every 25 attempts, or about 960,000 attempted suicides in 2010.

Worldwide, there are approximately 1 million suicides per year and pesticides are used in almost one-third of them. This is not commonly recognized among developed nations as it mainly occurs in rural areas of emerging nations. In the Indian state of Andhra Pradesh in 2004, for example, 30% of suicides were from swallowing pesticides, as were 62% in China, 71% in Sri Lanka, and 90% in Malaysia. The pesticides of opportunity in most of these countries are herbicides. They are accessible to most farmers and their families. During severe stress, an available container of herbicide and a spontaneous decision to kill oneself are often fatal.

A major reason for failed suicide attempts is the availability of efficient methods. The decision to commit suicide is usually spontaneous and caused by acute emotional distress. People use what is available. In developed countries, common methods include poisoning by prescribed and non-prescribed drugs, suffocation (e.g., vehicle exhaust fumes), drowning, and cutting oneself (Table 2). These methods have a relatively low success rate compared to drinking an herbicide. Therefore, most attempted suicides in developed countries become “attempted suicide,” or episodes of “non-fatal self-harm” and not death by suicide. In the United States, however, more than half of the suicides in 2010 were by firearms—a most efficient method of taking one’s life (Table 2).

Attempts are being made to reduce deaths from the ingestion of pesticides and other chemicals. One method is to restrict access by:

- banning the most toxic pesticides.

**Table 1. All Deaths Caused by Injury, U.S. 2003–2004\***

<u>CAUSE</u>	<u>PERCENTAGE</u>
Unintentional	67%
Suicide	19%
Homicide	11%
Undetermined	3%
Legal Ops, War	1%

\* CDC, Injury in the U.S., 2007 Chartbook

**Table 2. Methods of Suicide,  
U.S. 2010\***

<u>METHOD</u>	<u>NUMBER (%)</u>
Cutting	673 (2)
Drowning	409 (1)
Fall	781 (2)
Fire	131
Firearms	19,392
Transportation	114
Poisoning	6,599 (17)
Suffocation	9,493
Other	722
<b>TOTAL</b>	<b>38,364</b>

\* CDC, Suicide/self-inflicted injury, 2010

- requiring certification to purchase or handle highly toxic chemicals.
- encouraging locked boxes for toxic chemicals, located away from living quarters, to discourage impulsive acts.<sup>1</sup>

Another approach is to reduce the toxicity of pesticide products by:

- using less toxic active ingredients, carriers, or both.
- marketing less concentrated products.
- including additives that deter the ingestion, absorption, or lethality of the product.

The U.S. Environmental Protection Agency, for example, has classified some products as restricted use pesticides. They can only be purchased and applied by certified pesticide applicators, or under their supervision. In the United States, one particular herbicide also contains an offensive-smelling alerting agent and an emetic to induce nausea and vomiting. Recently, the amount of emetic in this herbicide was increased, a purgative added, and an alginate introduced to slow absorption. These precautions are not required in all countries.

#### References

- Centers for Disease Control and Prevention. 2010. Suicide and self-inflicted injury. Accessed on 26 December 2013 at <http://www.cdc.gov/nchs/fastats/suicide.htm>
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## Little Fire Ants on Oahu and Maui



Photo courtesy E. Sarnat, Bugwood.org



Little fire ants attracted to a piece of wood thinly covered with peanut butter. Photo courtesy of E. Sarnat, Bugwood.org.

The Hawaii Department of Agriculture (HDOA) has confirmed that an invasive stinging ant called the Little Fire Ant (LFA) has spread from Hawaii Island to Oahu and Maui.

On Dec. 23, a customer at garden shop on Maui reported a suspicious ant to the Maui Invasive Species Committee (MISC), which sent the specimens to HDOA entomologists who confirmed the identification of LFA.

On Dec. 26, HDOA entomologists surveyed several nurseries and stores and found LFA infestations on hapuu (Hawaiian tree fern) at several garden shops on Oahu and at another Maui store. All infested hapuu were contained and the areas secured.

**HDOA is asking the public’s help in surveying for LFA in their yards by using peanut butter bait sticks to attract LFA, then freezing the ants in a sealed plastic freezer bag for at least 24 hours and call HDOA’s Pest Hotline at 643-PEST (7378)**

HDOA is advising those who recently purchased hapuu logs or planters to contain the logs by placing them in a plastic or garbage bag and seal it securely. They should contact their nearest HDOA office as soon as possible.

- Maui – (808) 872-3848
- Oahu – PEST HOTLINE – 643-PEST (7378). This is also a toll-free number for neighbor islands.

“It is important that those who have recently purchased hapuu which may be infested with little fire ants to help contain the infestation and contact us as soon as possible,” said Dr. Neil

Reimer, administrator of HDOA’s Plant Industry Division.

“Through past experience, we know we can contain an infestation if we find it in its early stages.”

Originally from South America, LFA is considered among the world’s worst invasive species.

LFA are tiny ants, measuring 1/16-inch long, are pale orange in color and move slowly. LFA move slowly, unlike the Tropical Fire Ant which is established in Hawaii, move quickly and are larger with a larger head in proportion to its body. LFA can produce painful stings and large red welts and may cause blindness in pets. They can build up very large colonies on the ground, in trees and other vegetation and completely overrun a property. They will also freely move into homes.

The first detection of LFA in Hawaii was in the Puna area in 1999. Surveys determined that LFA appeared to have been on the east side for several years prior to their initial detection and was widely distributed in Puna. Attention was then focused on controlling ant populations and preventing the spread to non-infested areas on the island and to other islands.

In October 2009, LFA was detected on a farm in Waihee, Maui. Eradication efforts at that site appear to have contained the infestation, which is being continually monitored. HDOA staff also trained Maui County employees, MISC and private pest control operators on Maui to assist in recognizing and reporting possible infestations on the island. MISC is also assisting HDOA in conducting surveys at high-risk areas on Maui.

State of Hawaii Department of Agriculture, Plant Industry Division  
<http://hdoa.hawaii.gov/pi/main/lfainfo/>

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This close-up of the little fire ant shows its long, sparse body hairs, 2-segmented waist, and sting (arrow). The scale bar is 0.25 mm, so this ant is less than 2 mm long. Photo courtesy K. Anderson, PaDIL.gov.au

## ILLUSTRATED GLOSSARY

### Terms from Pesticide Labels (Recertification)



A Hypohatchet delivers a set amount of herbicide into a tree on impact. It has a hollow handle attached by flexible tubing to a bottle containing the herbicide.

**Hypohatchet:** a hatchet that injects a preset amount of herbicide into tree stems on impact.

Label example: *Make injections near ground level when using the tree injector or 2 to 4 feet above the ground when using a **Hypohatchet** injector or similar device.*



The sharp beveled edge of the pressure rinsing nozzle attached to the end of a hose is jammed through the bottom of the empty container. This cleans and destroys the container, making it ready for disposal. Photo courtesy of T. McCabe, North Carolina State University

**Pressure rinsing nozzle:** A pressure rinsing, or jet rinsing, nozzle attaches to a water hose. It has a sharp, beveled tip with several holes in the side. The sturdy tip is jammed through an empty pesticide container and water pressure rinses the inside.

Label example: *Insert **pressure rinsing nozzle** in the side of the container and rinse at about 40 PSI for at least 30 seconds.*



Add water (or other carrier) to container until about 1/4 full, replace lid, agitate for 30 seconds, empty container into spray tank. Make sure any liquid trapped in the handle is released. Repeat twice more.

**Triple rinse:** A three-part procedure for flushing the chemical remaining inside an empty metal, glass, or plastic pesticide container for a liquid pesticide. An unrinsed container must not be recycled or discarded as “solid waste” like ordinary trash. It must either be disposed of according to “hazardous waste” rules or stored correctly for a short time for later disposal.

Label example: *Triple rinse containers small enough to shake (capacity < 5 gallons) as follows: Empty the remaining . . . .*



Biennial plants

**Rosette:** a circular arrangement of leaves, with all the leaves at a similar height. This structure is common in biennial plants that flower in alternate years.

Label example: *In western U.S., apply in fall at rosette stage.*

The definitions in this glossary are intended to help understand the terms used on pesticide labels. Other definitions may be available for these terms.

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# The Pesticide Label

January–March 2014

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- September–December 2012—Recordkeeping for Restricted Use Pesticides (p. 2), Pesticide Decisions: Preapplication Checklist (p. 9), Plant Diseases Caused by Living and Non-living Factors (p. 15), Illustrated Glossary (p. 20)
- April–August 2012—Pesticides, EPA, and the Endangered Species Act (p. 2), Pesticide Decisions: Safety Checklist (p. 7), Choosing Pesticides for Greenhouses and Nurseries (p. 12), Illustrated Glossary (p. 15)
- January–March 2012—Pheromones (p. 3), Using Indicator Dyes (p. 12), Activated Charcoal (p. 15), Glossary (p. 19)
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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.*

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