

The Pesticide Label

*Key to Pesticide
Safety and
Education*

January/February 1999

Department of Environmental Biochemistry

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Editor's note

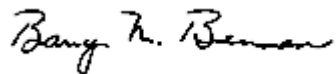
Last month I returned from an 18 month "tour" with USDA and EPA in Washington, DC, political center of the universe. Every word, every action seemed to have a political agenda. I think I was starting to get a bit jaded because when Consumers Union (CU) came out with a report on food safety I immediately suspected an alternative motive. The report was a lead story on CNN and showed up on the front page of the Honolulu Advertiser. The authors of the report proposed that EPA use a "Toxicity Index" (TI) to identify pesticide products that posed the greatest risks to children and infants. They suggested that the most toxic products be removed from the market. (That seems fair.) The TI depended on the average (mean) amount of pesticide residues found in produce as reported in USDA's Pesticide Data Program (PDP).

The use of mean residue levels overestimates the actual residue values since CU only included samples which had **detectable** residues. The actual mean residue level is probably much lower since some samples probably had levels below the Limit of Detection (LOD). In 1997, USDA screened 614 pear samples for parathion and found detectable levels in four of them ranging from 0.003 to 0.31ppm. All the detectable levels were below the established tolerance. If only 10 percent of the pears had been treated with parathion, then 57 samples had less than the LOD. If these "non-detects" were included in CU's calculations, then the mean residue level would be dramatically lower. CU grossly overstated the TI.

I suggest we focus on why residues vary so much for the same chemical on the same crop. If 57 pear growers can produce a crop without detectable residues, perhaps the other four can, too. Variations could be

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FOR

Barry Brennan, PhD.
Pesticide Coordinator

Recertification Articles Index

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- Jul/Aug 1997—Tyvek® coveralls for liquid pesticide treatments (p.2); Dilution and dosage instructions on pesticide labels (p.3)
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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

Rice grown for seed—Quadris Flowable Fungicide (Zeneca Inc.; 10182-415)—HI-990001, valid 02/02/99–02/01/2004—Aerial and ground application allowed. Do not apply more than 37 fl. oz. per acre per year. 28 days to harvest. Hold water for 15 days. Do not rotate broadleaf and root crops to treated area.

EXPIRED or EXPIRING SOON

Macadamia—Thiodan 50W Insecticide (FMC; 279-1380)—HI-880008 expires 3/08/99.

Forests, offshore islands, other non-crop areas to protect Hawaiian native and endangered plants and animals—Eaton’s Bait Blocks Rodenticide (J. T. Eaton & Co.; 56-42)—HI-960008 expires 04/11/99.

* * *

Written Instructions to Noncertified Applicators of Restricted Use Pesticides (Recertification Topic)

Articles in the previous issue of this newsletter explained the special hazards of restricted use pesticides and the need to give direct supervision and written instructions to a noncertified applicator who handles them. This article discusses written instructions and presents an example based on ProLine Plus, a fictitious restricted use pesticide.

Hawaii Department of Agriculture (HDOA) regulation requires that a noncertified applicator who handles a restricted use pesticide (RUP) be given written instructions by the certified applicator who provides the RUP. According to the HDOA, **written instructions should include:**

1. Information about the certified applicator
 - a. Name
 - b. Certification card number and expiration date.
 - * Company name or employer name suggested
2. Specific instructions for application
 - a. Brand (product) name of the RUP
 - b. Specific rate of application
 - c. Site or crop, location, and method of application (for example, band, broadcast, spot, drench)
 - d. Total area to be treated
 - e. Specific sprayer or device (pre-calibrated) to be used
 - f. Amount and directions for preparing the pesticide spray mixture for that particular sprayer or device
3. Safety measures to be taken
 - a. Specific personal protective equipment (PPE) items to be worn
 - b. How to respond to spills or leaks (taken from the pesticide's label, if available). List cleanup materials that should be in possession on the truck or nearby where the handling tasks are being performed.
 - c. Other cautionary measures (taken from the PRECAUTIONARY STATEMENTS section of the label)
4. Responses to pesticide exposure
 - a. Telephone number for medical emergency
 - b. Decontamination methods and other first aid procedures (taken from the STATEMENT OF PRACTICAL TREATMENT section of the label)
5. Means of contacting the certified applicator at any time during the application, such as the voice, cellular, or radio call phone number.
6. Whether the pesticide labeling should be in the possession of the user at the time of application, if specified (for example, by the labeling for a Special Local Need registration)

The pesticide's label contains much of this information.

Written instructions like the example below are appropriate if the crop (site) to be treated and the procedures do not vary from time to time. But

(continued on p.4, Written Instructions)

(Written Instructions continued from p.3)

for complex jobs such as structural fumigation, written instructions may not adequately explain what things to consider when making necessary calculations, adjustments, and choices. For these kinds of complex jobs, the physical presence of the certified applicator at the site may be required.

HDOA provides the following example of written instructions from a certified Private applicator to his or her noncertified handler for applying ProLine Plus, a fictitious restricted use pesticide. (Consider protecting your own written instructions from water and wear by laminating them or putting them in clear vinyl sheet protectors.)

FRONT PAGE OF INSTRUCTIONS (EXAMPLE)

**Morning Glorie Farm's
INSTRUCTIONS FOR APPLYING PROLINE PLUS
(EPA Reg. No. 11111-222, a restricted use pesticide)
under the supervision of Jamie Glorie
(certification card number B12345 expiring 11/30/99)**

To spray weeds:

- * Apply 25 gallons per acre of 1.0% mixture of ProLine Plus (weed killer) to 4 acres of coffee field. Follow MIXING INSTRUCTIONS below to make a 1.0% solution of ProLine Plus.
- * Use a directed spray pattern with Sprayer A or Sprayer B.
- * Always check spray nozzle tips for correct spray pattern or plugging.
- * Flush all spray equipment with water after use each day. Apply rinse water back on site.

Mixers and loaders: Wear the following personal protective equipment.

1. Face shield
2. Waterproof gloves
3. Long-sleeve shirt
4. Long pants
5. Chemical resistant apron
6. Shoes plus socks

Applicators and other handlers: Wear the following personal protective equipment.

1. Long-sleeve shirt
2. Long pants
3. Waterproof gloves
4. Shoes plus socks

MIXING INSTRUCTIONS for making 1.0% mixture of ProLine Plus:

* For Sprayer A (50-gallon tank):

1. Fill half of tank with water.
2. Add 2 quarts ProLine Plus.
3. Add 1 cup So-Wet spreader-sticker.
4. Add water up to the 50-gal. mark.

* For Sprayer B (100-gallon tank):

1. Fill half of tank with water.
2. Add 4 quarts ProLine Plus.
3. Add 2 cups So-Wet spreader-sticker.
4. Add water up to 100-gal. mark.

FOR LEAKS OR SPILLS: Have one or two bags of absorbent materials (cat litter) and large plastic bags readied on the truck or nearby where the handling tasks are being performed. In case of leaks or spills follow the basic safety principles and the three C's (Control, Contain, Clean up) of spill management, in the manner you were trained. If you don't know or forget what to do, call for help and wait until it arrives.

BACK PAGE OF INSTRUCTIONS (EXAMPLE) showing parts of the front panel of the RUP's label.

ProLine Plus



Fatal if swallowed, inhaled or absorbed through skin. Causes irreversible eye damage. Causes skin irritation. May cause allergic skin reaction

Do not get in eyes, on skin, or on clothing. Do not breathe spray mist. Wash splashes from skin and eyes immediately.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chew-

ing gum, using tobacco, or using the toilet.

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

(continued on p.6, Written Instructions)

(Written Instructions continued from p.5)

ONE SWALLOW CAN KILL!

Symptoms are prolonged and painful. Onset of symptoms may be delayed up to 3 days after swallowing.

- Do not use or store in around the home.
- Do not remove contents except for immediate use.
- Never put into food, drink, or other containers.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED, immediately induce vomiting by touching back of throat with finger. Administer fluids and induce further vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Get to hospital or physician fast. Prompt treatment is essential and must be initiated before signs and symptoms appear.

IF ON SKIN: immediately wash with soap and water. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut or repeated contact with intact skin may result in poisoning. Get medical attention.

IF IN EYES: Immediately wash eyes with water for at least 15 minutes and get medical attention.

Contact may cause eye injury. Call a physician.

IF INHALED: Immediately remove victim to fresh air or get away from spray mist. Exposure may cause irritation, nose bleeds, and may lead to poisoning. Stop and check spray procedures. The odor of this product is from the stenching agent which has been added, not from fenamet.

Read and follow PRECAUTIONARY STATEMENTS.

NOTE TO PHYSICIANS: Call ProLine Products Medical Emergency Information, 1-800-XXX-XXXX, at any hour to obtain toxicology and medical management consultation, a supply of sorbatite clay, and fenamet analysis. Symptoms following ingestion may be delayed up to 3 days. To be effective, treatment for fenamet poisoning must begin immediately. Treatment consists of binding fenamet in the gut with suspensions of sorbatite or charcoal and removal of fenamet from the blood by prolonged charcoal hemoperfusion or continuous hemodialysis.

* * *

Proposed Changes to Certification and Training Program

Background

Two years ago USDA and EPA initiated a national review of state pesticide applicator training and certification programs. Each state was asked to complete a questionnaire about four aspects of their program: content, infrastructure and delivery, funding, and evaluation. The questionnaire and survey responses were compiled by the Certification and Training Assessment Group (CTAG). CTAG included representatives of state extension pesticide coordinators, state pesticide certification program managers, the Department of Defense, EPA's Certification and Worker Protection Branch and USDA's National Program Leader for Pesticide Applicator Training. Based on the review and CTAG comments, EPA completed their report, "Pesticide Safety for the 21st Century." This report was issued in January and is now available to all stakeholders for comment (see below for details).

Proposed Changes

The proposed changes are grouped into five goals. The proposals are intended to increase program efficiencies at the federal and state level. At the very least, the proposals provide states with ideas for moving their programs forward to achieve the goals of the original PAT/C Program, i.e., provide EPA an alternative to cancelling pesticides critical to effective pest management.

Several proposals require significant change to federal laws and could only be implemented over the long-term. CTAG identified 5 distinct goals for the program. Of the 39 proposals associated with these goals, several could have substantial impact on Hawaii's Pesticide Applicator Training and Certification Programs. For Hawaii, the proposals would (1) develop a consumer pesticide education program, (2) expand the scope of those covered to include anyone who applies pesticides to food crops or as part of their occupational responsibilities, and (3) change how the program is funded. The goals and how they might affect Hawaii's applicators are described below.

Goal 1. Reduce the risks to the public from pesticide use.

CTAG recommended developing a national consumer education program which includes pesticide safety training and educational materials. In general consumers generally have little understanding of how pesticides are regulated and used. More importantly flagrant or careless pesticide misuse by consumers could result in demands to cancel or severely restrict the use of some products needed by private and commercial applicators.

The consumer education program would be part of a broader attempt to establish a tiered pesticide classification scheme. Although consumer or homeowner products would not be classified, and therefore not require certification, all other products would be classified. Anyone who uses a pesticide as part of their occupational responsibilities would have to be certified. For example, groundskeepers, landscapers, rights of way maintenance workers, structural pest control operators, and researchers would have to be certified even if they don't apply restricted use products. Virtually, anyone who applies a pesticide as part of their occupational responsibilities would have to demonstrate some level of competency. Competency would be linked to the potential health and environmental risks associated with products used by their industry. Users of restricted use products would continue to be certified as they now are. This proposal also creates a new "super" commercial category for pest management consultants who could prescribe pesticides that might otherwise be cancelled during reregistration or as the result of implementation of the Food Quality Protection Act (FQPA).

(continued on p.8, Proposed Changes)

(Proposed Changes continued from p.7)

Broadly viewed, the CTAG proposed that pesticides be classified for use by:

- (1) Consumers and homeowner products;
- (2) General or unclassified pesticide products for occupational use only;
- (3) Restricted use pesticide products (current system) for occupational use only;
- (4) Restricted prescription use products for occupational use only.

Training and certification requirements would depend on the classification of pesticides being used.

The Worker Protection Standard training requirements would be integrated into all training programs including categories which are not currently subject to WPS provisions, e.g., structural pest control and rights-of-way pest control. The goal is to reduce or eliminate worker exposure to pesticides irrespective of occupation.

Goal 2. Provide high quality pesticide education and safety training programs.

This proposal creates a certified service technician category, a concept supported by landscape and structural pest control industries. Increasing program responsibilities would necessitate expanding state extension or private training resources.

Goal 3. Maintain consistency, integrity and validity of the certification and recertification programs and processes.

CTAG proposes to establish prerequisites for certification such as minimum age requirements, English proficiency and work experience. This proposal could pose some problems for non-English proficient applicators, such as some of our recent immigrants.

Written exams would be required for all applicators including applicators who do not use Restricted Use Pesticides. Hawaii's standards for certification are already higher than the majority of states. CTAG could recommend a "national board" supplemented by a section on state laws and regulations. This would benefit those states that share reciprocity agreements with neighboring states.

Goal 4. Provide for long-term funding.

Funding is always an issue and the discussion regarding how to fund the proposed changes was interesting. It was suggested that pesticide manufacturers be assessed a fee by EPA (or the state) to support state training and certification programs. Should such fees be limited to manu-

facturers of RUP's since they are the primary beneficiaries of the program? If the program is expanded to include non-RUP training and certification should all product manufacturers be assessed a training and certification fee at the time of federal registration? The Hawaii DOA already assess a state fee when the product is licensed for sale.

State pesticide program resources have diminished since the program was initiated nearly 25 years ago. Many states are cooperating with industry or trade associations to develop training materials and conduct training. These cooperative efforts often result in better training materials and more efficient use of training resources. What sort of cooperative efforts or agreements can be used to increase program efficiencies?

Hawaii's PAT program receives support from the State, from EPA, and from applicator training fees. Interestingly, USDA supports programs to (1) develop alternatives to pesticides, (2) assess how pesticides are used, (3) measure how much residue is left on crops, (4) promote farm safety, (5) reduce the use of pesticides, and (6) enforce pesticide record keeping requirements, but it does not fund pesticide safety education.

Goal 5. Improve national coordination of training and certification programs.

Applicator feedback is needed to assess program effectiveness. Should Hawaii's PAT program establish an advisory committee to help focus attention on applicators' needs and concerns?

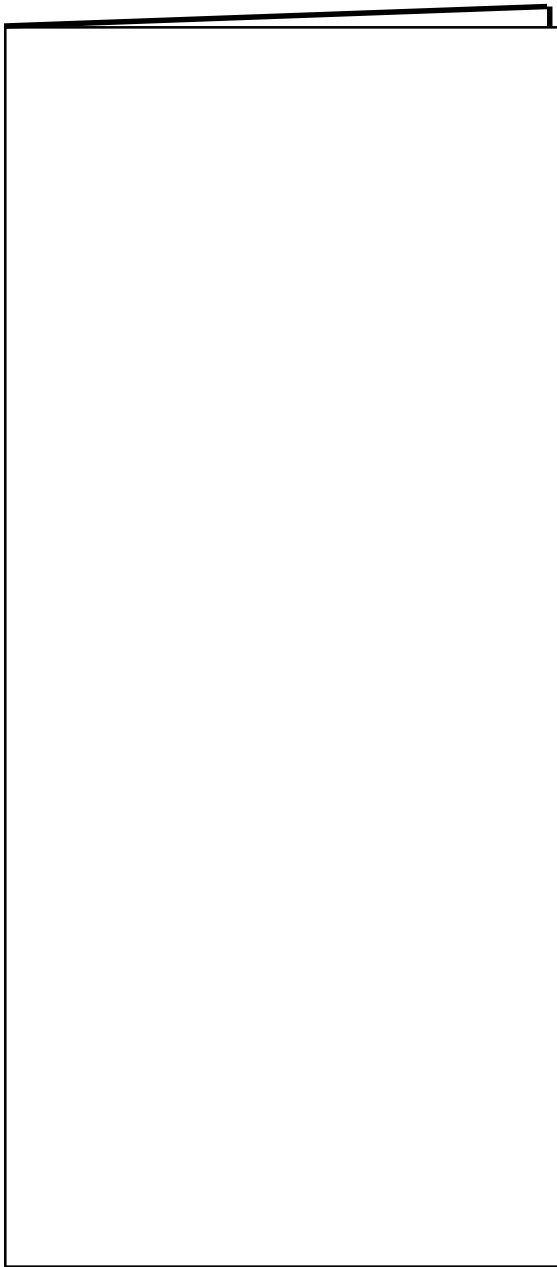
Stakeholder Responses Needed

Please contact me if you would like a copy of the draft CTAG report *Pesticide Safety for the 21st Century*. The report may also be viewed or downloaded from the American Association of Pesticide Safety Educator's web site (<http://aapse.ext.vt.edu/>).

All of the proposals are subject to change or elimination as a result of stakeholder feedback. A final report will be presented at the National Pesticide Applicator Certification and Training Workshop in August. That report will be used to develop the Strategic Plan for the Pesticide Applicator Training and Certification Program. CTAG is requesting stakeholder comments on the proposals be sent to: Jeanne Heying, Environmental Protection Agency, 401 M Street, S.W. (7506C), Washington, DC 20460, fax (703) 308-2962, or heying.jeanne@epa.gov". Comments are due by 2 April 1999.

* * *

EPA Pesticide Brochure Finally Arrives



EPA started shipping copies of their long awaited brochure on “Pesticides and Food” to 40,000 grocery stores. The brochure was produced in response to Congressional requirements that consumers be given more information about the use and risks of pesticides on foods. This requirement was included in the Food Quality Protection Act which repealed the Delaney amendment. The 1958 Delaney amendment prohibited the addition of any known cancer causing chemical to food, a prohibition that made less and less sense as scientist found that many substances found naturally occurring in food were cancer causing, but like pesticides were at levels below those known to cause cancers. After the “Alar Scare” and numerous articles alleging a link between adverse health effects and pesticides, Congress felt the need to reassure consumers about the safety of their food.

The contents of the brochure became controversial when the pesticide industry and some citizen activist groups interpreted Congressional intent differently. The pesticide industry saw the brochure as an attempt to reassure consumers that their food was safe. They wanted consumers to understand risks associated with pesticide residues and what they could do about removing them. The citizen activists thought the brochure should point out the potential harmful effects of pesticide residues and urge consumers to purchase produce grown without the use of synthetic chemicals.

After missing their deadline by 6 months and spending over \$150,000 before deciding what should and should not be in the brochure, EPA finally released the brochure in February. Now it seems, no one is particularly happy with the results. The brochure is a four-page, colored pamphlet telling what a pesticide is and why infants and children may be more vulnerable to pesticide exposures. It also gives some “healthy, sensible food practices” for reducing pesticide residues and where consumers can get more information about pesticide regulations, pesticides and children, integrated pest management and the meaning of “organically grown.”

While EPA is required to make the brochure available to grocery stores there is no requirement for grocery stores to display it. If every store receives only 100 copies of the brochure, EPA will have paid for printing and shipping 4,000,000 brochures. Imperfect as the brochure may be, such an effort deserves to have someone read it.

* * *

Training Course for Pesticide Applicators

March/April 1999						
S	M	T	W	T	F	S
		30	31	1	2	3
Hawaii		7	8	9	10	
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

May 1999						
S	M	T	W	T	F	S
						1
Kauai	4	5	6	7	8	
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June 1999						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	Maui	12	
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Beginning April 1, registration for training courses and requests for study materials will be handled by the UH College of Tropical Agriculture and Human Resources. Check the next issue of this newsletter for details.

In-depth 16¹/₂-hour training courses are open to people who want to prepare for the examination for restricted use pesticide certification or to be better informed about handling pesticides properly. Five meetings make up each course. The registration fee is \$100 and includes a study packet.

The next three courses are scheduled for:

HAWAII at the Komohana Agricultural Complex (875 Komohana St., Hilo), March 30–April 1, mornings and afternoons. To register or inquire, telephone Derek Shigematsu, 974-4143, at the Hawaii Department of Agriculture’s Pesticides Branch. Registration is limited to 25 people. The course may be postponed if less than 10 people have registered by the March 15. If you have a disability and may need accommodations to fully participate, contact Derek Shigematsu at 974-4143 by March 19.

KAUAI at the State Office Building (3060 Eiwa St., Lihue), May 10–12, mornings and afternoons. To register or inquire, telephone Anita Aquino, 274-3069, at the Hawaii Department of Agriculture. Registration is limited to 25 people. Deadline for registering is April 23. The 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 Anita Aquino at 274-3069 by April 23.

MAUI at the Maui Community College (310 Kaahumanu Ave., Kahului), June 1–3, mornings and afternoons. To register or inquire, telephone Wil Leon Guerrero, 873-3555, at the Hawaii Department of Agriculture’s Pesticides Branch. Registration is limited to 25 people. Deadline for registering is May 14. The 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 Wil Leon Guerrero at 873-3555 by May 14.

Topics to be covered include • Pesticide types and formulations • Understanding pesticide labeling • Laws and regulations about buying, storing, transporting, applying, disposing, employee protection • Application equipment • Dilution and dosage calculations • Drift management • Groundwater protection • Pest resistance • Phytotoxicity • Toxicity and exposure • Protective clothing and equipment • Safe mixing, loading, application.

A leaflet **Test Your Math Skills** is available to anyone who is thinking of registering. It presents exercises that will help a trainee refresh basic math skills needed to understand the instructor’s calculation examples. People who find the exercises difficult will get more benefit from a course if they seek tutoring before the course begins. Exam takers who need to polish their basic math skills are also invited to request a copy of the leaflet, since answering a major portion of the certification exam questions will require both basic and complex math skills.

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(Editor's Note continued from p.1)

due to crop varietal differences, environmental conditions or applicator competencies, or some combination of all three.

We can't do much about variation due to either crop varieties or weather, but we can do something about applicator competencies. If applicators do not (or cannot) accurately calculate how much material to put in their tank, do not (or cannot) accurately calibrate their application equipment, do not (or cannot) define optimal conditions for application, do not (or cannot) provide uniform application of product, do not follow application intervals including preharvest intervals, there will certainly be variation in residue levels.

Instead of taking regulatory action based on questionable assumptions, perhaps EPA and USDA should focus on reducing the mean residue values by promoting better training and certification programs for applicators. After all, the applicator is ultimately responsible for most of the residues. The recently released EPA/USDA Certification and Training Assessment Group report addresses the need to raise the bar for applicator competency (see CTAG article).

EPA and states typically spend one-third of one percent of the FIFRA-related budget on training applicators and 99.67% on regulation and enforcement. In the last two years EPA and states spent approximately \$90 million to investigate and cleanup methyl parathion misuse incidents in five states, yet didn't spend a dime on education for the same problem. Go figure...

It's good to be back in Hawaii.

* * *