



The Pesticide Label

*Key to Pesticide
Safety and
Education*

May/June 1999

Department of Environmental Biochemistry

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Editor's note

Nearly three years ago the Pesticide Applicator Training program in the University of Hawaii's College of Tropical Agriculture and Human Resources reached agreement with the Hawaii Department of Agriculture's Pesticides Branch to distribute training materials. This unusual arrangement resulted from the University of Hawaii's budgetary restrictions and prohibition on charging for training and training materials. Fortunately, the 1996 Legislature allowed the Pesticides Branch to establish a revolving account to support educational activities. However, under guidelines established by this year's Legislature, it became prohibitively expensive for applicators to purchase training materials from the DOA. Perhaps as a result of acute belt-tightening, the University approved the establishment of a revolving account to partially cover the cost of the PAT program. Responsibility for reproduction and distribution of training materials has now been transferred back from the DOA to the Pesticide Applicator Training Program. There will be no increase in the cost of training materials or training. Funds collected from training and training materials will be used to develop new materials and provide increased access to training. For example, training materials, issues of this newsletter, and training schedules can now be downloaded from the PAT web site (<http://pestworld.stjohn.hawaii.edu/epp/pat.html>). We look forward to developing a pesticide safety training program more responsive to your needs.

Barry Brennan, PhD.
Pesticide Coordinator

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Regulatory Updates

We listed Special Local Need (SLN) labelings in previous issues of this newsletter. Here is an update.

NEW or RENEWED

Macadamia—Thiodan 50W Insecticide (FMC; 279-1380)—HI-880008, valid 04/01/99–03/31/2004—24 hr. re-entry period for any unprotected persons. Area being treated must be vacated by unprotected persons. Do not apply within 2 days of harvest. Do not apply by air or through any type of irrigation system. Maximum 6.0 pounds per acre per year.

EXPIRED or EXPIRING SOON

Macadamia Nut—Ethrel Plant Growth Regulator for Pineapples and Sugarcane (Rhone-Poulenc Ag.; 264-257)—HI-840004 expires 07/12/99.

Macadamia plantings (*Macadamia ternifolia* var. *integrifolia*)—Goal 1.6E Herbicide (Rohm & Haas; 707-174)—HI-840006 expires 07/26/99.

Macadamia plantings (*Macadamia ternifolia* var. *integrifolia*)—Goal 2XL Herbicide (Rohm & Haas; 707-243)—HI-960010 expires 07/26/99.

Government **mosquito abatement** programs only—Dimilin 25W Insect Growth Regulator (Uniroyal; 37100-8-400)—HI-940003 expires 07/25/99.

Pineapple—Ethrel Ethephon Plant Regulator (Rhone-Poulenc Ag.; 264-257)—HI-940004 expires 09/11/99.

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Hawaii Farmer Charged with Misapplying Pesticide

A proprietor of a ginger root farm in Hilo was indicted on May 20 in the U.S. District Court in Honolulu on criminal charges of misapplying the restricted use pesticide, Nemacur, to his ginger root crop in violation of the Federal Insecticide, Fungicide, and Rodenticide Act. Nemacur is prohibited for use on ginger root. The grower, who is not a certified applicator, allegedly directed workers to make the pesticide application without complying with required standards for worker protection. One worker suffered acute poisoning and had to be hospitalized [for three days in intensive care]. The grower also was charged with making false statements to the Hawaii Department of Agriculture about the type of pesticide he was using. If convicted on all charges, he faces a maximum term of up to 10 years 2 months imprisonment and/or a fine of up to \$520,000. The case was investigated with the assistance of EPA's National Enforcement Investigations Center and is being prosecuted by the U.S. Department of Justice.

[SOURCE: 5/27/99 EPA Press Advisory]

The grower also faces a civil complaint filed by EPA. It charges him with 11 counts of violating pesticide use and safety laws, including allowing an employee to come into contact with Nemacur; failing to provide protective equipment or training on pesticide safety and safe use of pesticide application equipment; using restricted use pesticides without certification; storing restricted use pesticides illegally at a residence; and applying a restricted use pesticide to a crop not allowed for that product. The complaint may result in penalties of up to \$12,100.

"This individual knowingly disregarded the health and safety of his employees," said Enrique Manzanilla, regional director of the EPA's Cross-Media Division. "His callous pursuit of self-interest is a betrayal to those thousands of farmers across the country who are working hard to provide a safe environment for their workers."

"What's unfortunate about this case is that it could have been prevented, if [the grower] had taken the necessary precautions and safeguards to comply with worker protection requirements," said James J. Nakatani, chairperson for the Hawaii Department of Agriculture. "It's in the best interest of all of us in agriculture, especially the farmer, to train workers to understand the hazards associated with improper pesticide use and to provide safe working conditions, including proper clothing, equipment, and decontamination facilities."

The Hawaii Department of Agriculture Pesticide Education Program provides farmers with information on how to comply with pesticide use requirements. For more information on this program, farmers in Hawaii can call: (808) 973-9411 (Oahu), (808) 974-4142 (Hilo, Hawaii), and (808) 873-3555 (Maui).

[SOURCE: 5/21/99 joint news release, EPA and Hawaii Department of Agriculture, "EPA files complaint against island grower for pesticide violations."]

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Hawaii Pesticide Study Materials and Newsletter on the Internet

"Recertification Topic" articles from this newsletter and study materials for restricted use pesticide certification may be viewed in and printed from our **Pesticide Applicator Training (PAT)** website:
<http://pestworld.stjohn.hawaii.edu/epp/pat.html>.

The Pesticide Label (newsletter) webpage presents recertification topic articles from the latest issue and 11 previous issues. These may be viewed in and printed from the Recertification Articles Only section. These articles also

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appear in whole newsletters shown in two other sections, Current Issue and Back Issues.

Certified applicators (except those in Commercial categories 8 and 10) may earn a recertification credit by correctly answering at least 70% of the comprehension evaluation (quiz) questions on each issue's recertification topic article(s). For information about participating in the quizzes, contact one of the following Hawaii Department of Agriculture (HDOA) offices: Kauai 274-3069, Oahu 973-9401, Maui 873-3555, Hawaii 974-4143. The area code for all offices is 808.

Our **Study Packets** webpage presents buttons for the 17 certification categories. Clicking on a category's button will let you view the introduction and checklist of titles of all the materials for the category. Clicking on a title gives a view of the material's text and images. Study packets are made up of 23–27 items (an average of about 440 pages of material).

You may buy packets of study materials from the Agricultural Diagnostic Service Center (ADSC), a part of the UH College of Tropical Agriculture and Human Resources. The cost is \$20 for a *complete* packet. This contains the "core" materials common to all categories plus materials specifically for the category you choose. (If you are not sure which category is appropriate for you, contact one of the HDOA offices listed above.) For \$10, you may order just the *category-specific* materials packet. This contains no "core" materials, just the materials specifically for the category you choose. You may download an order form for pesticide study packets (<http://pestworld.stjohn.hawaii.edu/studypackets/spcatgor.html>) or request one from the Agricultural Diagnostic Service Center by PHONE (808) 956-6706; FAX (808) 956-2592; EMAIL ta_svcctr@avax.ctahr.hawaii.edu; or MAIL ADSC, Sherman Lab 134, 1910 East-West Rd., Honolulu, HI 96822. Complete the form and send it with payment to the ADSC's address shown on the form.

* * *

Label References to Other Documents (Recertification Topic)

Recertification credits may be earned by certified applicators (except those in Commercial Categories 8 and 10) who take advantage of *recertification topic articles* printed in this newsletter. To earn credit for the articles, an applicator must correctly answer at least 70% of the evaluation questions prepared by the Hawaii Department of Agriculture (HDOA) staff. For more information, call one of the following HDOA offices: Kauai, 274-3069; Oahu, 973-9401; Maui, 873-3555; Hawaii, 974-4143. The area code for all offices is 808.

Some pesticide labels refer you to booklets, manuals, or other documents that are not attached to the pesticide containers. These supplemental documents give instructions or restrictions for handling the pesticides properly. Most explain transport, storage, application, and disposal in detail.

Be sure you heed any of these instructions or restrictions that apply to your pesticide handling operation. These statements tell how to make efficient use of the products and how to lessen the risk of pollution and injury or illness. Also remember that the do's and don't's in these documents are more than suggestions. The Hawaii Department of Agriculture considers them to be enforceable and its inspectors may check for compliance during inspections or investigations of complaints.

These supplemental documents may be grouped as follows:

1. Manufacturers' guides

Example, from the Meth-O-Gas® Q [fumigant] label: *You must carefully read and understand the **accompanying use directions, GLK 398A** in order to use Meth-O-Gas® Q. Observe all safety and precautionary statements as set forth in the accompanying use directions, GLK 398A. All fumigation directions, including dosage rates, exposure times and aeration periods are given in the accompanying use directions, GLK 398A. [GLK 398A is a 21-page booklet.]*

2. Association or industry guides

Example, from the Wolmanac Concentrate 60% [wood preservative] label: [Pressure treatment] *procedures must rigidly adhere to the current specifications by Hickson Corporation and/or those of the **American Wood Preservers Association.***

3. Government regulations

Example, from labels of all pesticides registered for treating agricultural plantings: *Use this product only in accordance with its labeling and with the **Worker Protection Standard, 40 CFR part 170.*** [Instead of referring to “40 CFR part 170,” you may refer to the EPA’s ‘How to Comply’ manual. A free copy of the manual is available from one of these Hawaii Department of Agriculture offices: Oahu 973-9401, Maui 873-3555, Hawaii 974-4143.]

Example, from the Telone® II [fumigant] label: *In-tank cleaning of bulk tanks must be performed only by persons who have been specifically trained for this activity. Refer to **OSHA 29 CFR Part 1910.146** and Telone User’s Guide section on Storage Tanks.* [“OSHA 29 CFR Part 1910.146” discusses protection from hazards of entering certain kinds of confined spaces.]

Example of reference to an NPDES water discharge permit, from the label of a commercial-size container of liquid disinfectant: *Do not discharge effluent containing this product in to lakes, streams, ponds, estuaries, oceans, or other waters unless this product is specifically identified and addressed in an **NPDES permit.*** [“NPDES” stands for National Pollutant Discharge Elimination System.] *Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.* [NPDES permit statements like this are required by EPA to appear in the ENVIRONMENTAL HAZARDS section of labels of pesticides that may be discharged into the waters of the U.S. or to municipal sewer systems. Such pesticides include those packaged in containers equal to or greater than 5 gallons (liquid) or 50 pounds (solid, dry weight), and registered for industrial preservative, water treatment, other industrial processing uses (such as cooling tower water systems, pulp and paper mill water systems, secondary oil recovery injection water systems, food processing operations, leather tanning, wood protection, and textile treatment) and commercial and institutional uses (such as hospitals, hotels/motels, office buildings, and prisons). EPA requires the statements in order to remind operators of facilities which may use and discharge these kinds of pesticides of their obligations under the Clean Water Act or to local “publicly owned treatment works.” EPA believes that they may already be aware of their obligations via other mechanisms at the state and local level.]

4. Government guides

Example of reference to endangered species county bulletins, from the label of Dimethoate 400, an insecticide: *Before using this pesticide on corn, wheat, soybeans, sorghum, cotton in the counties listed below* [None of Hawaii’s counties are listed.], *you must obtain the **PESTICIDE USE BULLETIN***

“CFR” stands for the “Code of Federal Regulations,” which appears as a long row of short thick books in some libraries on the government documents shelves. These books contain the regulations issued by the Federal government. Text of the CFR may also be viewed at the U.S. Government Printing Office’s website, <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html>.

In Hawaii, NPDES permits are issued by the Hawaii Department of Health’s Clean Water Branch. More information about EPA’s policy about NPDES statements on pesticide labels may be found in “Pesticide Regulation Notice 95-1” (EPA, 5/1/95) and “Pesticide Regulation Notice 93-10” (EPA, 7/29/93). The text of both may be viewed at EPA’s website, http://www.epa.gov/opppmsd1/PR_Notices.

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FOR PROTECTION OF ENDANGERED SPECIES for the county in which the product is to be used. The bulletin is available from your County Extension Agent, State Fish and Game Office, or your pesticide dealer. Use of this product in a manner inconsistent with the PESTICIDE USE BULLETIN FOR PROTECTION OF ENDANGERED SPECIES is a violation of Federal laws. [This example does not apply in Hawaii, and right now it's rare to find pesticide labels referring you to endangered species county bulletins. But in the future, if your pesticide's label refers you to a such a bulletin for a county where you apply the pesticide, you would be obligated to follow its instructions and restrictions.]

Example of reference to well head protection guidelines, from a termiticide label: *Consult state and local specifications for recommended distance of well from treated areas, or if such regulations do not exist, refer to Federal Housing Administration Specifications (H.U.D.) for guidance.*

Also present on some pesticide labels are statements that give **options** for safety gear required by the label. Here's an example from the label of an emulsifiable concentrate herbicide:

Personal Protective Equipment (PPE)—Some materials that are chemical-resistant to this product are listed below. [The list includes "chemical-resistant gloves, such as barrier laminate or nitrile rubber or neoprene rubber or Viton."] If you want more options, follow the instructions for Category E on an EPA chemical resistance category selection chart. [You may view the chart at our webpage, Recertification Topics July/August 1998, <http://pestworld.stjohn.hawaii.edu/pat/re070898.html>. Or to request a copy, contact us at one of the numbers or addresses listed on last page of this newsletter and give your mailing address.]

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Short Course for Pesticide Applicators

A pesticide applicator training course will be conducted on Oahu and Molokai for people who want to prepare for the restricted use pesticide certification exam or to be better informed about handling pesticides properly.

The 16½-hour course is made up of five meetings. Breaks are scheduled 50–60 minutes apart. The instructor will require pagers and cellular phones to be silent during class.

The course supplements the study packet included with the registration fee but is not a substitute for reading and studying. The instructor will emphasize the study packet's "core" materials, which are the booklets and leaflets written for all categories of certification. "Category-specific" materials will not be covered. Topics to be covered include • Pesticide types and formulations • Understanding pesticide labels & labeling • Laws and regulations about buying, storing, transporting, applying, disposal, employee protection • Common pests' general identification features and life cycles • Application equipment • Dilution and dosage calculations • Drift management • Ground water protection • Resistance • Phytotoxicity • Hazards to people • Human exposure routes and signs & symptoms • Protective clothing and equipment • Safe mixing, loading, and application.

LOCATIONS & SCHEDULE

OAHU at Kapiolani Community College on Diamond Head Rd. in Honolulu—

Monday, August 30 (12noon–3:30pm); Sept. 1 (12noon–3:00pm); Sept. 3 (12noon–3:30pm); Sept. 8 (12noon–3:00pm); and Sept. 10 (12noon–3:30pm). *Deadline for registering is August 13.*

MOLOKAI at the Molokai Irrigation Office on Puupeelua Ave. in Hoolehua—Tuesday, October 12 (12:30–4:00pm), Oct. 13 (8:00am–4:00pm), and Oct. 14 (8:00am–4:00pm). Lunch break is 90 minutes. *Deadline for registering is September 24.*

REGISTRATION

Registration is limited to 25 people. A course may be postponed if less than 10 people have registered by the deadline. If you have a disability and may need accommodations to fully participate, contact the Agricultural Diagnostic Service Center in Honolulu at (808) 956-6706 by the stated deadline. If you register by the stated deadline, a map and other course information will be sent with a confirmation–receipt. If you register late, call to confirm and to request the course information.

Fee is \$100 (includes a study packet), or \$80 for those who already have a packet. You may indicate your order for a study packet on the registration form described below.

To register:

1. **Reserve a seat**—If requested, we will reserve a seat for a trainee until the registration deadline. (We may limit the number of seats reserved by an organization.) A reserved seat will be offered to the next person on the list if registration and payment reaches us after the deadline. Send a reservation request, including *name* and a *daytime phone number*, to Agricultural Diagnostic Service Center by PHONE (808) 956-6706; FAX (808) 956-2592; EMAIL ta_svcctr@avax.ctahr.hawaii.edu; or MAIL ADSC, Sherman Lab 134, 1910 East-West Rd., Honolulu, HI 96822.
2. **Get a registration form** from one of the following:
 - Agricultural Diagnostic Service Center
 - Charles Nagamine, UH Manoa, Honolulu, ph. (808) 956-6007
 - Cooperative Extension Service, Molokai, ph. (808) 567-6833
 - Cooperative Extension Service, Maui, ph. (808) 244-3242
 - Hawaii Dept. of Agriculture, Maui, ph. (808) 873-3555.
3. **Send completed registration form with payment** to the Agricultural Diagnostic Service Center.

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Heptachlor epoxide found in cucumber samples (from June 16, 1999 DOH press release)

Heptachlor epoxide residues have been found in Japanese cucumbers grown on former pineapple and some sugar lands treated with heptachlor. Because residues exceeded federal standards (action levels) the Departments of Health (DOH) and Agriculture advised farmers not to plant cucumbers in soil that has been treated with heptachlor.

"This advisory is a precautionary measure and consumers can feel confident that eating locally grown vegetables is safe," stressed Health Director Dr. Bruce Anderson. "However, this is an opportunity for the State to look closely at what food is grown on land once treated with heptachlor and to take steps to ensure that public health is not comprised."

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At high levels heptachlor and heptachlor epoxide (heptachlor's breakdown product) can cause central nervous system effects in humans. Additionally, EPA has classified these compounds as probable human carcinogens based on studies conducted on laboratory animals.

In the past 15 months, only two samples of Japanese cucumbers were found to contain heptachlor epoxide. DOH determined that the health risks from eating contaminated cucumbers are insignificant. Their assessment was based on the fact that levels detected were low and the cucumbers from these fields were not in the marketplace for an extended length of time.

Heptachlor epoxide was found mainly on the outside of the cucumber and washing reduced its concentration. Removing the peel further reduced residues.

The DOH's Food and Drug Branch routinely samples food products grown in Hawaii to ensure the safety of the food supply. During sampling of Kunia grown Japanese cucumbers in March 1998, inspectors found 26 parts per billion (ppb) heptachlor epoxide. Additional samples of the suspect cucumbers did not contain heptachlor epoxide above the federal limit (20 ppb) for this vegetable. Despite this, the grower discontinued harvesting and destroyed the remainder of his crop. Subsequently, a single cucumber sample from Molokai was found to contain 34 ppb heptachlor epoxide. The crop was recalled and destroyed.

Cucumbers from about 20 wholesale and retail firms have also been analyzed. No heptachlor epoxide has been detected. Other crops (such as watermelon, onion, zucchini, Kabocha pumpkin and sweet potato) were collected and found to be free of heptachlor epoxide.

The Department of Health and Agriculture are now working in cooperation with the farming community to identify lands with heptachlor epoxide in order to prevent future cucumber contamination.

* * *