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

The Pesticide Label

Key to Pesticide Safety and Education

July–September 2014

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Regulatory Updates

Special Local Need Registration

NEW since the last issue of this newsletter:

- None

EXPIRES July 1–December 31, 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.
- EPA SLN Number **HI-0900004**, for the product **HBT-IMAZ**, to treat **forested watersheds and natural areas**, expires October 25, 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.

Insect Repellents: New Label Graphic

Release Date: 07/17/2014

WASHINGTON – The U.S. Environmental Protection Agency today unveiled a new graphic that will be available to appear on insect repellent product labels. The graphic will show consumers how many hours a product will repel mosquitoes and/or ticks when used as directed.

"We are working to create a system that does for bug repellents what SPF labeling did for sunscreens," said Jim Jones, Assistant Administrator of the Office of Chemical Safety and Pollution Prevention. "By providing vital information to consumers, this new graphic will help parents, hikers and the general public better protect themselves and their families from serious health threats caused by mosquitoes and ticks. We are encouraging manufacturers to submit applications so they can add the graphic to their registered repellent products."

In a joint statement released today, EPA and the Centers for Disease Control and Prevention are urging the public to use insect repellents and take other precautions to avoid biting insects that carry serious diseases. In the United States, ticks can transmit serious diseases such as Lyme disease, Rocky Mountain spotted fever, and ehrlichiosis. Mosquitoes can transmit debilitating diseases including West Nile virus, dengue fever and St. Louis encephalitis.

Incidence of these diseases is on the rise. CDC estimates that there are about 300,000 cases of tick-transmitted Lyme disease in the United States each year. Effective insect repellents can protect against serious mosquito- and tick-borne diseases. Using the right repellent and taking other preventive actions can discourage bites from ticks, mosquitoes, and other biting insects.

Companies' voluntary placement of the new label graphic on insect repellent product labels will make it easier for consumers to choose a repellent. In order to place the graphic on their labels, manufacturers must submit a label amendment, including adequate test results to support the graphic and meet stringent safety standards. The public

could see the graphic on repellent products early next year.

Current labels of skin-applied repellent products do not make it easy for consumers to identify the insects repelled by a product and how long it will work. EPA has worked with manufacturers and the public to create the new graphic that displays consumer information in a more prominent and standardized format. The graphic will only be placed on products that are applied directly to the skin.

Companies will be able to request approval to use this graphic through the Pesticide Registration Improvement Act registration process.

For additional information:

See the joint statement from EPA and CDC: http://www2.epa.gov/insect-repellents/joint-statement-insect-repellents-epa-and-cdc

See the new website on insect repellency: http://www2.epa.gov/insect-repellents

For more information on diseases transmitted by mosquitoes and ticks: http://www.cdc.gov/ticks/, http://www.cdc.gov/westnile/, http://www.cdc.gov/chikungunya/, http://www.cdc.gov/dengue/

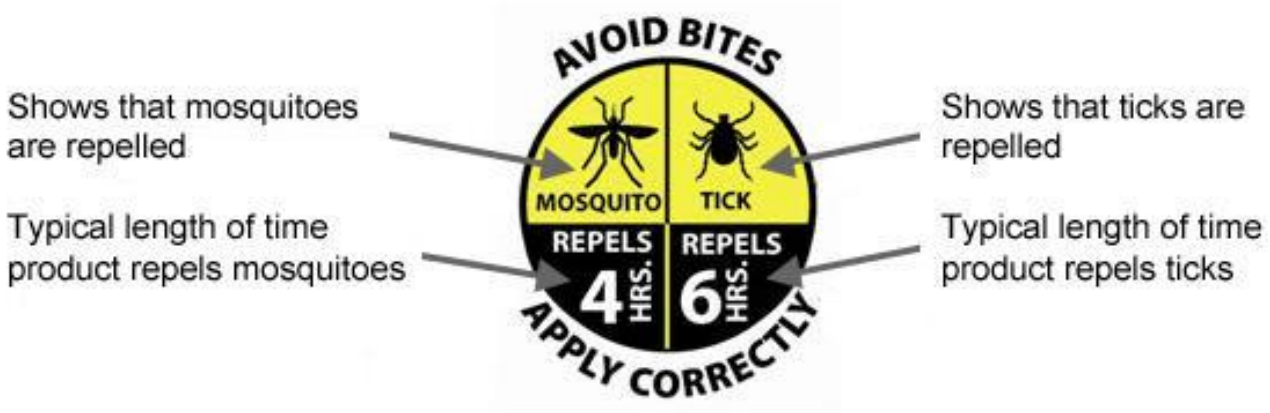
(Continued on next page)

What Does the Graphic Look Like?

1. **Protection**
   - The repellency awareness graphic can help people protect themselves. Mosquitoes and ticks may carry diseases, such as West Nile virus and Lyme disease http://www2.epa.gov/insect-repellents/risk-disease-mosquito-and-tick-bites.
   - The best way to protect yourself and your family is to avoid bites!
   - Insect repellents can discourage mosquitoes, ticks and other biting insects from landing on you. Also see:

- Tips to prevent mosquito bites http://www2.epa.gov/insect-repellents/tips-prevent-mosquito-bites
- Tips to prevent tick bites http://www2.epa.gov/insect-repellents/tips-prevent-tick-bites

2. **Information**
   - The graphic will identify the type of pest the product is expected to repel and the amount of time the repellent will be effective. The repellency awareness graphic will be available only for skin-applied insect repellent products.
   - You may see one of three versions of the graphic on a product label showing that mosquitoes, ticks, or mosquitoes AND ticks are repelled.
3. **Choice**
   - Some repellents work longer than others. Choose a product with a protection time that works for your expected activity.
4. **Confidence**
   - The number(s) shown in the graphic represent typical protection time(s).
   - Protection time(s) are based on multiple, reliable studies. Products with this graphic have gone through an extra review by EPA.



FTC Takes Action Against Unproven Claims

The Federal Trade Commission filed deceptive advertising charges against two marketers of remedies for bed bug infestations, who allegedly failed to back up overhyped claims that they could prevent and eliminate infestations using natural ingredients, such as cinnamon and cedar oil. One marketer also allegedly made misleading claims that its products were effective against head lice.

In one of the two cases, RMB Group, LLC and its principals have agreed to settle the charges relating to their "Rest Easy" bed bug products. In the case against Cedarcide Industries, Inc. and others, challenging their marketing of "Best Yet!" bed bug and head lice treatments, the defendants have not settled, and the FTC is beginning litigation against them.

Bed bugs have been a growing public health pest in recent years, according to the Environmental Protection Agency http://www2.epa.gov/bedbugs. Consumers plagued with bed bugs experience considerable stress, discomfort, and expense in attempting to rid themselves of these pests, and many are unaware of the complex measures needed to prevent and control them, according to the EPA.

Consumers concerned about bed bugs also should see the FTC publication, "Good Night, Sleep Tight, and Don't Let the Bed Bugs Bite . . . Your Wallet http://www.consumer.ftc.gov/articles/0139-battling-bed-bugs," which urges caution about advertisements that offer quick solutions, and provides advice to consumers for treating bed bug infestations.

Also, as children head back to school this fall, the FTC urges parents to carefully research products that claim to treat head lice infestations.

In both cases, the FTC charged the marketing companies—as well as the individuals behind them—with deceptive advertising for claiming that their products can stop and prevent bed bug infestations. The Cedarcide defendants also are charged with making deceptive claims that their product can stop and prevent head lice infestations, and that the federal government endorses and is affiliated with their product.

INSECT REPELLETS ARE PESTICIDES

Pesticide regulators consider insect repellents to be pesticides. "A pesticide is a chemical used to prevent, destroy, or repel pests," according to the US Environmental Protection Agency's webpage *What Is A Pesticide?*. http://www.epa.gov/kidshometour/pest.htm.
And, the Hawaii Department of Agriculture lists insect repellents on its webpage *Currently Licensed Pesticide Listing*. https://data.hawaii.gov/Health/Currently-Licensed-Pesticide-Listing/ufr5-uv4x.

The Cedarcide Industries, Inc. defendants market BEST Yet!, http://www.ftc.gov/enforcement/cases-proceedings/112-3128/springtech-77376-llc-also-dba-cedarcidecom-et-al a line of cedar-oil-based liquid products they claim will treat and prevent bed bug and head lice infestations. The defendants sell the product to consumers nationwide. They also sell it to hotels and other commercial establishments for treating bed bugs, and to school districts for treating head lice. Consumers can buy the product online, by phone, at the Cedarcide website and at Amazon.com. The cost of the products ranges from $29.95 for the quart-sized spray bottle to $3,394.95 for a hotel-motel bed bug eradication kit.

One radio advertisement for the product stated:
"In light of the recent bed bug media frenzy that has all of us nervous, you need to know that bed bug prevention and eradication relief are available. So let's not all freak out. All you need is Best Yet from CedarCide.com…. Best Yet was developed at the request of the USDA for our military, as a solution for killing sand fleas. But guess what, it's equally deadly to bed bugs, larvae and eggs."
The FTC complaint charges that the Cedarcide defendants make:

- unsupported claims that Best Yet! is effective at stopping and preventing bed bug infestations and that it is more effective than synthetic pesticides at doing so;
- false claims that scientific studies prove Best Yet! is effective at stopping and preventing bed bug infestations, and that it is more effective than synthetic pesticides at doing so;
- a false claim that the Environmental Protection Agency has warned consumers to avoid all synthetic pesticides for treating bed bug infestations;
- unsupported claims that Best Yet! is effective in stopping and preventing head lice infestations, killing head lice eggs, dissolving the glue that binds head lice eggs (known as nits) to hair, and killing head lice and their eggs in a single treatment; and
- false claims that scientific studies prove Best Yet! is effective in stopping and preventing head lice infestations.

- false claims that Best Yet! was invented for the U.S. Army at the request of the U.S. Department of Agriculture, and that the USDA has acknowledged the product as the number one choice of bio-based pesticides.

The Cedarcide complaint names Dave Glassel and several companies he controls: Springtech 77376, LLC; Cedarcide Industries, Inc.; Chemical Free Solutions, LLC; and Cedar Oil Technologies Corp.

RMB Group, LLC marketed Rest Easy, http://www.ftc.gov/enforcement/cases-proceedings/1123127/rmb-group-llc-et-al a liquid solution containing cinnamon, lemongrass, peppermint, and clove oils. The company sold it to retail chains Bed Bath & Beyond, Walgreens, and Big Lots, which in turn sold it to consumers primarily for use when staying in hotel rooms. The product was sold in a 16-ounce spray bottle, which cost $6.99 to $9.99, and a 2-ounce twin pack, which retailed for $5.99 to $7.77. It also was sold in a gallon jug for approximately $50.

A video ad appearing on a company-sponsored website stated:

"Did you Know ... Bed bugs can survive up to 10 months without feeding. They can lay between 5 and 12 eggs per day ... per bug! Why take a chance on being their next meal when you travel? Or having your business shut down because somebody unwittingly brought them in? Rest Easy ... is a real GREEN All-Natural, Non-Pesticide, designed as a preventative for just these potential problems. Rest Easy And rest assured, bed bugs no more!"

The FTC complaint charges that the RMB Group defendants make unsupported claims that Rest Easy kills and repels bed bugs, and that a consumer can create a barrier against them by spraying the product around a bed.

Under the settlement, the defendants are barred from:

- representing that Rest Easy or any other pesticide kills or repels bed bugs or creates a barrier against them, and
- making any claims about the performance of such a product,

unless the representations are true and backed by competent

and reliable scientific evidence.

The settlement imposes a $264,976 judgment against the Stuart, Florida-based RMB Group, LLC, and its owners, Howard and Bruce Brenner. The judgment is suspended because of the defendants' inability to pay.

NOTE: The Commission files a complaint when it has "reason to believe" that the law has been or is being violated and it appears to the Commission that a proceeding is in the public interest. The complaint is not a finding or ruling that the defendant has actually violated the law. The stipulated order is for settlement purposes only and does not constitute an admission by the defendant that the law has been violated. Stipulated orders have the force of law when approved and signed by the District Court judge.

This press release was accessed on 21 July 2014 at http://www.ftc.gov/news-events/press-releases/2012/09/ftc-takes-action-against-companies-marketing-allegedly-unproven

Pesticide Use and Your Personal Protective Equipment (PPE)

(recertification)

THE LABEL IS THE LAW! When using pesticide products, the requirements for PPE on the product label are your main source of information.

The Environmental Protection Agency (EPA) has labeling requirements for pesticide products. Pesticide labels must have signal words, which describe the acute (short-term) toxicity of the formulated pesticide product. The signal word can be one of the following: DANGER/POISON, DANGER, WARNING, or CAUTION. Products with the DANGER/POISON signal words are the most toxic. Products with the signal word CAUTION are comparatively less toxic. All products must be handled with care. Manufacturers must provide information about what PPE a handler must wear when mixing, loading, handling, and applying pesticides. Some of this information may be confusing. For instance, what does the label mean when it specifies "chemical-resistant" protective clothing?

Chemical-resistant materials prevent the measurable movement of certain chemicals through the material to your protected skin *for a limited period of use or time*. No material claims to be chemical proof. If the label refers to a chemical-resistance category (A – H), choose the category of resistance level that best matches the length of time you will be handling the pesticide or change (into a new pair of gloves, for instance) before you reach the resistance time limit for the material. (See the chart on Page 11). The resistance categories are based on the solvents used in the pesticides, not the active ingredients. Different formulations of the same pesticide may require PPE from different chemical-resistance categories.

Chemical-resistant coveralls are one- or two-piece suits that the manufacturer specifies to be resistant to certain chemicals. Suits made of butyl rubber, neoprene, PVC, or one of the newer coated and laminated polyethylene fabrics may be appropriate. Generally, greater material thickness, bond or sealed seams, and covered zippers and vent holes will increase the protection offered. These garments are often elasticized at the wrist and ankle. Some are reusable if properly cleaned, and some must be disposed of after a single use. You will be safest and

most comfortable in protective clothing that fits. Do not use coveralls made from fabrics such as cotton, polyester, or uncoated, non-woven olefin unless the label specifies "long-sleeved shirt and long pants" or "coverall worn over long-sleeved shirt and long pants."

Chemical-resistant gloves. Often, the pesticide label will provide recommendations for a type of glove in the PPE section. In addition, if the label specifies chemical-resistance categories A through H, use the table below to help you decide what type to provide.

Category listed on the pesticide label	Barrier laminate	Butyl rubber >14 mils	Nitrile rubber >14 mils	Neoprene rubber >14 mils	Natural rubber >14 mils	Poly-ethylene	Polyvinyl chloride (PVC) >14 mils	Viton >14 mils
A (dry and water-based)	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**
B	**High**	**High**	**Slight**	**Slight**	**None**	**Slight**	**Slight**	**Slight**
C	**High**	**High**	**High**	**High**	**Moderate**	**Moderate**	**High**	**High**
D	**High**	**High**	**Moderate**	**Moderate**	**None**	**None**	**None**	**Slight**
E	**High**	**Slight**	**High**	**High**	**Slight**	**None**	**Moderate**	**High**
F	**High**	**High**	**High**	**Moderate**	**Slight**	**None**	**Slight**	**High**
G	**High**	**Slight**	**Slight**	**Slight**	**None**	**None**	**None**	**High**
H	**High**	**Slight**	**Slight**	**Slight**	**None**	**None**	**None**	**High**

KEY. **High**: Highly chemical resistant. Clean or replace PPE at end of each work day. Rinse off pesticides at rest breaks.
Moderate: Moderately chemical resistant. Clean or replace PPE within an hour or two of contact.
Slight: Slightly chemical resistant. Clean or replace PPE within 10 minutes of contact.
None: Not chemical resistant. Do not wear this type of material as PPE when contact is possible.

Remember that waterproof gloves are not necessarily chemical resistant. Chemical-resistant gloves with non-

separate liners (i.e., flocking) are prohibited. You may wear shorter cotton gloves underneath the chemical-resistant ones, but they must be disposed of immediately upon contact with liquid. In addition, the cotton liners must be disposed of after 10 hours of use or within 24 hours from when they are first worn.

Never wear cotton, leather, or canvas gloves unless the label specifies that this type is required (e.g., aluminum phosphide fumigants).

Chemical-resistant footwear can be one-piece pull-on boots made of natural rubber, which may be coated with polyurethane, PVC, or blends, or you may use disposable or reusable shoe covers. Either way, pant legs should be worn outside of the boots to prevent pesticides from entering the footwear. Leather boots or canvas-leather sports shoes should never be worn when handling pesticides. Change shoes when you are finished spraying. Leave your contaminated footwear at work.

Chemical-resistant hood or wide-brimmed hat. Hats must be a rubber-, PVC-, or plastic-coated safari-style, or wide-brimmed hat. Hoods must be a rubber-, plastic-, or other barrier-coated hood. A full hood or helmet that is part of a respirator, like a PAPR, is also acceptable. Avoid cloth hats or liners that will absorb chemicals.

Chemical-resistant apron. An apron may be required for mixing and loading pesticide spray tanks or for cleaning equipment. Aprons should be coated on both sides with the resistant material and the edges sealed to prevent pesticide absorption and wicking. They should provide full protection for the front of the body from the neck to the knees. A chemical-resistant spray suit may be worn instead of an apron.

Eye protection. Use the appropriate eye protection level when the label specifies the following:

- Protective eyewear. Use safety glasses with brow, front, and temple protection; or a face shield; or fully-enclosed goggles; or a full-face respirator.
- Goggles. Use fully-enclosed chemical-splash-resistant goggles or a full-face respirator.
- Full-face respirator. You must use a tight-fitting, full-face respirator.

Eyewear must meet or exceed the current impact-

resistance specification of the American National Standards Institute (ANSI Z87.1). Polycarbonate is lightweight and provides strong impact resistance and good chemical splash resistance. *Wrap-around safety glasses are not acceptable for protection when spraying.*

Note: Special goggles are made to wear over prescription glasses. Goggles must not interfere with the seal of a tight-fitting respirator. If you use a half-mask respirator, use goggles designed to fit over the nosepiece of your respirator.

How do I clean reusable personal protective equipment?

- Check the PPE manufacturer's instructions. If there are no instructions, wash the PPE thoroughly with hot water and detergent. PPE should be washed before reuse, preferably at the end of the day.
- If you can, hang washed PPE, except respirators, out in the sun to dry. It will help to further break down pesticide residue.

Respirators. Only use respirators approved by the National Institute of Occupational Safety and Health (NIOSH). When a pesticide label requires respirator use, it will commonly specify the NIOSH testing and certification (TC) number including the following types:

NIOSH TC number	Type of respirator	The pesticide label may specify this type of respirator for:
TC-84A-	Respirator with a particulate filter or with a combination chemical cartridge and particulate filter	A pesticide product applied as a solid or a pesticide product in Toxicity Category I or II applied as a liquid with a vapor pressure lower than a certain value
TC-23C-	Air-purifying respirator (APR) with a single type of chemical cartridge; Powered air-purifying respirator (PAPR) with chemical cartridge and particulate filter	A pesticide product in Toxicity Category I or II applied as a liquid with a vapor pressure greater than a certain value
TC-21C-	Powered air-purifying respirator (PAPR) with a particulate filter	

Labels may also list which category of particulate filters (or pre-filters) can be used

"N" (not resistant to oil, use only when no oil is pre sent)

"R" (oil-resistant, can resist some oil, but only for a limited time)

"P" (oil-proof, can be used when oil is present)

Remember, oil may also be present in stickers or surfactants found in spray mixes.

Powered air-purifying respirators (PAPRs). Protection is dependent on proper airflow. A flow meter monitors airflow to determine if the canister or cartridge has become clogged. Follow the manufacturer's recommendations; do not use the respirator if the airflow is less than the minimum required, typically four cubic feet per minute (cfm) for tight-fitting face pieces and six cfm for hoods or loose-fitting helmets. Batteries must be maintained for these respirators to operate properly. See the NIOSH fact sheet about PAPR batteries on Oregon OSHA's "Respiratory protection" topic page. Opened PAPR canisters or cartridges must be replaced according to the schedule in the product information, even if minimum airflow is acceptable. Always write the date you opened the canister or cartridge on the package. Sealed canisters or cartridges may also have expiration dates that must be followed even if they have never been opened.

Filters, canisters, and cartridges. Air-purifying filters, canisters, and cartridges that are used more than once should always be stored separately from the other parts of the respirator and PPE to prevent contamination from pesticide residue.

The Worker Protection Standard, 40 CFR 170, requires the following replacement schedule for respirator filters, canisters, and cartridges.

Replace filters used with particulate-filtering respirators:

- When you notice breathing resistance.
- When the filter element is physically damaged or torn.
- According to the respirator manufacturer's recommendations or the pesticide product's label instructions, whichever is more frequent.

- If there are no other instructions or indications of service life, at the end of each day's work period.

Replace canisters or cartridges used with gas- or vapor-filtering respirators:

- At the first indication of odor, taste, or irritation.
- According to the respirator manufacturer's recommendations or the pesticide product's label instructions, whichever is more frequent.
- If there are no other instructions or indications of service life, at the end of each day's work period.

How do I store PPE? PPE should never be stored inside a pesticide storage room with the pesticides or other chemicals.

- All PPE should be stored separately from personal clothing and other personal items.
- During lunchtime or breaks, used PPE must be hung up in a safe place until it is reclaimed for spraying. Do not put contaminated PPE back into a locker or anywhere it might contaminate workplace surfaces, clean PPE, or personal items.

To wash clothing worn while applying pesticides:

- Always wash before wearing again.
- Handle clothing with waterproof gloves.
- Rinse or soak first, using a hose or bucket.
- Wash work clothes separately from family wash.
- Use detergent and hot water.
- Wash a few items at a time.
- Use the highest water level.
- Use the longest wash time.
- Line-dry in the sun when possible.
- Throw away clothing that will not wash clean.
- After washing, run the machine through a complete cycle with detergent.

For more information, contact www.osha.org

The information in this article is from a brochure prepared by the Oregon Occupational Safety & Health Division of the Department of Consumer and Business Services, OR, and is reprinted here with permission of Oregon OSHA.

Brochure available at
http://orosha.org/pdf/pubs/1018.pdf

New Website on Soil Fumigants

As part of the EPA's effort to build a more user-friendly website, they have compiled all of their information on soil fumigants into a microsite so that visitors can find the information they need more quickly and easily. The Soil Fumigant Toolbox contains material on

- training,
- fumigant management plans,
- buffer zones and
- other safety measures for the protection of agricultural workers and bystanders.

You will find background information on soil fumigants and links to fact sheets and the National Association of State Departments of Agriculture Research Foundation's Soil Fumigation Manual at http://www.nasda.org/File.aspx?id=4186 This is a national pesticide applicator study guide.

This toolbox will be useful to fumigant handlers and certified applicators, state and tribal agencies, and communities that may be affected by the fumigation of soil. It can be accessed at http://www2.epa.gov/soil-fumigants.

Northwest Center for Alternatives to Pesticides v. EPA

EPA is reinstating streamside no-spray buffer zones to protect endangered or threatened Pacific salmon and steelhead in California, Oregon and Washington State. These buffers were originally established in prior litigation brought against EPA by the Washington Toxics Coalition (WTC) and others.

The no-spray buffer zones, 20-yards for ground pesticide applications and 100-yards for aerial pesticide applications effective August 15, 2014, will apply to:

- carbaryl,
- chlorpyrifos,
- diazinon,
- malathion and
- methomyl

These buffer zones will remain in place until EPA implements any necessary protections for Pacific salmon and steelhead based on reinitiated consultations with the National Marine Fisheries Services (NMFS). EPA is reevaluating these pesticides in connection with its current FIFRA registration review process, and the stipulated injunction will reinstate the buffers in the interim. These re-initiated consultations will be nationwide in scope and based on the recommendations of the National Academy of Sciences (NAS) report. The reinstated buffers are part of the final court order; however, they will not be included as labeling requirements under FIFRA.

To view the no-spray buffer zones go to the Salmon Mapper.

Under this settlement agreement, there are three relevant use exemptions carried over from the WTC case:

1. public health vector control administered by public entities, such as the use of malathion by local governments for mosquito control
2. NMFS- authorized programs (i.e., where a NMFS finding or permit allows use within the buffers)
3. use of carbaryl under a Washington state-issued 24(c) registration for oyster beds in the estuarine mudflats of Willapa Bay and Grays Harbor.

Background on this court case

The stipulated injunction settles litigation brought against EPA by the Northwest Center for Alternatives to Pesticides and others in U.S. District Court in Washington State.

In addition to the five pesticides being addressed by this action, protection measures for seven other chemicals that were included in the original WTC case are still in place, pending final biological opinions from the NMFS.
For more information on the WTC case, go to www.epa.gov/espp/litstatus/wtc/index.htm. Read more about the buffers established by that case at www.epa.gov/espp/litstatus/wtc/maps.htm#wtc1.

Links to the Federal Register Notices and Court Orders

- August 15, 2014, Court Order (PDF) (14pp, 189Kb, PDF)
- EPA-HQ-OPP-2014-0301

Contact Information

If you have questions related to the reinstated buffer zones or the Salmon Mapper, contact us at espp@epa.gov

Invasion of the Little Fire Ants

(This information is from the fireantfreemaui website http://www.fireantfreemaui.org/ and is presented without change.)

Little fire ants (LFA) are devastating communities across the Pacific. Passive and deceitfully small in size, these South American imports pose a grave threat to Hawaii. They can deliver a painful sting, blind animals, and reduce biodiversity.

If LFA were to become established in Hawaii, they would become the state's most devastating pest. Throughout the Pacific, LFA has overwhelmed communities. If we do not stop the spread of the little fire ant we stand to lose much of our agricultural industry. We will lose our ability to grow our own food, enjoy our yards, and hike through the forest. Ground nesting seabirds and sea turtle hatchlings will be attacked, along with many of our rare insect species. Once little fire ant is established, there is little hope of eradication.

I thought we already had fire ants here?

Yes, the tropical fire ant, *Solenopsis geminata*, has been in Hawaii since the 1940s. While the tropical fire ant is a serious and unpleasant pest, it pales in comparison to the little fire ant. LFA are ½ the size of the tropical fire ant, only as long as a penny is thick. LFA typically sting people on their necks as they rain down from trees. Learn to tell the difference at http://www.fireantfreemaui.org/?what-does-it-look-like or at http://www.reportapest.org/pestlist/wasaur.htm

Learn how to identify LFA, test for LFA, and where to take your ants for identification- download the 2014 LFA brochure (PDF).

ILLUSTRATED GLOSSARY

Terms From Pesticide Labels
(recertification)

Root collar. area of the stem, or trunk, of a woody plant at soil level from which the uppermost roots extend

Label example: *Depending upon the size and density of the woody plants, apply sufficient spray volume to thoroughly wet all leaves, stems, and* **root collars**.

The root collars of these ironwood (*Casuarina equisetifolia*) trees are partially covered by the brown leaves (needles) from the trees.

Phytotoxicity, Phytotoxic. A toxic effect by a compound on plant growth. Such damage may be caused by a wide variety of compounds, including trace metals, pesticides, salinity, phytotoxins or allelopathy.

Label example: *Therefore, before using any tank mix (pesticides, liquid fertilizers, biocontrol products, adjuvants, additives), test the combination on a small portion of the crop to be treated to ensure that a* **phytotoxic** *response will not occur as a result of application*.

Damage caused to a plant sensitive to the herbicide 2,4–D. Photo courtesy of Bugwood.org

Greenhouse: a structure for growing agricultural plants that is enclosed with a nonporous covering and large enough to allow a person to enter.

Label example: *PRECAUTIONS, RESTRICTIONS. Desirable vegetation must not be present during application and air circulation fans must be turned off until after the application has dried. Do not use in residential* **greenhouses.**

Though open for ventilation, this greenhouse fits the definition with its nonporous polyethylene covering and room to enter and stand. Photo by Rutgers University.

Nursery: an operation that produces agricultural plants, flowers, or fern cuttings outdoors or in translucent structures for transplanting to another location.

Label example: *This product is recommended for use in site preparation prior to planting any tree species, including Christmas trees, eucalyptus, or hybrid tree cultivars and in silvicultural* **nursery** *sites.*

As part of a nursery operation this structure allows entry, but its sides and ends are covered with porous shade cloth, so it cannot be considered a greenhouse. Photo by N. Frank, University of W. Hngary, Bugwood.org

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
July–September 2014

PREVIOUS RECERTIFICATION ARTICLES

April–June: How to Find Bed Bugs (p. 2), Protecting Children From Poison Emergencies (p. 5),

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