



Pennsylvania

PESTICIDE HIGHLIGHTS

For Public/Commercial Pesticide Applicators

July 2000

Chlorpyrifos Insecticide Uses Severely Restricted

On June 8, 2000, the Environmental Protection Agency (EPA) and Dow Agrosciences released details of a joint agreement to severely restrict future uses of the insecticide compound chlorpyrifos. This agreement is in response to higher federal standards of pesticide risk reduction, put into place in 1996 by the Food Quality Protection Act. It will affect 254 different insecticide products that are registered in Pennsylvania, the most common of which are the Lorsban and Dursban product families marketed by Dow Agrosciences. Tables of how uses of chlorpyrifos will be affected are on pages 8 and 9. A major goal is to manage the risk to the public by changing the following use patterns:

Residential and Public Area Uses

- ❖ Cancel or phase out nearly all indoor and outdoor

residential uses to effectively eliminate the use of chlorpyrifos by homeowners, limiting use to certified, professional, or agricultural applicators. Those uses that pose the most immediate risks to children will be canceled first, including home lawn, indoor crack and crevice treatments, and whole house post-construction termiticide treatments.

- ❖ Cancel uses in schools, parks, and other settings where children may be exposed.
- ❖ Sale of products for these uses listed above will end December 31, 2001.
- ❖ Over the next several years, remaining uses, including spot treatments and local termiticide treatments and pre-construction termiticide applications will be phased out.

(See Chlorpyrifos on top of page 8)

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Department Reviews Fee Increase Proposals

Following over a year of public comment and negotiations, the Department of Agriculture is reviewing several proposals for increasing the fees charged to pesticide applicators, dealers, businesses and product registrants, which are set by regulation. The pesticide programs—including enforcement, education, CHEMSWEEP, container recycling, Emergency Medical Technician training, Urban Initiative, etc.—in Pennsylvania are self-funding, receiving no general tax support. Increases to the fees can only be proposed when the deficit spending is projected for two consecutive years.

The Department has worked hard to meet the challenges of fulfilling our mission without increasing fees. The present fees have remained unchanged since 1986 with the exception of the product registration fee,

which was raised in 1991. During the past 14 years, the Department of Agriculture has been able to provide the citizens of the Commonwealth with protection and services as required by both Federal and State laws, without increasing the cost to the regulated community.

As reported in the last *Pennsylvania Pesticide Highlights* newsletter the Department must now consider increasing fees to maintain the programs funded by the fees. The process to change the fees through regulation will require nearly a year to complete. The Department appreciates the comments received following the original notice and has modified the fee proposal to reflect those comments. As the Department of Agriculture makes a decision and the proposal moves forward through the regulatory change process, we will keep you informed.

What is West Nile Encephalitis?

West Nile encephalitis was detected for the first time in the United States in the New York City metropolitan area late last summer. Encephalitis is characterized by inflammation of the brain and spinal cord. The virus, which can cause this encephalitis, is transmitted by infected mosquitoes, mainly *Culex pipiens*, the species involved in the New York outbreak. Mosquitoes become infected after taking a blood meal from an infected bird, the natural host of this virus. The infected mosquito can then transmit the virus to humans and animals while it takes a blood meal.

Most people who are infected with the virus have either no symptoms or mild ones such as fever, headache, body aches, mild skin rash, or swollen lymph glands. A more severe infection, which may lead to encephalitis, includes headache, high fever, neck stiffness, stupor, disorientation, tremors, convulsions, muscle weakness, coma, neurological damage, and paralysis, but rarely death. Human cases have been confirmed only in the the New York City

metropolitan area, where the Centers for Disease Control and Prevention confirmed 62 cases of severe disease, including seven deaths. The virus has been found in wild birds in four states: New York, New Jersey, Connecticut, and Maryland.

All residents living in areas where West Nile virus has been detected can potentially become infected with the virus. However, only a small minority of people who become infected will develop a serious case of encephalitis. Some people, however, are at greater risk. People over 50 years of age are more likely to become severely ill because of their weakening immune system. All those who died from the virus in New York state were between 68 and 87 years old. Nevertheless, anyone with a compromised immune system, regardless of age, is at risk.

West Nile encephalitis symptoms were confirmed in 25 horses in New York. Nine of these horses died or were euthanized. Though birds harbor the virus, most species do not become clinically ill. However, 88 percent of the dead birds that tested positive for West Nile virus were American crows.

Currently, there is no human or equine vaccine to protect against the West Nile virus. Although there is no specific treatment, medication, or cure for this disease, the symptoms and complications of the disease can be treated.

The number of mosquito breeding sites around the home can be reduced by eliminating standing water in

which mosquitoes can breed. Dispose of anything outside that can hold water, particularly tires. Clean clogged roof gutters every year. Do not allow water to stagnate in birdbaths, ornamental pools, water gardens, and swimming pools and their covers. Alter the property landscape so as to eliminate standing water. Remember, during warm

The West Nile virus can only be transmitted when an infected mosquito takes a blood meal from a human or animal. The West Nile virus cannot be transmitted person-to-person, animal-to-animal, or animal-to-person.

weather, mosquitoes can breed in any puddle of water.

Follow these tips to reduce your risk of being bitten by a mosquito. Make sure window and door screens are “bug tight.” Stay indoors at dawn, dusk, and early evening. Wear long-sleeved shirts and long pants if you go outdoors at those times. Insect repellents when applied sparingly to exposed skin and thin clothing can deter mosquitoes from biting. Vitamin B and “ultrasonic” devices have not been proven effective in preventing mosquito bites.

For additional information, please call the PA Department of Health’s toll-free hotline at (877) PA-HEALTH or visit Penn State’s West Nile Virus web site at <http://www.pested.cas.psu.edu/spWestNile.html>. In addition, the fact sheet, “West Nile Encephalitis: What You Need to Know” is available from the Publications Distribution Center by calling 1-877-345-0691.

Sending an Applicator to Take a Certification Exam: Follow These Steps

Though the procedures for registering to take certification exams differ somewhat from region to region, the information the applicants need to bring with them to the test locations is the same. Companies sending checks for the incorrect fee amount cause the greatest delays. If a company sends one check for three applicators and only two take an exam, we cannot process the completed exams until a check in the correct amount is received.

Many delays in processing exams can be avoided if the applicants bring the following information and items to the testing site:

- ❖ Drivers license or other reliable form of identification.
- ❖ Approved certification study materials.
- ❖ Check or Money Order payable to the Commonwealth

of PA for the **EXACT** amount due for that individual (\$50 for the CORE Exam and \$10 per category).

- ❖ The name and category number(s) of exams to be taken.
- ❖ BU number, exact name, address, and phone number of your business or employer.

Remember the CORE exam is closed book while all the category exams are open book. Each exam session is three hours long. Some regions require reservations for exams as spacing is limited at the testing sites. Check the Internet at <http://www.pested.psu.edu/examfr.html> for exam dates, locations, and individual regional requirements, or contact your regional office.

Pesticide Businesses Have Areas for Improvement

The two most common enforcement problems encountered by inspectors this year include not properly notifying people listed on the Hypersensitivity Registry and not reporting pesticide applicator personnel changes. These violations have resulted in fines being assessed to Pennsylvania pesticide businesses.

Failing to provide proper notification to individuals listed on the Hypersensitivity Registry is consistently the

most common problem. Frequent excuses for failing to notify these individuals are the business did not thoroughly review the list for newly added names or they just got too busy. Businesses should realize that this requirement does not prohibit the use of pesticides near hypersensitive persons, only notification of pesticide

applications to be made within 500 feet of their primary or secondary locations as listed in the Registry. The regulation requires notification between 12 and 72 hours prior to an application with the various details of the application given to an adult at that location by telephone contact, personal contact, or certified mail. Each business is required to keep records of each notification. Section 128.112 of the Rules & Regulations identifies specific

requirements each business must meet. Some types of applications are exempt from notification such as: treatment within a single family structure, sub-surface soil injections, application within a tamper-resistant bait station, tree injection, and the use of disinfectant/sanitizers and swimming pool chemicals.

Section 128.31(d) of the Rules & Regulations requires businesses to report in writing to the Department any

changes in their pesticide application personnel or if they are no longer in business. Businesses need to report, within 15 days, any applicators (certified applicators or registered technicians) that leave their job or have a change in employment to a non-application position.

To keep your business

information current, report any application personnel changes to the Department of Agriculture's Harrisburg address (Bureau of Plant Industry, PA Department of Agriculture, 2301 N. Cameron Street, Harrisburg, PA 17110-9408).

Contact Joseph Uram, Pesticide Enforcement Specialist, PA Department of Agriculture, at 717-772-5212 with any questions you have on these topics.

Areas of improvement include properly notifying people on the Hypersensitivity Registry and reporting any pesticide application personnel changes.

Training Material Updates for Certification Exams

Here are two updates about the pesticide applicator training materials used to help applicants prepare for the certification examinations. Since last year's newsletter, five category training material packets were completely revised. These include: **Category 12:** Wood Destroying Pests; **Category 15:** Public Health: Vertebrate Pests; **Category 18:** Demonstration and Research; **Category 19:** Wood Preservation; and **Category 23:** Parks and Schools Pest Control. We hope to have several more packets revised and ready to go by early fall. Check our web site for updates: <http://www.pested.psu.edu/examfr.html>.

Previously, the Penn State Department of Distance Education distributed the training materials. As of mid-January, this responsibility was taken over by the Penn

State Publications Distribution Center (PDC) in the College of Agricultural Sciences. They have a toll-free telephone number at 1-877-345-0691 to place orders. Visa and MasterCard orders are accepted by telephone only. Business hours are Monday through Friday, 8am to 5pm EST. Please have the order number or category name and number ready before ordering.

The PDC is very excited with this new endeavor. They are constantly trying to upgrade the quality of the materials placed into the packets. For example, they insist on making professional photocopies of materials that cannot be ordered from a publisher. In addition, they are using newly-designed, sturdier folders to hold all the materials. We think you will be happy with the PDC's work.

Accidental Poisoning Almost Costs a Man His Life

Last summer in Missouri, John Atwill, a consultant, nearly lost his life by ignoring one of the fundamentals of pesticide safety. John unknowingly contaminated his soda can while loading a spray rig with carbamate insecticide. After a short time, he began to see double and became "fuzzy minded." He knew he needed help and started walking back to the barn. "By the time I got halfway back, I couldn't see but just straight ahead. I was having weird sensations, my respiration rate was up, and I was sweating all over. I was staggering and couldn't get to where I was going."

Fortunately, John was able to telephone a friend who transported him to a local hospital. His friend contacted the hospital enroute and told them what type of insecticide he

had ingested. The attending physician was notified and contacted a Poison Center. They recommended treatment with atropine, the antidote for carbamate poisoning along with other treatments for increased internal fluids. John recovered within several hours, but nearly died.

This accident obviously could have been avoided. No one should ever eat and drink while working around pesticides. Also, it is important to not work alone and have pesticide labels nearby in case of an emergency. John says from now on, when working with highly toxic materials, he will carry a label in his pocket.

Taken from: Delta Farm Press, (Jan. 14, 2000) via Alabama Pesticide Information newsletter.

Looking for Pesticide Information? Try NPTN

The National Pesticide Telecommunications Network (NPTN) operates out of Oregon State University as a cooperative project between the Environmental Protection Agency (EPA) and the university. NPTN's mission is to serve as a source of objective, science-based information on pesticides and related subjects, including recognition and management of pesticide poisonings, toxicology, and environmental chemistry, to the public and professionals in the industry. In its sixth year of operation, NPTN also provides referrals for laboratory analyses, investigations of pesticide incidents, emergency treatments, safety practices, health and environmental effects, and clean-up and disposal.

The National Pesticide Telecommunications Network 1999 report covers the period April 1, 1999 through March 31, 2000. This report is available at NPTN's web site at <http://nptn.orst.edu/reports.htm>. During that time, the NPTN answered 22,721 calls. Of those calls, 8.6 percent involved pesticide incidents, 48.2 percent were general information questions about pesticides, and 37.8 percent of the calls were about specific pesticides. The remaining

calls were not related to pesticides.

Of the 1,962 incident calls logged, 8.4 percent were assigned a certainty index of 1 (definite) or 2 (probable). The location of the exposure was known in 1,785 cases with 87.7 percent occurring in the home or yard. A total of 2,084 exposures were reported in the incidents. Of these exposures, 65.1 percent were human, 21.3 percent were animal, and 13.6 percent were other (e.g., buildings, environment).

The active ingredient that generated the most calls was chlorpyrifos, with 1,100. Nineteen percent or 224 of these calls were determined to be incident calls, with 6.3

percent judged to have been definitely or probably caused by chlorpyrifos.

NPTN is a good place to go for unbiased pesticide information for you and your customers. They operate seven days a week, excluding holidays, from 9:30 am to 7:30 pm (our time). NPTN can be reached by telephone, FAX, or e-mail (see center box). You can also visit their comprehensive web site at <http://ace.orst.edu/info/nptn/>. Information for this article was taken from *Pesticide & Toxic Chemical News*, June 1, 2000.

Contact NPTN by:

Telephone: 1-800-858-7378

Internet: <http://ace.orst.edu/info/nptn/>

E-mail: nptn@ace.orst.edu

FAX: 1-541-737-0761

CHEMSWEEP Program Approaches One Million Pounds

The CHEMSWEEP Program, administered by the PA Department of Agriculture (PDA), has provided pesticide users and applicators with a means to dispose of cancelled, suspended, or unwanted pesticide products. Since CHEMSWEEP began as a pilot project in six counties in 1991, over 920,000 lbs. of waste pesticides have been collected statewide and properly disposed of in Environmental Protection Agency approved facilities.

Each year, many pesticide products are phased out of operations, leaving growers and applicators with quantities of dangerous and toxic materials. In addition to these unregistered products, many commercial establishments, farmers, and homeowners have unwanted and/or unusable pesticides. Due to the nature of these hazardous materials, limited options are available for responsible management. With the high cost of disposal, many users cannot afford to hire professionals to handle these materials, often postponing such disposal decisions until a more cost effective means becomes available.

The waste pesticides may then become a safety hazard and environmental liability through long-term storage in barns, garages, offices, or homes. The environmental liability may become a significant health and safety concern. The liability may also manifest itself as a high hidden cost during the clean-up and removal of these pesticides during the transfer or sale of the property.

By participating in this program, a participant can legally dispose of waste pesticides at no cost. Approximately 90% of the waste pesticides collected are

burned in EPA approved incinerators. The remaining pesticides are either offered for recycling or are treated and placed in hazardous waste landfills permitted by EPA.

This year Adams, Bucks, Butler, Chester, Lawrence, Lehigh, Lycoming, Mercer, Mifflin, Monroe, Montour, Northumberland, Somerset, Venango, and Wayne counties have been selected for collections, which are scheduled for August 2000. The Department will also schedule household collection sites in several of these selected counties. The household collection program started in 1997 and within the past three years, over 30,000 pounds of household products were collected. Household collection drop-off sites will be operated by Department personnel concurrently with farm and business collections.

An independent contractor, hired by the Department of Agriculture, collects, handles and transports all waste pesticides out of the state, primarily for incineration at EPA approved facilities. The collection program is funded through the annual pesticide product registration fees, paid by the chemical manufacturers. No charge will be assessed to homeowners and private applicators participating in the program. Commercial pesticide businesses with quantities above PDA's guidelines may be required to share in the cost for disposal. The final generator of these waste pesticides will be the PDA contractor who assumes all liability at the time of collection.

For a copy of the Chemsweep application forms, please contact your Penn State County Extension Office or regional office of the Department of Agriculture.

Plastic Pesticide Container Recycling Program

The Plastic Pesticide Container Recycling (PPCR) Program sponsored by the Department of Agriculture has started the 2000 collection season on a very positive note. The program is already experiencing a substantial growth increase over last season. As of July 1, there have been 27,886 recyclable plastic pesticide containers collected and consolidated for future granulation. Only 38 percent of all PPCR collection sites have been visited thus far, and several locations will fill their storage unit three or four times throughout the growing season. The total number of containers recycled in 1999 was 62,045 and the estimate for the 2000 PPCR season is 100,000+ containers.

The program has a statewide network of 63 collection locations in 35 counties (see table below). The northwestern region of PA, which had not been previously represented, has five locations collecting plastic pesticide containers. All seven regions of the state now have PPCR collection sites, making the program available to more pesticide applicators than ever before. This program provides an alternate method of disposal other than the use

of landfills or incineration.

Continued participation in the recycling program is needed. Please bring your clean, triple-rinsed plastic pesticide containers to the nearest collection location during posted business hours. Your local county extension office has a complete list of PPCR partner collection sites for 2000. If the Plastic Pesticide Container Recycling Program is not currently available in your area, contact your local chemical supplier and encourage them to participate.

For more information or to request a list of collection locations, contact Don Gilbert at (717) 705-5858 or visit the web site at <http://www.pested.psu.edu/pdaprofr.html>. We congratulate the following businesses and chemical suppliers listed below on their responsible and cooperative attitude towards recycling. **Thank You!**

Written by: Don Gilbert, Recycling Coordinator, PA Department of Agriculture

Cooperating Businesses in the Plastic Pesticide Container Recycling Program.

Please bring pressure-rinsed or triple rinsed plastic pesticide containers during posted business hours.

City	Business	Phone #
Aspers	Mountain Orchard Coop	(717) 677-7155
Bangor	Reading Bone Agway	(610) 588-1095
Bellefonte	Agway Crop Center	(814) 359-2725
Belleville	Agway	(717) 935-2148
Belleville	Union Mill Chemgro	(717) 935-2185
Biglerville	Helena Chemical	(717) 677-4599
Blairsville	Agway, Inc.	(724) 459-7830
Brogue	Andgrow Fertilizer	(717) 927-6975
Cambridge Springs	Rynd's Custom Services	(814) 796-3081
Carlisle	Andgrow Fertilizer	(717) 249-4988
Coburn	Martin's Feed & Fertilizer	(814) 349-8787
Cochranville	Milford Fertilizer	(610) 869-8006
Columbia		
Crossroads	Judson's Inc.	(570) 297-2153
Conneautville	Farmer's Exchange	(814) 587-6177
Coplay	Reading Bone Agway	(610) 799-3115
Coraopolis	Allegheny Lawn & Golf Products	(412) 262-8091
Curryville	Agway Farm Supply	(814) 793-3664
East Berlin	Andgrow Fertilizer	(717) 259-9573
Easton	George Seiple & Son	(610) 285-7146
Eighty Four	Agway Crops Center	(724) 222-4303
Elizabethville	Reading Bone Agway	(717) 362-4591
Ephrata	Agway	(717) 733-6593
Erie	Lesco, Inc	(814) 455-7850
Gettysburg	Ag Com, Inc.	(717) 334-6224
Greencastle	Chester Horst	(717) 597-3994
Harrisburg	Lesco, Inc.	(717) 657-9034
Harrisburg	PA Dept. of Agriculture	(717) 705-5858
Ironsville	Tyrone Milling	(814) 684-3400
Jefferson	Codorus Fertilizer	(717) 229-2311
Jersey Shore	Eck's Agway	(570) 398-2770

City	Business	Phone #
Kinzers	Mr. Gideon King	N/A
Kreamer	Kreamer's Feed Store	(570) 374-8148
Lancaster	Lesco, Inc.	(717) 291-4434
Leesport	Reading Bone Agway	(610) 926-3717
Leola	Daniel's Farm Store	(717) 656-6982
Little Britain	Agri Supply	(717) 529-2196
Malvern	Fisher & Son	(610) 644-3300
Mechanicsburg	Lesco, Inc.	(717) 691-9570
Mercersburg	Agronomy, Inc.	(717) 328-3145
Mifflin	Agway	(717) 436-2154
Mill Hall	Webb's Super-Gro	(570) 726-4525
Millerstown	N.O. Bonsall & Son	(717) 589-3146
Montrose	Andre & Son	(570) 278-1131
Montrose	Palmatier Enterprises	(570) 278-3350
Moosic	Lesco, Inc.	(800) 650-1936
Myerstown	James Patches	(717) 949-3860
Myerstown	Reading Bone Agway	(717) 866-5205
New Holland	Martin's Ag Service	(717) 354-4996
Norristown	Lesco, Inc.	(610) 631-5333
Oxford	UAP Northeast	(717) 529-3117
Port Royal	Annlick Farm Supply, Inc.	(717) 527-4131
Richland	UAP Northeast	(717) 933-4343
Sandy Lake	Lakeview Fertilizer	(724) 376-3615
Shippensburg	J.M. Truck & Trailer	(814) 226-6066
Shippensburg	Cumberland Valley Coop	(717) 532-2197
Somerset	Walker's Farm Service	(814) 445-5177
Thompsontown	Agronomy Center	(717) 535-5151
Towanda	Agway Farm Supply	(570) 265-8141
Turbotville	Ag Resources, Inc.	(570) 649-5161
Warriors Mark	Helena Chemical	(814) 632-5177
Washingtonville	Crop Production Services	(570) 437-3121
Williamsburg	Agway Farm Supply Mill Hill	(814) 832-3458
Winfield	Agway Crop Center	(570) 524-5102

IPM Alternatives Available to Replace Chlorpyrifos (Dursban)

On June 8, 2000, the Environmental Protection Agency (EPA) announced that chlorpyrifos, commonly known as Dursban, will be removed from use in all over-the-counter home, lawn, and garden insecticide formulations. It will likewise be phased out of all products labeled for school and park use.

Dursban has been one of the most commonly used insecticides for over three decades and is an ingredient of sprays and powders for everything from ants, cockroaches and grubs, to mosquitoes, termites, and wasps. Another formulation of chlorpyrifos is used in many agricultural settings. Many of these agricultural uses will be significantly curtailed as a result of the EPA's decision.

After December 31, 2000, when the chemical officially goes off the market, homeowners will still be able to buy several other insecticides. But for people who are asking, "What next? Are there other ways to deal with pests?" Integrated Pest Management (IPM) offers the whole spectrum of control options, with an emphasis on reducing risks to humans and the environment.

Integrated Pest Management is an approach to pest control that combines a variety of methods to prevent pest damage. For years, IPM Programs have been working on effective, multi-tactic approaches that will continue to work even if any one tactic—for instance, a commonly-used pesticide like Dursban—is lost. In the home and

grounds arena, for instance, a wide variety of control tactics fit the bill. These include:

- ❖ Sanitation to remove necessary food, water, breeding sites, and "hiding places"
- ❖ Barriers to entry like screens and caulking foundation cracks
- ❖ Biological treatments including parasitic nematodes and "milky spore" disease for lawn grubs
- ❖ Baits
- ❖ Insect traps, such as "roach motels"
- ❖ Repellents
- ❖ Encouraging predators of insects like swallows and bats
- ❖ Nest removal of stinging bees and wasps (qualified professionals only)
- ❖ And, as a last resort, properly applied chemical pesticides

Every state has an Integrated Pest Management program that continually identifies pest control challenges, coordinates research to develop safe and effective pest control methods, and advises farmers, homeowners, groundskeepers, and others how to implement these methods. You can contact the Pennsylvania IPM Program at 501 ASI Building, University Park, PA 16802 or call (814) 865-2839 or check their web site at <http://paipm.cas.psu.edu/>. The National IPM Network is online at <http://www.ree.usda.gov/nipmn/>.

Future Weather Trends May Bring More Pests

Researchers from three top American universities have warned that future weather trends could cause a proliferation of plant pests and diseases.

Projected increases in temperature may reduce insect winterkill, quicken insect development, and shorten the time between generations, according to a new report. Also in the forecast are floods—which favor bacteria, fungi, and nematodes—and droughts—which leave plants vulnerable to invaders.

The report, *Climate Change and U.S. Agriculture: The Impacts of Warming and Extreme Weather Events on Productivity, Plant Diseases, and Pests*, examines the impact climate conditions have had on crop yield and production costs from 1950 to the present. The report is a collaborative effort of the Center for Climate Systems Research at Columbia University, the Center for Health and the Global Environment at Harvard Medical School, and the Department of Plant Pathology at Iowa State University.

Pests have been causing increasing damage since 1970 and are estimated to destroy about one-third of U.S. crops, the report finds. Pesticide use has also risen since that time, but has been offset by pest resistance.

The report tracks the 30-year expansion of several crop pests across the Corn Belt and Great Plains. It also highlights past crop epidemics and explains how weather conditions favored the outbreaks.

The researchers say agricultural trends, such as the expanding global trade of food and plants, are increasing the threat of weeds, insects, and disease. Intensified cropping, reduced crop rotations, and an increase in monocultures are also encouraging pest activity. In addition, the introduction of genetically modified plants is expected to change methods of pest control. Genes offering resistance to herbicides may be transferred to the very weeds growers wish to eliminate.

The report predicts intensified pesticide applications and new agricultural chemicals will be needed to combat the abundant pests. These will "carry long-term health, environmental, and economical risks."

Pest damage is difficult to predict as it results from "complex ecological dynamics between two or more organisms," according to the report. Dry conditions do not favor fungi, for example, but do not favor hardy plants either. Drought-stricken crops may therefore be more susceptible to fungal attacks than crops under normal conditions.

In addition, pest occurrences often coincide with extreme or anomalous weather conditions, such as early or late rains, which by themselves can affect yields. This report is available on the Internet at <http://www.med.harvard.edu/chge/>.

Taken from: *Pesticides & Toxic Chemical News*, May 25, 2000, pages 16-18.

Registered Chemical Alternatives for Chlorpyrifos

The Environmental Protection Agency (EPA) does not recommend specific pesticides or pesticide products but has registered (licensed) a number of alternatives for various uses of chlorpyrifos. See the table below for possible chemical alternatives (active ingredients) to chlorpyrifos. Not all alternatives listed in each category

below control all target pest(s) that chlorpyrifos is used to control. There may be additional registered chemicals which could be used as alternatives to chlorpyrifos.

Copied from: EPA's web site at:

<http://www.epa.gov/pesticides/op/chlorpyrifos/alternatives.htm>

Use Type:	Possible Chemical Alternatives Include:
Tomatoes	Pyriproxifen, buprofezin, imidacloprid, oil, soap, fenpropathrin, esfenvalerate, permethrin, endosulfan, Bt, methomyl, methamidophos, lamda-cyhalothrin, spinosad, tebufenozide, azadirachtin, and pheromone
Grapes	Imidacloprid, narrow range oils, carbaryl, methomyl, and azinphos methyl
Apples	Methidathion, phosmet, endosulfan, Bt spray, imidacloprid, tebufenozide, dimethoate, esfenvalerate, permethrin, spinosad
Pet Products--fleas and ticks (include animal and home treatments)	Carbaryl, permethrin, phosmet, propoxur, pyrethrins, methoprene, pyriproxifen, boric acid, and tetrachlorvinphos. Veterinary drug products (lufenuron, fipronil, imidacloprid) are also marketed for flea control.
Home Use products to control pests such as ants, crickets, and cockroaches	Bendiocarb, permethrin, propoxur, pyrethrins, fenoxycarb, diatomaceous earth, carbaryl, fipronil, hydromethylnon, boric acid, cyfluthrin, sulfluramid, hydroprene, abamectin, and fenvalerate.
Home Lawn and Ornamental products	Bendiocarb, carbaryl, propoxur, Beauvaria bassiana, trichlorfon, milky spore, nematodes, imidacloprid, halofenozide, Bt, spinosad, hydramethylnon, abamectin, pyrethrins, and fluvalinate.
Mosquito Control products	Larvacides include Bacillus thuringensis Israeliensis, methoprene, temephos, diflubenzuron, and oils; Adulticides include fenthion, malathion, naled, permethrin, sumerthrin, pyrethrins, and resmethrin.
Termiticide products	Cypermethrin, permethrin, imidacloprid, fipronil, bifenthrin, esfenvalerate, deltamethrin, cyfluthrin, boric acid, silica gel, and propoxur; Bait systems include sulfluramid, hexaflumeron, diflubenzuron, and hydramethylnon.
Commercial, Industrial, and Institutional use products	Bendiocarb, boric acid, cyfluthrin, cypermethrin, propetamphos, propoxur, pyrethrins, and resmethrin.

**Visit the PA Department of Agriculture's tent
and the Pesticide Education Program's booth at
Ag Progress Days on August 15, 16, and 17
at Rock Springs, near State College, PA**

**PDA Division of Health and Safety Telephone Extensions
(717) 772-5231**

Extension 0 = Operator

Extension 1 = Employee Directory

Extension 2 = Business/Applicator Licensing

Extension 3 = Enforcement/Pesticide Complaints

Extension 4 = Pesticide Product Registration

Extension 9 = Repeat Options

(Chlorpyrifos con't from page 1)

Agricultural Uses

- ❖ Use on apples will be restricted to pre-bloom (when no fruit is on the tree) and the tolerance will be lowered.
- ❖ The tomato use will be canceled and the tolerance will be revoked.
- ❖ The tolerance on grapes will be lowered (which will involve a rate reduction).

Short term use of chlorpyrifos in compliance with labeled directions does not pose an imminent risk. This agreement is in response to new safety standards that provide a wider margin of protection for children. As safety standards increase, use patterns must be changed to meet them. This agreement between Dow Agrosiences and the EPA will allow the product to be used in a way that complies with these new standards.

The following four tables indicate how the uses of chlorpyrifos will be affected. The tables on this page are Home Uses and Non-Residential Uses. The tables on page 9 include Food Uses and Non-Agricultural Uses that Will Remain. For IPM alternatives, please read the article, "IPM Alternatives Available to Replace Chlorpyrifos (Dursban)" on top of page 6. For chemical alternatives, please read the article, "Registered Chemical Alternatives for Chlorpyrifos" on page 7.

For more information, visit EPA's web site on chlorpyrifos at <http://www.epa.gov/pesticides/announcement6800.htm>.

Written by: Bill Hoffman, Pesticide Impact Assessment Program, Pesticide Education Program at Penn State University.

Home Uses Affected by Chlorpyrifos Agreement

Site	Mitigation Measures	Effective Dates
Home lawn and most other outdoor uses	Classify new end-use products for restricted use or package in large containers (except baits in child resistant packaging) Use will be canceled	As of 12-1-00 Stop formulation 12-1-00 Formulators stop sale 2-1-01 Retailers stop sale 12-31-01
Crack and crevice and most other indoor uses	Classify new end-use products for restricted use or package in large containers Use will be canceled	As of 12-1-00 Stop formulation 12-1-00 Formulators stop sale 2-1-01 Retailers stop sale 12-31-01
Termiticides	Classify new products for restricted use or package in large containers Limit use to 0.5% solution	As of 12-1-00 In label directions as of 12-1-00
Full barrier (whole house) post-construction use	Use will be canceled	Stop formulation 12-1-00 Formulators stop sale 2-1-01 Retailers stop sale 12-31-01
Spot and local post-construction use	Use will be canceled	Stop formulation 12-1-00 unless label has stop use date of 12-31-02
Pre-construction use	Use will be canceled	Stop production 12-31-04 Stop use 12-31-05

Non-Residential Uses Affected by Chlorpyrifos Agreement

Site	Mitigation Measures	Effective Dates
Indoor areas where children could be exposed (such as schools)	Uses will be canceled	Stop formulation 12-1-00 Formulators stop sale 2-1-01 Retailers stop sale 12-31-01
Outdoor areas where children could be exposed (such as parks)	Uses will be canceled	Stop formulation 12-1-00 Formulators stop sale 2-1-01 Retailers stop sale 12-31-01

Food Uses Affected by Chlorpyrifos Agreement

Crop	Mitigation Measures	Effective Dates
Apples	Production of chlorpyrifos products labeled for post-bloom application is prohibited (only production for pre-bloom, dormant application is allowed) Post-bloom use is prohibited Tolerances will be lowered	August – September 2000 Stop use (use prohibited) as of 12-31-00
Tomatoes	Production of products for tomato use is prohibited Use will be canceled Tolerances will be revoked	August – September 2000 Stop use as of 12-31-00
Grapes	Tolerance will be lowered	
All Agricultural Uses	Classify new end-use products for restricted use or package in large containers New end-use products must bear revised Restricted Entry Intervals (REIs)	As of 12-1-00 As of 12-1-00

Non-Agricultural Uses that Will Remain

Site	Mitigation Measures	Effective Dates
Residential use of containerized baits	Already in child resistant packaging	(Use allowed to continue)
Indoor areas where children will not be exposed, including only ship holds, railroad boxcars, industrial plants, manufacturing plants, or food processing plants		New end-use product labels must reflect only these uses as of 12-1-00
Outdoor areas where children will not be exposed, including only: <ul style="list-style-type: none"> Golf courses Road medians Industrial plant sites Non-structural wood treatments including fenceposts, utility poles, railroad ties, landscape timbers, logs, pallets, wooden containers, poles, posts, and processed wood products. Public health uses: <ul style="list-style-type: none"> Fire ant mounds (drench and granular treatment) Mosquito control 	<ul style="list-style-type: none"> Reduce application rate from 4 lbs/acre to 1 lb/acre Reduce maximum application rate to 1 lb ai/acre Reduce maximum application rate to 1 lb ai/acre (Continue at current rate) For professional use only For professional use only 	New end-use product labels must reflect only these uses as of 12-1-00



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