Volume 22, Number 3 Fall 2002

Pesticides and You

News from Beyond Pesticides / National Coalition Against the Misuse of Pesticides (NCAMP)

Are Schools Making the Grade?

School districts nationwide adopt safer pest management policies

- What Does the USDA Organic Seal Mean For You •
- The Emergency Pesticide Use Loophole •

Lessons of the West Nile Virus Response

Crisis Management Versus Prevention

Sometimes you can see the problem coming. Right after the Spring issue of *Pesticides and You* on mosquito management and West Nile virus (WNv), just as we warned the nation that the virus would confront communities across the country, we saw that infected birds had made their way to the South and the west coast. And the spraying began in earnest in numerous areas as many local and state officials responded with toxic chemicals. We received reports of chlorpyrifos (Dursban) spraying over a city, the same chemical that EPA negotiated off the consumer market, but will allow indefinitely for numerous uses, such as public health mosquito spray programs (and golf course use!). [Note: It should be said and re-said that this EPA decision does not mean the legal uses are safe!] Other communities took a more cautious approach and questioned the efficacy of spraying, and the hazards associated with spraying relative to the health risks of WNv.

Asking the Right Questions

The WNv situation teaches us to ask a series of questions that should be applied to all community and household pest management decisions. These questions, contained in our *Public Health Mosquito Management Strategy*, have broad application, whether we are concerned about pesticide use in our schools, parks, offices, golf courses, waterways, forests, along rights-of-way, or anywhere else.

As advocates for sound pest management that does not unnecessarily introduce harmful toxic chemicals into the environment, we start by asking, "What is the pest problem?" "Is the pest really a pest, or something we need to worry about?" What threat does the pest pose to human health and the environment? If it is determined that intervention is necessary, what preventive steps can be taken that reduce the threat of the pest, while not introducing another hazard or unknown? What do we need to do to prevent the pest problem from occurring without causing secondary or unintended effects? And so, we embark on community programs that recognize the value of prevention and ongoing efforts aimed at eliminating the conditions that support pest populations.

What do we need to do to prevent the pest problem from occurring without causing secondary or unintended effects?

Crisis Management Through "Spray and Pray"

Chemical-intensive approaches to pest management are best characterized by a "Spray and Pray" orientation. This suggests that spraying pesticides will not eliminate the pest problem in the long-term, but may exacerbate it, and will lead to insect resistance and secondary pest problems. Above all, this approach is crisis pest management, and it always introduces the element of human health and environmental hazard, or unknown hazards associated with toxic chemical use. There is no need in this scenario to identify the factors and conditions that may help avoid a pest problem. This, then, has become a cultural response among pest control officials and managers. See a bug or a weed, "Spray it." That is changing in some circles. Now, we are increasingly seeing the response, "Trap it."

Planning Ahead for Prevention

WNv-related spraying teaches us that we must plan ahead with local and state officials, adopt policies, and allocate the resources necessary to put a prevention program in place. It is an approach that clearly asks for a cultural shift away from crisis management in the interest of long-term health, environmental protection, and economical management in the long run.

In This Issue

This issue is intended to provide tools for moving the prevention agenda. State and local school pest management policies, the focus of this issue, are leading the way. With over 25 percent of school districts nationwide required by state or local law to practice integrated pest management (IPM) and 19 percent restricting certain pesticide uses, we are well on our way. There is tremendous potential in our growing movement that is built on a solid foundation of successful efforts like these. This movement nurtured a burgeoning organic industry, helped to pass the *Organic Foods Production Act* and recently saw the adoption of the final national organic standards on October 21, 2002. While we must remain vigilant in ensuring that so-called "acceptable materials" remain true to the organic food production law, the availability of organic food will continue to grow.

We will continue to track the continuing problems with pesticides, as we do in this issue. Hazardous wood preservative use will not end without continued efforts like these. The illegal use of pesticides, like granular carbofuran in Louisiana on rice will become more commonplace without an involved and active public. And, our children's schools will continue to be toxic learning centers without an active public.

—*Jay Feldman* is executive director of Beyond Pesticides.

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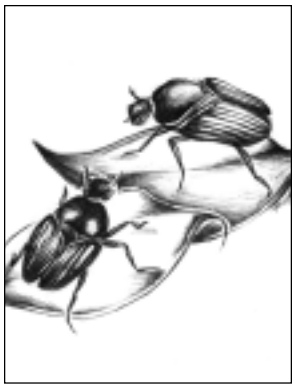

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Getting Condos to Cut Back on Poisons

Dear Beyond Pesticides,
My condominium association continues to spray pesticides and fertilizers in our front and back yards. We have a 10-month-old baby and have asked them not to spray or use any of these products. She has recently tested positive with several allergies and I want to keep her exposure to these items at a minimum. The association said it is safe and that chemicals are necessary. They recently spread a pellet fertilizer that our dog tracked into the house. The baby almost put some into her mouth before I knew what it was. Even before we had the baby, I never used any of these products in my garden or home. I really think we should have the right to decide whether to have these products used, even though we live in a condominium. It is still our health at risk. Please let me know if there is something we can do.

Beckie Kern
Indianapolis, IN

Dear Ms. Kern:
You certainly are right to be concerned about pesticide use, no matter if it is deemed necessary and safe by your condominium association. Infants are especially susceptible to health risks posed by pesticides. As you found out, these chemicals are difficult to keep inaccessible to children. Even if they are used outside, keeping children inside to protect them may be futile. A study published in November 2001 found herbicides applied outside were tracked indoors, contaminating the air and surfaces inside residences and exposing children at levels ten times higher than preapplication levels. (Nishioka, M., et al., "Distribution of 2,4-D in Air and on Surfaces inside Residences after Lawn Applications: Comparing Exposure Estimates from Various Media for Young Children," Environmental Health Perspectives *109(11) (2001)).*

There are several steps you can take to try to remedy your situation. First, find out exactly what chemicals are being used. Go to the condominium association, or the lawn care company they use and ask for Material Safety Data Sheets (MSDS) for all of the products used on the condominium property. Once you know this, you can find information about toxicity, and health and environmental effects.

You should also read up on integrated pest management (IPM) techniques for lawn care, which emphasizes non-toxic and least-toxic methods. Soil aeration, correct mowing, organic fertilizers, and use of vinegar and corn gluten are just some of the available alternatives to toxic chemicals. Beyond Pesticides offers information packets regarding least-toxic weed control and lawn care ($4 ppd).

Talk to your neighbors about your concerns. Explain to them the health effects of the chemicals, especially to children, and that alternatives do exist that would keep both residents and lawns healthy. Post signs and hold a short informational meeting for the residents to express their concerns and gather support. You and your neighbors can then collaborate, and approach those responsible for implementing the pesticide applications. Petitions and information about health threats and viable alternatives are valuable tools for changing the condo association's current practices.

Electronic Devices as Pest Control

Dear Beyond Pesticides,
I was wondering about electronic pest control. Does this involve the idea of repelling pests instead of killing them? Furthermore, do any of these types of products work? Not only would I like to avoid poisonous pesticides, but I would really prefer not to kill things, even things most people consider "pests." Please let me know any information you have regarding electronic pest control.

Linda Kroger
Coral Springs, FL
Dear Ms. Kroger:
Electronic pest control is a controversial topic. While there are those who claim it has worked for them in controlling pests, many methods of electronic pest control have never been scientifically proven as effective. Since these tools are not regulated under the Federal Insecticide, Fungicide and Rodenticide Act *(FIFRA), the U.S. Environmental Protection Agency (EPA) does not require the testing that it does for synthetic pesticides. Adequate testing for adverse health effects as well as performance evaluations of these devices is lacking.*

Most electric pest control devices work by producing electrical pulsating frequencies that distress pests so they will leave the area. Critics of these methods say the rodent or other pest will simply get out of the path of the stressful noise, but stay in the general vicinity. However a number of establishments including hospitals, housing projects, childcare facilities, warehouses, food service enterprises and grocery stores have given positive testimonials to the devices. William B. Jackson, PhD, of Bowling Green State University conducted several studies involving the ultrasound device Pest Patrol. *He researched its effectiveness on site in a Florida Sysco Food Products warehouse and found that signs of rodents, as well as number of rodents captured, decreased to near zero. In a lab study involving mice, he found a "statistically significant decrease in mouse activity in two of the [*Pest Patrol*] chambers."*

If you should decide to take this route to control pests in your home, supplement it with preventive measures. Create an environment in your home that does not welcome pests. Locate, caulk and seal openings, cracks and crevices in your walls, especially near pipelines, where rodents tend to enter. Place weather stripping under doorways and thresholds. Keep all garbage and food in your home tightly sealed. Grains and cereals should be tightly contained in metal, glass or plastic.

Other control options do exist that do not involve killing the pest. If you are targeting rodents, consider using "live" traps. This type of trap will not kill the animal, but will capture it and allow you to release it away from your home. Make sure you release it far enough away

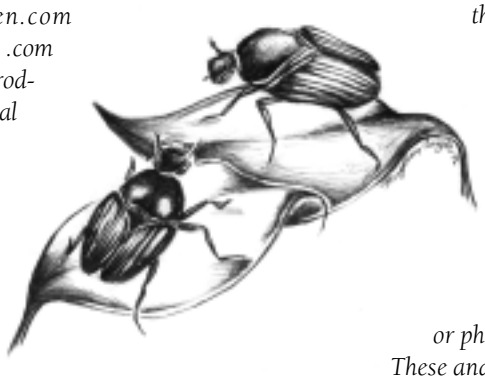
to prevent its return. You can find this type of trap at your local hardware store. Again, if you decide to use this method, you must also modify the habitat in your home to prevent any further infestation. Contact Beyond Pesticides for more information regarding any specific pest for which you have a concern.

Spider Mites, Japanese Beetles and Other Lawn Pests

Dear Beyond Pesticides,
I am looking for information about alternatives to pesticides in order to educate some community members. I will pass along any information you send. I already plan to recommend the Beyond Pesticides website as a resource to the residents of Centreville, a suburb area south of Dayton proper, built in the 1970's. The Dayton, Ohio/Miami Valley seems so uninformed on pesticide dangers and alternatives. Residents put much care and money into their lawns and trees, seemingly unaware of the dire dangers of pesticides. One neighbor, whose vegetation and trees are very beautiful and "cared for," has routine spraying of his Blue Spruce. Sometimes the lawn care companies tell me the spraying is "preventive." To try to curb excessive use of poisons currently, I am interested in passing along information about how to control spider mites and Japanese beetles. I have much greater peace of mind knowing you and your organization are there as a resource on this deadly problem that is so out of control in America.

Beverly Johnson,
Dayton-Oakwood, OH

Dear Ms. Johnson:
Thank you for your efforts to work in the community for pesticide reform! Public knowledge of viable alternatives to toxic chemicals is a critical step. In the case of spider mites, pesticide use can actually be detrimental. This type of mite quickly develops resistance to chemicals. Fortunately, alternatives do exist. A non-toxic biological control for spider mites is the release of one of their predators, a beneficial mite called phytoseilus persimilis. *They reproduce faster than the spider mite and will wipe out the population. By using a living biological control, you are only affecting the insects or plants it controls because they are so host-specific. This sidesteps the adverse human health and environmental effects associated with pesticides. You can purchase most biological controls like predatory mites through mail catalogues or the internet. Check out www.extremelygreen.com orwww.gardeninsects .com for biological control products. Use of insecticidal soap offers a least-toxic control against spider mites. Make sure to test out the soap on a few leaves of the plant first to be sure it is safe to use on a particular plant species. Safer brand makes a biodegradable soap that can be sprayed on a variety of plants (see www.victorpest.com). If you use an insecticidal soap, be wary that it may also kill beneficial insects. Outdoor use should be limited to spot treatments. Carefully read the label of the fatty-acid soap pesticide product to identify the active ingredient and make sure that they do not also contain toxic pesticides or synergists.*



Japanese beetles may either be controlled at the larval or adult stage. Larvae appear as grubs in the lawn. Patches of wilting or dead grass seen in the late spring and summer signal their presence. A well-maintained lawn could withstand 15 grubs per square foot during spring, and remain healthy and lush. This number decreases to six to ten by late August. Compact soil and excessive thatch create a welcome environment for Japanese beetle larvae. Soil aeration helps prevent infestation. You can purchase a soil aerator, either as a power or hand tool. In case of a severe infestation, non-toxic controls include milky spore as well as several varieties of beneficial nematodes. Neem oil provides a least-toxic control. Check your local home and garden store for these products.

Adult Japanese beetles feed on flowers and leaves and are most active between 9 a.m. and 3 p.m. on plants in direct sunlight. If your infestation is light, handpicking the beetles from the plants is effective. You can alternatively place a drop cloth underneath plants and lightly shake the beetles off. Do this around 7 in the morning when they are dormant. Drop the insects in soapy water to kill them. Additionally, there are special vacuums that are designed to capture insects. These should also be used in early morning for increased effectiveness. Traps do exist for these beetles, but are not recommended unless a very large number are used. If only a few are put in a lawn or garden, this can actually attract more beetles due to the food or pheromone bait.

These and other lawn pests can be avoided with a naturally healthy lawn. Techniques such as proper and frequent mowing, soil aeration and proper watering will help to prevent other insect pests, weeds and disease. There are many options available for non and least-toxic management of lawn pests. Contact Beyond Pesticides concerning a particular problem or for general information about achieving a healthy lawn.

Write Us!

Whether you love us, disagree with us or just want to speak your mind, we want to hear from you. All mail must have a day time phone and verifiable address. Space is limited so some mail may not be printed. Mail that is printed will be edited for length and clarity. Please address your mail to:

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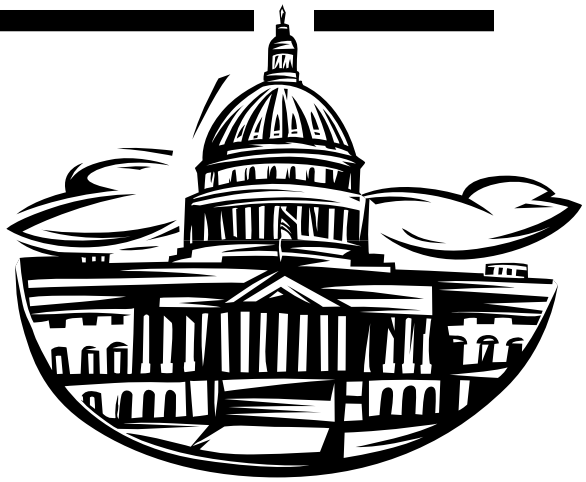


EPA Takes Enforcement Actions Against Biotech Companies

On August 5, 2002, EPA for the first time took enforcement actions against two biotechnology companies, Dow AgroSciences and DuPont, whose plantings of experimental genetically engineered crops were found by EPA inspectors to violate federal law. Although the $5,500 fines are a mere slap on the wrist, environmentalists found it encouraging to see EPA enforcing the law. In one case, Mycogen Seeds, a unit of Dow AgroSciences, failed to isolate its experimental insect-resistant corn with a buffer zone of conventional corn and failed to plant trees to act as windbreaks. In the second case, Pioneer Hi-Bred International, a DuPont subsidiary, planted its experimental corn crop at an unapproved location too close to other crops. Both companies' violations were in Hawaii and uncovered by EPA Region 9 inspectors.

The provisions violated by the two companies are designed to protect neighboring corn crops from cross-pollinating with the experimental biotech crops. The two corn crops at issue are engineered to be resistant to corn rootworm by using genetic material from *bacillus thuringiensis* (Bt), a soil bacterium with pesticidal properties. Such bioengineering of food is controversial because the use of genetically altered Bt crops raises serious safety concerns for agriculture. Plants can crossbreed and share genes, spreading potentially dangerous attributes far beyond the original experiment and potentially into the general food supply. In addition, EPA has not considered the widespread allergenic effects of Bt plant pesticides. This area needs further study and raises some of the most serious implications for a technology that has not been fully evaluated prior to its widespread introduction into the marketplace.

EPA Warns of Possible Pesticide Use by Terrorists

Pesticides cause harm when used according to label instructions. When applied improperly, the results are even worse. But if pesticides were used as chemical weapons, the damage could be horrific. On September 12, 2002, U.S. Attorney General John Ashcroft announced that the threat of a terrorist attack had been elevated to "high." Following the announcement, EPA released a statement warning that individuals who work with pesticides should be especially vigilant regarding physical security of the chemicals. Toward that end, EPA recommends that workers in pesticide related industries review EPA's Pesticide Security Alert, entitled *Pesticide Alert: Pesticide Security and Your Business*, available on the EPA website. The alert highlights some general security areas that companies may want to review to ensure that appropriate measures are being implemented. In related news, on September 10, 2002, the *Washington Post* graded various sectors of government and industry on their response to the September 11th terrorist attacks. They gave the chemical industry a grade of "D." The same day *Newsweek* magazine gave them an "F." EPA, the U.S. Army, Brookings Institute and others have all warned of the frightening ease with which U.S. chemical plants could be turned into weapons of mass destruction and threaten millions of Americans. *For more information contact Beyond Pesticides. If you have questions regarding EPA's Pesticide Security Alert, please contact Dennis Deziel of EPA's Office of Prevention, Pesticides, and Toxic Substances at (202) 564-0331. A copy of the recent alert is available at http://www.epa.gov/pesticides/citizens/pest_secu_alert.htm.*

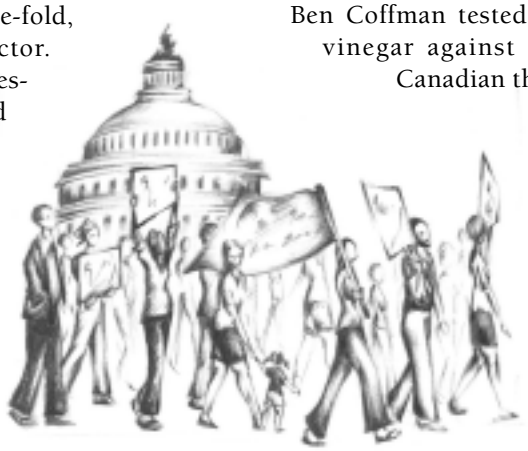
EPA Allows Use of Cancelled Pesticide on 2,500 Acres, Broader Use Denied After Public Comment

Cancelled in 1991 for its deadly effect on birds, granular carbofuran was originally approved for use under a *Federal Insecticide Fungicide and Rodenticide Act* (FIFRA) section 18 emergency exemption for a 2,500-acre application on Louisiana rice on June 19, 2002, then denied for broader use on July 24. FIFRA section 18 allows EPA to allow pesticides not registered for a specific purpose to be used under "emergency circumstances," such as a risk to human health or in cases of possible "significant economic loss." Under the statute, a pesticide cannot be given a specific use exemption unless there is "movement toward registration of the proposed use by the interested party." This means that previously banned pesticides cannot be given this

exemption, and environmentalists believe that the carbofuran exemption granted by EPA was illegal. The original request, made by the state of Louisiana, asked for 100,000 acres worth of granular carbofuran. This exemption was denied after Beyond Pesticides and a coalition of environmental groups led by the Audubon Society protested and sent comments to EPA voicing strong opposition to the state's request. Over 6,000 comments were sent to EPA on the issue. Granular carbofuran is a toxicity class I pesticide, the highest acute risk assigned to a chemical by EPA. Granular carbofuran has had a tremendous impact on birds, due to its resemblance to seed. A single granule is lethal, and EPA estimates that prior to cancellation of the granular formulation, up to two million birds were killed each year by carbofuran. Scientists at the U.S. Fish and Wildlife Service say that "there are no known conditions under which carbofuran can be used without killing migratory birds. Many of these die-off incidents followed applications of carbofuran that were made with extraordinary care." *See "The Emergency Pesticide Use Loophole" on page 21 of this issue.*

EPA's Review of 28 Organophosphate Pesticides Called Into Question

Under federal law, EPA is required to evaluate the cumulative effects of pesticides with a common mechanism of exposure, such as organophosphate insecticides, all of which inhibit the body's production of the enzyme cholinesterase in the same way. When EPA completed the *Revised Organophate (OP) Cumulative Risk Assessment*, environmentalists saw this as a positive step towards this goal. Unfortunately, the report is sloppy, excluding several pesticide uses and specific vulnerable populations, like farm children. The risk assessment also lowered the 10-fold *Food Quality Protection Act* (FQPA) safety standard to 3X or below, without, in the opinion of environmentalists, adequate justification. This sentiment was also shared by the Scientific Advisory Panel (SAP), an independent panel of scientists created by Congress under the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA), which questioned the validity of portions of the *Revised OP Cumulative Risk Assessment*. The EPA review concluded that 28 of the 30 organophosphates reviewed could have a three-fold, or less, safety factor. Under FQPA, all pesticides are assigned a 10-fold safety factor until sufficient evidence demonstrates that it can be lowered. SAP concluded that the 3-fold safety factor assigned to pesticides in the *Revised OP Cumulative Risk Assessment* are not protective of infants and children and that there was not enough data to lower the baseline 10-fold margin of safety assigned by FQPA. Of the 30 pesticides included in the OP risk assessment, studies on the effects each had on the developing nervous system of animals was only included for six chemicals. *For more information on OPs or for a copy of Beyond Pesticides' comments to EPA on the Revised OP Cumulative Risk Assessment, contact Beyond Pesticides.*



USDA Tests Vinegar as an Alternative to Conventional Herbicides

For years organic gardeners have used a variety of household products, from black pepper to kitchen soap, as non-chemical substitutes for toxic pesticides. Although generally ignored by the federal government, recently the U.S. Department of Agriculture (USDA) has taken notice. The Agricultural Research Service (ARS), the research division of the USDA, conducted a study showing the success of vinegar used as an herbicide. This non-toxic alternative has been used to combat weeds for years, but it has never been scientifically tested. In the first study of its kind, ARS scientists Jay Radhakrishnan, John R. Teasdale and Ben Coffman tested the efficacy of vinegar against such weeds as Canadian thistle, giant foxtail, velvetleaf, smooth pigweed and common lamb's quarters. The ARS uniformly coated leaves with varying potencies of vinegar solutions, using only vinegar made from fruits or grains, to conform to organic farming standards, both in the greenhouse and in the field. ARS finds that a five to ten percent solution could kill younger weeds in the first two weeks of life. An 85 to 100 percent solution kills adult weeds. A 20 percent concentration used in a cornfield killed 80 to 100 percent of all weeds. For comparison, the vinegar in your kitchen cabinet is most likely a five percent solution. Canada thistle, one of the most tenacious weeds in the world, proves the most susceptible. A five percent concentration has a 100 percent kill rate of the perennial's top growth. The 20 percent concentration can do this in about 2 hours. The cost of spraying an entire field with a 20% solution is $65 per acre. Spot spraying local weed infestations in the cornfield may only be $20 to $30. *For information regarding least-toxic weed management, please contact Beyond Pesticides.*

Ohio Activists Take Legal Action to Stop Mosquito Spraying

After several seasons of keeping mosquito spray trucks off of their streets, Cuyahoga County, Ohio activists suffered a defeat this September, when the county board of health made the decision to apply pesticides for the first time since West Nile virus hit the U.S. While disappointed with the county's decision to spray, the activists from the suburbs of Cleveland, known as the Ohio Coalition Against the Misuse of Pesticides (OCAMP) struck back by immediately filing a lawsuit against the Cuyahoga County Board of Health and the City of Cleveland on September 5, 2002 in the County Court of Common Pleas. Citing adverse health effects and lack of efficacy, the lawsuit requests injunctive relief to halt the broadcast spraying of pesticides for mosquitoes. The county is currently using synthetic pyrethroids, which are neurotoxic and some have been linked to endocrine disruption, breast cancer and anaphylactic (allergic) reactions. Other symptoms of acute toxicity due to inhalation include sneezing, nasal stuffiness, headache, nausea, incoordination, tremors, convulsions, facial flushing and swelling, and burning and itching sensations. The hearing date for a permanent injunction is scheduled for March 18, 2003. *For more information, contact Barry Zucker, director of OCAMP at 440-442-1818.*

Study Shows Farmers Poisoned by Pesticides Can Cause Depression

Pesticides can be depressing, literally. A recent study published in the August 2002 *Annals of Epidemiology* (Vol. 12, No. 6), shows that farmers exposed to pesticides have nearly a six-fold increased risk of suffering from depressive symptoms. "Pesticide Poisoning and Depressive Symptoms Among Farm Residents" looks at individuals' exposure to agriculture use of organophosphate pesticides. Between 1992 and 1997, 761 farmers and their spouses were part of the study conducted throughout eight counties in northeastern Colorado. After accounting for other known depression risk factors such as age, marital status, education level and alcohol use, farmers who reported organophosphate poisoning were 5.8 times more likely to score high on tests measuring level of depression than farmers who did not report having been poisoned. The study authors, Lorann Stallones and Cheryl Beseler of Colorado State University in Fort Collins, wrote that they looked at the association between pesticides and depression because higher rates of depression have been reported among farmers in some states. *A copy of the study is available online at http://www.cdc.gov/nasd/docs/d001001-d001100/d001084/d001084.html, or call beyond Pesticides for a hardcopy.*

NY Attorney General Finds Widespread Pesticide Use in Low-Income Urban Housing, Schools and Parks

A report released August 20, 2002 by New York Attorney General Eliot Spitzer reveals widespread use of pesticides in public housing developments, schools and parks, despite the availability of less toxic methods of effective pest control. Unlike other studies, *Pest Control in Urban Housing, Parks and Schools: Children at Risk*, examines the cumulative impacts of pesticides on urban children. The report identifies a clear need for improved pest management practices that do not heavily rely on using toxic pesticides. "Urban children spend about 90% of their time either in their homes, at school or in public parks," Mr. Spitzer said. "These places are often treated with pesticides that could threaten children's health. It is entirely possible to control pest problems without resorting to the use of toxic pesti-

cides. With children's health at stake, managers of these facilities and residents should make every effort to eliminate pest problems without using toxic pesticides." The Attorney General's office surveyed the pest management policies and practices for the year 2000 of various public housing developments and nearby schools and parks in Albany, Buffalo, New York City, Syracuse and Yonkers. The report finds that 80% of housing developments surveyed apply pesticides inside apartments and in common areas on a regular basis, rather than limiting application to identified pest problems. Statewide, 69% of responding residents apply pesticides in their own homes, and one-third do so at least once a week. Many of the pesticides used are highly toxic and some are illegal in New York. 71% of responding schools report using pesticides, and schools in New York City and Yonkers report using restricted use pesticides (which must be applied by, or under the supervision of, a certified applicator due to their high toxicity or due to their potential to persist and accumulate in the environment). Three parks, one in New York City; and two in Yonkers, report using herbicides for aesthetic, as opposed to public health, purposes. *The report is available on the Attorney General's web site (www.oag.state.ny.us). For more information, call 518-473-5525.*

Natural Compound in Tomatoes Repels Pests Better Than DEET

As if seizures, confusion, slurred speech, rashes, swelling, itching and eye irritation weren't enough reasons not to use DEET-based insect repellents, scientists at North Carolina State University have found a natural compound that repels insects better than the toxic, yet widely used bug spray. Entomology professors Michael Roe and William Neal Reynolds, found that a natural compound found in tomatoes, named "IBI-246," is so effective at repelling insects that the university patented and licensed the right to produce it as an insect repellent. Dr. Roe said he discovered the repellent capacity of IBI-246 by accident. While listening to a scientific presentation about protein mimics as a diet pill for the control of mosquito larvae, he realized that the compounds being discussed were similar to a compound found in wild tomatoes that he and another NC State

entomologist, George Kennedy, had studied a number of years earlier. Drs. Roe and Kennedy had studied the compound, which is part of the tomato's natural defenses against insects, to see if it might be used to control worms that eat tomatoes. Dr. Roe revisited the compound and tested it as a mosquito repellent. He found that it not only repelled mosquitoes, but ticks, fleas, cockroaches, ants and biting flies, as well as agricultural insects such as aphids and thrips. The cost of producing IBI-246 is expected to be competitive to the production cost of DEET. While it is impossible to tell how long the approval process will take, the researchers are hopeful that IBI-246 will win EPA approval by the end of the year. Other natural insect repellents include citronella, soybean, eucalyptus, lemongrass and catnip oils. *For more information on IBI-246, contact Dr. Michael Roe, 919-515-4325 or michael_roe@ncsu.edu. For more information about mosquitoes and least-toxic insect repellents, please contact Beyond Pesticides.*

New Study Finds Agricultural Pesticides Play an Important Role in Frog Deformities

Penn State University researcher Joseph Kiesecker found that wild tadpoles exposed to low-level agricultural chemicals along with the deformity-causing parasite trematode are five times more likely to develop leg deformities than frogs only exposed to the trematode. The Penn State researchers believe the presence of the pesticides weakens the frogs' immune systems thereby making them more susceptible to infection by the parasites. In the lab, Dr. Kiesecker found that pesticide exposed tadpoles have higher rates of parasitic infection and a matching reduction in white blood cell production, a commonly used indicator of a weakened immune system. All of the pesticide concentrations investigated in the experiment are below EPA-recommended levels for safe drinking water. "If it's true that commonly used pesticides compromise the immune system of a vertebrate organism, which is what the findings suggest, then we're looking at a much bigger problem then deformed frogs," said David Gardiner of the University of California at Irvine. Although trematode does not infect humans, many parasites do. A notable example is Schistosoma, which causes 200 million cases of disease including over 20,000 deaths each year. *More information on the pesticide link to frog deformities can be found at: http://www.science.psu.edu/alert/Kiesecker7-2002.htm, or contact Beyond Pesticides for further information.*

Threats from U.S. Industry Will Not Change Quebec Pesticide Ban, Says Minister of Environment

Showing he has a backbone, Quebec Environmental Minister Andre Boisclair refused to back down from a proposed ban of 28 pesticides on public and private land in the Canadian province, even after the giant U.S. pesticide industry threatened him with a lawsuit. Major manufacturers of the weed-killer 2,4-D, which is included in the list of Quebec's banned pesticides, plan to sue the Canadian province, citing Chapter 11 of the *North American Free Trade Agreement* (NAFTA), which allows private companies to sue governments. Donald Page, executive director of the Industry Task Force II on 2,4-D, said Quebec must prove 2,4-D is carcinogenic before it can ban the herbicide. Although studies show that 2,4-D can cause reproductive effects, nervous system damage, damage to the kidneys and liver, birth defects, endocrine disruption and possibly cancer, Mr. Page is currently heading a $30 million research program to show that 2,4-D is safe. The Quebec government has no plans to compensate commercial horticultural companies an estimated $15 million they will lose in lost sales. According to Minister Boisclair, "It's the responsibility of businesses that offer products which harm human health." The Minister is not surprised to hear this sort of reaction from the pesticide industry. He believes their actions echo those of the U.S. tobacco industry, who spent years attempting to disprove the link between cigarettes and cancer before the government adopted restrictive legislation. Minister Boisclair's proposed ban will impose immediate fines up to $30,000 (Canadian) for the use of the listed pesticides on provincial and municipal-owned property. Private land owners will have three years to comply. Pesticide use on agricultural land will not be affected. *To view a list of the pesticides proposed to be banned, visit http://www.menv.gouv.qc.ca/communiques/2002/c020703a-anglais-pesticides.doc.*

Court Orders Government to Ensure Pesticide Use Will Not Harm Endangered Salmon

On July 3, 2002, Federal Judge John Coughenour ruled that the Environmental Protection Agency (EPA) violated the *Endangered Species Act* (ESA) by not setting guidelines for pesticides that are protective of endangered salmon. The court found that EPA has a legal obligation under ESA to review the impacts of pesticide use and curtail uses that are harmful to salmon. The court decision calls EPA's "wholesale noncompliance" with its ESA obligations "patently unlawful." Effective immediately, EPA must consult with the National Marine Fisheries Service regarding pesticides' potential impact on salmon populations. "The announcement represents a sweeping victory for both the people and the salmon in the Pacific Northwest," said Earthjustice attorney Patti Goldman, who represented environmental and commercial fishing organizations in the case. "EPA had flouted its legal obligation to stop harmful pesticide uses and the Court put an end to that disregard of the law." According to the plaintiffs, which include the Northwest Coalition for Alternatives to Pesticides, Washington Toxics Coalition, Pacific Coast Federation of Fishermen's Associations and Institute for Fisheries Resources, EPA's own documents find that current uses for several dozen pesticides are likely to result in surface water contamination levels that threaten fish or their habitat. EPA's findings along with U.S. Geological Survey water quality data identify 55 pesticides that pose documented threats to salmon. According to the ruling, "It is undisputed that EPA has not initiated, let alone completed, consultation with respect to the relevant 55 pesticide active ingredients."

Lawrence, KS Establishes Pesticide-Free Parks

Due to the hard work of a strong grassroots movement, the city of Lawrence, KS recently announced its decision to convert three of its public parks to pesticide-free public space. The conversion of the three small parks, totaling 12 acres brought applause from local environmentalists. Terry Shistar, long-time environmental activist and resident in the Lawrence area, member of the Greens, and board member of Beyond Pesticides said, "These are pretty small parks, but it's a start. The new action goes beyond a previous city commitment to reduce pesticide use by going pesticide-free." The city's actions got underway just as the nation's homeowners were gearing up to dump upwards of 50 million pounds (active ingredients) of herbicides on their home lawns and gardens last spring and summer at a cost of nearly $500 million, according to the most recent EPA data (1999). Another $1.5+ billion is spent on another 87 million pounds of insecticides, fungicides, and other pesticides, totaling over $2 billion in pesticides purchased and used by homeowners. Cities across the country are considering bans similar to Lawrence, KS. Actions in a number of Canadian cities, which have established pesticide-free ordinances, have attracted worldwide attention. In October 1996, the San Francisco Board of Supervisors voted unanimously to pass a landmark pesticide ordinance, which bans the use of the most toxic pesticides.

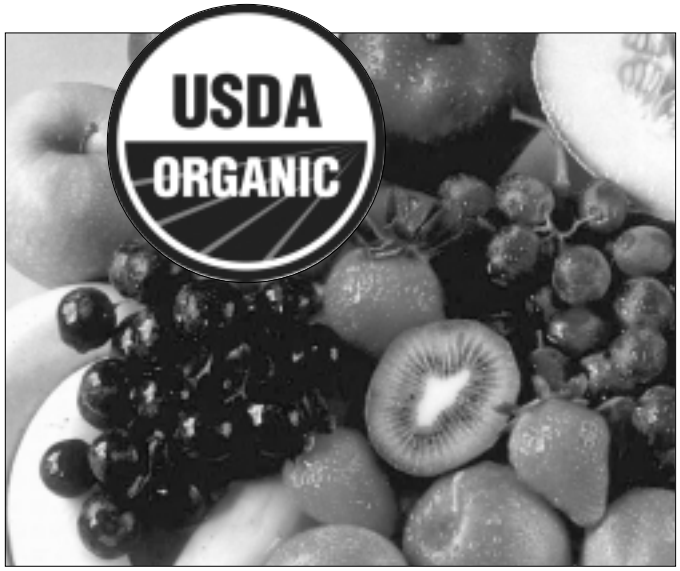
What Does the USDA Organic Seal Mean For You?

A national organic standards fact sheet

"These are the strictest and most comprehensive organic standards in the world."
— Dan Glickman, US Secretary of Agriculture, December 2000

Background

- On October 21, 2002, the U.S. Department of Agriculture (USDA) launched a new set of national standards for food and fibers labeled "organic," whether it is grown in the United States or imported from other countries.
- As of October 21, 2002, when you buy food labeled "organic," in the United States, you can be sure that it was produced using the highest organic production and handling standards in the world and certified by a USDA-accredited certifying agent.
- In 1990, Congress passed the *Organic Foods Production Act* (OFPA) to determine uniform standards for the term "organic." The new National Organic Standards are the result of this legislation.



- The National Organic Standards offer a national definition, a precise set of standards and a regulatory and compliance procedures for farmers and processors to use the term "100% organic", "organic" and "Made with organic ingredients."
- They detail the methods, practices and substances that can be used in producing and handling organic crops, livestock, greenhouse, wild and organic processed food and fiber products.
- They establish clear organic labeling criteria, and specifically prohibit the use of genetic engineering methods, ionizing radiation and sewage sludge.
- The National Organic Standards replace a patchwork of different state and private certification standards, and are designed to take the confusion out of what organic means for consumers.
- While all organic food farmers and processors must be certified by the USDA, use of the "USDA Organic" seal on products labeled "100% organic" and "organic" is voluntary.

What the National Organic Standards mean for consumers

- The National Organic Standards will provide clear and consistent labeling for use of the term "100% organic," "organic" and "Made with organic ingredients" and help eliminate confusion as to what the term *organic* really means.
- For consumers who buy organic food and fiber products, the standards will ensure that they can be confident in knowing what they are buying (including the exact organic content). The involvement of the USDA may inspire further consumer confidence.
- For consumers who are concerned about Genetically Modified Organisms (GMOs), the the National Organic Standards reinforce the fact that organic food is never produced with genetically engineered or modified, and is never irradiated.

What is organic?

Organic food and fiber is grown without relying on synthetic chemical pesticides. Organic farming helps protect our air, soil, water and food supply from potentially toxic chemicals and other pollutants. Organic farming conserves natural resources by recycling natural materials and it encourages an abundance of species living in balanced, harmonious ecosystems. Organic farmers are required by the National Organic Standards to minimize soil erosion; implement crop rotations; provide for the humane, general welfare and health of farm animals and prevent contamina-

tion of crops, soil, or water by plant and animal nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances.

Before a product can be labeled organic, a USDA agent annually inspects the farm where the food or fiber is grown and the facility where organic food or fiber is processed to make sure the farmer and the processing operation are following all the rules necessary to meet USDA organic standards. Companies that handle or process organic food or fiber must be certified as well. The name and address of the USDA-approved organic certifier must also appear on all packaged products that use organic ingredients.

Labeling

To assist consumers, the USDA has designed a seal that may be used on products labeled as "100% Organic" or "Organic." The actual percentage of organic content may be displayed on all products, regardless of label category. The new National Organic Standards will allow four different labeling options based on the percentage of organic ingredients in a product. These include:

"**100% Organic**"—100% of the substances, ingredients, processing aids, food additives including colors and flavorings are certified organic

"**Organic**"—Contains at least 95% organic ingredients. The remaining 5% can be substances petitioned, reviewed, published for public comment and if found that no organic substitute exists are placed on the USDA's National List of Allowed substances. Under the USDA rule, the National List includes the following types of substances:

- Synthetic substances allowed in organic crop production;
- Synthetic inert ingredients as classified by the Environmental Protection Agency (EPA) for use with non-synthetic substances or synthetic substances used as an active allowed crop or livestock pesticide ingredient;
- Non-synthetic substances prohibited for use in organic crop and livestock production and processing;
- Synthetic substances allowed for use in organic livestock production;
- Nonagricultural (non-organic) (both non-synthetic and synthetic) substances allowed as ingredients in or on processed products labeled as "organic" or "made with organic (specified ingredients or food group(s));" and,
- Non-organically produced agricultural products allowed as ingredients in or on processed products labeled as "organic" or "made with organic ingredients."

"**Made with Organic Ingredients**"—Contains between 70-94% organic ingredients. For example, a soup made with at least 70% organic materials and only organic vegetables could be labeled "made with organic peas, potatoes and corn" or "soup with organic vegetables." Non-organic ingredients and synthetic substances normally allowed in conventional food and fiber production are allowed for use in up to 30% of the content of products labeled "Made with organic ingredients."

Products with less than 70% organic ingredients may only list the organic ingredients on the ingredient panel (rather than the primary panel). Non-organic ingredients and synthetic substances normally allowed in conventional food and fiber production are allowed in 31% or more of the content of products labeled using this labeling category.

USDA will oversee and enforce the entry of only qualified organic food and fiber products into the United States

What about organic foods and fibers imported into the US?

In addition to ensuring that domestically produced organic products have met the standards, USDA will oversee and enforce the entry of only qualified organic food and fiber products into the United States, thus ensuring all organic products sold within the United States meet the same stringent standards.

This article was adapted from the Horizon Organic website: http://www.horizonorganic.com.

Are Schools Making the Grade?

School districts nationwide adopt safer pest management policies

By Cortney Piper and Kagan Owens

Across the United States, communities are taking action to protect children from school pesticide use by adopting state and local policies that require safer school pest management practices. These policies foster a school environment that is free from both pests and pesticides by providing long-term control of pests through an integrated pest management (IPM) program, utilizing cultural, biological and mechanical practices. While the definition of IPM can vary widely and, for many, incorporate the heavy use of pesticides, safety advocates call for least toxic pesticide use only as a last resort, and only coupled with pesticide use notification. In those communities that do not have such policies in place, students and school staff continue to be unknowingly exposed to the unnecessary use of toxic pesticides.

Overview of findings

This report documents the school districts that have adopted safer pest management policies in response to state requirements or as a voluntary measure that exceeds state law. It also documents the state of local school pest management policies and illustrates the opportunities that exist for better protection of children from pesticides in localities throughout the country.

Beyond Pesticides has identified 10,108 school districts, or 59 percent of the school districts in the U.S., in 37 states that have a policy with one or more of the following four criteria: (i) establish an integrated pest management (IPM) program; (ii) provide prior written notification of a pesticide application; (iii) post pesticide use notification signs; and, (iv) prohibit certain toxic pesticide applications. While this report does not evaluate whether all these schools are implementing these policies effectively, it does show the number of schools that have adopted some requirements, either through a state law or local school district policy, toward the protection of children from school pesticide use.

Of the approximately 17,000 school districts around the country:[5]

- 26.6% are required to have an IPM policy;
- 43.1% are required to provide prior written notification of pesticide use;
- 56.7% are required to post pesticide use notification signs for either indoor or outdoor applications; and,
- 18.9% have restrictions on certain pesticides.

The survey finds that state laws that only *recommend* the adoption of the four components are ineffective. Without protective federal or state law, the vast majority of school districts are unlikely to voluntarily adopt such measures. The state of Indiana serves as an exception to this finding, where 253 out of 289 school districts, or 88%, have voluntarily adopted a policy that includes IPM and prior notification of pesticide use.[6] In this instance, the threat of a state law proved to be highly effective in pushing school districts to adopt such pest management strategies. In 2001, the Indiana legislature decided that legislation would be put on hold pending adequate voluntary adoption by schools. A model policy, developed by the Indiana Pesticide Review Board with the input of child advocacy groups and school IPM experts and approved by the Indiana School Board Association, continues to be adopted across the state. Unfortunately, 12 percent of school districts are not protected in the state.

Methodology

The findings of this report are based on Beyond Pesticides' review of all state pesticide laws and local school district policies and programs that go beyond their state law. The information on school districts' policies was obtained from a survey of Beyond Pesticides' network of activists, policy makers, PTA's, state extension agents, pest management companies, and school administrators. Beyond Pesticides publicizes school pesticide policies to educate the public on these critical issues. As new policies are adopted and new information is generated, Beyond Pesticides will update this report.

Background

According to the National Academy of Sciences, children are among the least protected population group when it comes to pesticide exposure. The report finds that EPA generally lacks the data on children that is necessary to fully

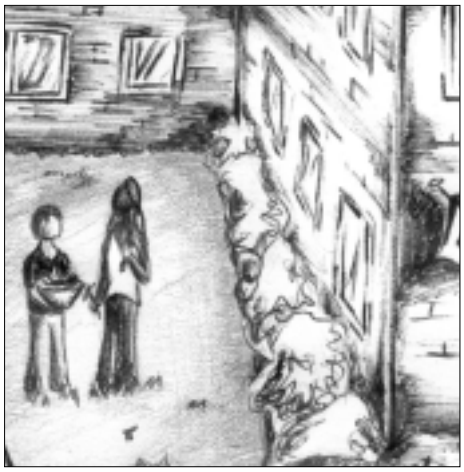
Table 1. U.S. School Districts With Key Pesticide Policies

School Pesticide Provision	Effected by State Mandate	Adopt Provision(s) Exceeding State Mandate	Adopt Voluntary Policy (no state law)	Total Required (state law + voluntary policy)
IPM	4,207 school districts	0 school districts	315 school districts + 5 schools	4,522 school districts + 5 schools
Prior Notification	7,076 school districts	7 school districts	259 school districts	7,335 school districts
Posting Signs	9,631 school districts	14 school districts	3 school districts	9,634 school districts
Use Restrictions	3,194 school districts	11 school districts	30 school districts + 2 schools	3,224 school districts + 2 schools

protect them.[1] Due to their small size, greater intake of air and food relative to body weight, developing organs and other unique characteristics, children are at higher risk than adults to pesticide exposure.

Symptoms of acute pesticide poisoning may include headaches, nausea, dizziness, memory loss, hyperactivity, moodiness, loss of coordination, respiratory problems, and inability to concentrate. Because the symptoms are quite common, poisoning can be difficult to diagnose, especially since the victim is often unaware of any exposure.

While schools are held to the highest academic standards possible, as a nation, advocates have said that schools falter with regard to enforcing the highest possible safety standards. The truth of the matter is, the two go hand in hand. School children are developing motor skills, learning to speak, read and write, and mastering socially acceptable behavior. The most commonly used pesticides are neurotoxic and affect children's ability to learn and process information, yet they are frequently applied to classrooms, cafeterias, gyms, ballfields, playgrounds, or even infirmaries. Animal studies link pesticides in the organochlorine, organophosphate and pyrethroid families to hyperactivity. Organophosphates are also linked to developmental delays, behavioral disorders and motor dysfunction in animal studies.[2] Academic excellence cannot be expected if children are not provided an environment that grants them the ability to grow physically.



Children's exposure to pesticides at school occurs as a result of applications made immediately before children arrive and sometimes while they are present. These chemicals have a tendency to end up where no one really wants them – in indoor air, on carpets, tables and toys, and on the grass where students play. Exposure occurs from breathing contaminated air or touching contaminated surfaces. The residues can remain for days and sometimes break down to other dangerous compounds.[3] Pesticides can be harmful to people even when used according to label directions.

Federal legislation, the *School Environment Protection Act* (SEPA), addresses these issues and provides incentives for schools to adopt safer pest management practices. Although there is opposition from some in the agricultural and chemical industry, the bill passed the U.S. Senate twice in 2001 and 2002.

Without a federal law regulating school pesticide use, it is up to states and local school districts to provide children the protection they need from toxic chemical exposure while at school. According to Beyond Pesticides' *The Schooling of State Pesticide Laws—2002 Update,* thirty-three states have taken some action to step in and provide protective action to address pesticide use in, around or near their schools.[4] These include a mixture of pesticide restrictions and pesticide use notification. Because state protection is uneven across the country, many local school districts have adopted similar, and sometimes more restrictive, pest management policies.

In order to effectively manage pests without a reliance on pesticides, local policies and program must, according to pest managers, address the following issues.

Integrated Pest Management (IPM)

Schools often provide an excellent habitat for certain pests. Cockroaches find a lot of good food stuffed away in forgotten lunch bags. Head lice find it easy to move from host to host where children and their clothing are kept close together all day. Weeds that prefer compacted soils and out compete healthy grasses thrive on school athletic fields. Fortunately,

learning to solve pest problems without chemical dependency involves simple common sense.

A good IPM program can eliminate the unnecessary application of synthetic, volatile pesticides in schools. In most instances, not only has IPM decreased the use of pesticides and thus improved the health and safety of children, but it also decreases the cost of pest management and yields better results.[7] The main elements of a successful IPM program include: 1) monitoring to establish whether there is a pest problem; 2) identifying the causes of the pest problem; 3) addressing the cause by changing conditions to prevent problems; 4) utilizing pest suppression techniques, if necessary, that are based on mechanical and biological controls; and, 5) only after non-toxic alternatives have been tried and exhausted, use of a least toxic pesticide.

Non- and least toxic pest control products are a major growth area and new materials and devices are increasingly available in the marketplace. Instead of addressing the cause of pest problems, many pesticides only treat the symptoms, without changing the underlying problems that create an environment conducive to their existence. Pesticides are often ineffective over the long term and the most common pests are now resistant. Efforts to create a healthy soil and eliminate pests' food, water, shelter and entry will eliminate the pest problem.

Figure 1.
U.S. School Districts Required to Adopt IPM

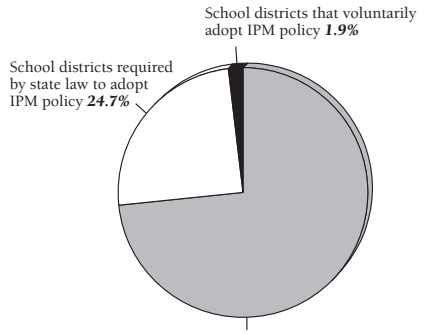
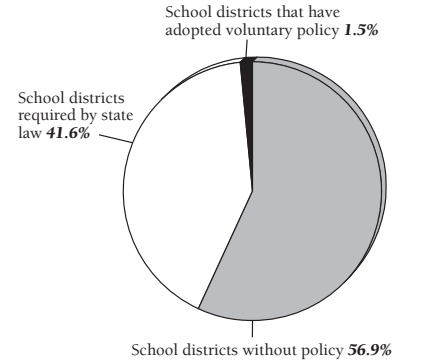


Figure 2.
U.S. School Districts That Require Prior Notification



A total of 4,522 school districts and five individual schools, or 26.6 percent of the 17,000 U.S. school districts, are required to adopt IPM. (See Figure 1.) Overall, 4,207 school districts, or 24.7 percent, are state mandated to adopt IPM[8] and 315 school districts and five individual schools, or 1.9 percent, have voluntarily adopted an IPM policy. Of the voluntary policies, 302 school districts and four individual schools nationwide define IPM in their policy as the use of least-toxic pest management practices, emphasizing non-chemical methods of pest control or pesticide use as a last resort. It is important to note that 253 of the voluntary school IPM programs represent Indiana school districts. Subtracting the Indiana schools, only 62 school districts and five individual schools have voluntarily adopted an IPM policy. An additional 40 school districts and eight schools do not have an official IPM policy, but claim that IPM strategies are being implemented.

Approximately 400 school districts and individual schools hire pest management companies, such as Praxis, EnviroSafe, and Get Set Inc.,[9] that rely on biological control methods to implement their IPM program. Because some contractors chose not to release the names of their clients, Beyond Pesticides could only document 29 school districts and three individual schools in this category. These firms have experienced unprecedented success controlling unwanted pests by using natural alternatives to pesticides, which typically cost less than conventional pest control methods. One of the best examples of these programs is Lewis Cass Technical High School in Detroit, Michigan, a building that is over one hundred years old. The program, started by Praxis, has had tremendous success with non-toxic pest management for cockroaches and rats. Because toxic pesticides are not used, students at the school have taken the lead in running the school's pest management program. The students enjoy knowing they are making a difference while at the same time creating a safe and healthy school environment.

There are also an additional 2,335 school districts in four states with state laws that *recommend* schools adopt an IPM program.[10] Of these, only 28 school districts and two individual schools have reported following their state's recommendation, illustrating that even when state legislation is passed with a recommendation for school IPM, it is ineffective in actually moving local schools in that direction. This shows the significance in federal and state legislation mandating such a requirement.

Prior written notification

Written notification provided prior to each pesticide use is the best way to ensure that all parents, children and school staff are aware and warned about potential exposure. There are two ways to provide this type of notification—a registry, where individuals must sign on to a list, or universal notification, where everyone in the school's database is automatically provided advance notice through a flier carried home by students. There are also notification systems that incorporate elements of both.

Notification-based registries are a less effective means of notifying people because it affords only those who are already knowledgeable about toxic exposure the opportunity to be informed about school pesticide use. Registries also tend to be more costly and time consuming for the school because of the time associated with list management.

Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
ALABAMA (no state law)				
Auburn City Schools	V			
Prichard School District	V			
ALASKA (53 school districts covered by state law)		**X**	**X**	**X**
Anchorage School District	V	E	E	E
Fairbanks North Star Borough School District	V			
ARIZONA (222 school districts covered by state law)		**X**	**X**	
Crown Point Community School, Navajo Indian Reservation	N			
Dragonfleye Charter School	V			V
Kyrene School District	V			
Lake Valley School, Navajo Indian Reservation	N			
Mariano Lake School, Navajo Indian Reservation	N			
CALIFORNIA (989 school districts covered by state law)	**R**	**X**	**X**	
Arcata School District	V			V
Alameda School District	V			V
Capistrano Unified School District	V			
Fremont Unified School District	N			
Fresno Unified School District	V			
Larkspur School District	V		E	V
Los Angles Unified School District	V	E	E	V
Mendocino Unified School District	V			
Nevada County Schools	V		E	V
Novato Unified School District	V			V
Oakland Unified School District	V			V
Oxnard Union High School District	V			
Peabody Charter School, Santa Barbara School District	N			
Pine Tree School, Canyon County School District	V			
Placer Hills Unified School District	N			
San Bernardino City Unified School District	V			
San Diego Unified School District	V			
San Francisco Unified School District	V	E	E	V
San Jose Unified School District	V			
Santa Ana Unified School District	V			
Sacramento City Unified School District	V			
Ventura Unified School District	V	E		V
Vista de las Cruces, Santa Barbara School District	N			
COLORADO (176 school districts covered by state law)			**X**	
Boulder Valley School District	N			
CONNECTICUT (167 school districts covered by state law)	**R**	**X**	**X**	**X**
John Read Middle School	V			
FLORIDA (67 school districts covered by state law)	**X**		**X**	
Brevard County Public Schools		V		V
GEORGIA (183 school districts covered by state law)			**X**	
DeKalb County Schools	N			
ILLINOIS (896 school districts covered by state law)	**X**	**X**	**X**	
INDIANA (289 school districts covered by state law)			**X**	
253 districts adopted IN model policy[2]	V	V		
IOWA (376 school districts covered by state law)			**X**	
Cedar Falls Community Schools	V	V		V

Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
IOWA *continued*				
Davenport Community Schools	V	V		
Lewis Central Schools	V	V		
Sioux Central Community Schools	V	V		
Woodward-Granger Community Schools	V	V		
KANSAS (no state law)				
Altamont Grade School, Unified School District 506				V
KENTUCKY (176 school districts covered by state law)	**X**	**X**	**X**	
LOUISIANA (66 school districts covered by state law)	**X**	**X**		**X**
MAINE (298 school districts covered by state law)	**X**	**X**	**X**	
Five Town Community School District		E		
MARYLAND (24 school districts covered by state law)	**X**	**X**	**X**	
Lime Kiln Middle School, Howard County Public Schools				N
St. Mary's County Public Schools			E	E
Triadelphia Ridge Elementary School, Howard County Public Schools				N
MASSACHUSETTS (303 school districts covered by state law)	**X**	**X**	**X**	**X**
MICHIGAN (169 school districts covered by state law)	**X**	**X**	**X**	**X**
Allendale Public Schools	N[3]			N[3]
Ann Arbor Public Schools				E
Bangor Public Schools	N[3]			N[3]
Birmingham Public Schools	N[3]			N[3]
Coopersville Area Public Schools	N[3]			N[3]
Detroit Cass Tech. H.S., Detroit Public Schools	N[3]			N[3]
East Jordan Public Schools	N[3]			N[3]
Emerson Elem., Saginaw Public Schools	N[3]			N[3]
Fremont Public Schools	N[3]			N[3]
Fruitport Community Schools	N[3]			N[3]
Godwin Heights Public Schools	N[3]			N[3]
Grand Haven Area Public Schools	N[3]			N[3]
Grand Rapids Public Schools	N[3]			N[3]
Greenville Public Schools	N[3]			N[3]
Harbor Springs Public Schools	N[3]			N[3]
Kalamazoo Public Schools	N[3]			N[3]
Muskegon Area Intermediate School District	N[3]			N[3]
Paw Paw Public Schools	N[3]			N[3]
Reeths-Puffer Schools	N[3]			N[3]
Rockford Public Schools	N[3]			N[3]
Saginaw H.S., Saginaw Public Schools	N[3]			N[3]
Saranac Community Schools	N[3]			N[3]
Shelby Public Schools	N[3]			N[3]
Sturgis Public Schools	N[3]			N[3]
Sylvan Christian School	N[3]			N[3]
Washtenaw Intermediate School District				E
Waverly Community Schools	N[3]			N[3]
West Ottawa Public Schools	N[3]			N[3]
MINNESOTA (349 school districts covered by state law)		**X**		
Hopkins School District 270	V	E		
Willmar Public Schools	V		V	V
MONTANA (457 school districts covered by state law)	**R**		**X**	
NEW HAMPSHIRE (176 school districts covered by state law)			**X**	**X**[4]
NEW JERSEY (575 school districts covered by state law)	**X**	**X**	**X**	**X**
Haddonfield Schools				E

Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
NEW MEXICO (89 school districts covered by state law)		**X**	**X**[3]	**X**
Albuquerque Independent School District	V			
Santa Fe Public Schools	V			E
NEW YORK (722 school districts covered by state law)	**R**	**X**	**X**	
Albany City School District	N			
Baldwin Union Free School District	V			V
Ballston Spa School District	V			V
Buffalo School District	V			
Fulton City School District	V			V
Great Neck Public Schools	V			V
Greenwich Central School District	V			V
Locust Valley Schools	V			
New York City Schools	V			V
North Syracuse School District	V			
Williamsville Public Schools	V			
NORTH CAROLINA (no state law)				
Chapel Hill-Carrboro City Schools	N			
Pitt County Schools	V			
OHIO (614 school districts covered by state law)			**X**	
Athens City Schools	V			
Beavercreek School District	N			N
Brookville Local Schools	N			N
Mad River Local Schools	N			N
Northmont City School District	N			N
Perrysburg Schools	N			N
Twin Valley Schools	N			N
Worthington City Schools	V			
Yellow Springs Schools	N			N
OREGON (no state law)				
Eugene Public Schools	V			
Portland Public Schools	V	V	V	V
PENNSYLVANIA (501 school districts covered by state law)	**X**	**X**	**X**	**X**
Central Dauphin School District				E
Philadelphia School District				E
Pittsburgh School District				E
Radnor Township School District				E
RHODE ISLAND (37 school districts covered by state law)	**X**	**X**	**X**	
South Carolina (no state law)				
Richland School District 2	V	V	V	
School District 5 of Lexington & Richland Counties	V			
TENNESSEE (no state law)				
Memphis City Schools	V			
Nashville Metro Public Schools	V			
TEXAS (1040 school districts covered by state law)	**X**	**X**	**X**	**X**
UTAH (no state law)				
Granite School District	N			
VERMONT (259 school districts covered by state law)			**X**	
Burlington			E	
VIRGINIA (no state law)		**R**	**R**	
Arlington County Public Schools	N			
Fairfax Public Schools	N			
Montgomery County Public Schools	N			

Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
WASHINGTON (296 school districts covered by state law)		**X**	**X**	
Bainbridge Island School District	V		E	V
Carl Sandburg Elementary School, Lake Washington School District	V	E	E	V
Lincoln Elementary School, Olympia School District	V			V
Mercer Island School District	V			V
Oak Harbor School District	V		E	V
Olympia School District	V		E	V
Seattle School District	V		E	V
Sedro-Woolley School District No. 101	V		E	V
Shoreline School District	V			V
South Whidbey School District	V			V
Vancouver School District	V		E	V
Vashon Island School District	N			
WEST VIRGINIA (55 school districts covered by state law)	**X**	**X**		**X**
Cabell County Schools				E
WISCONSIN (428 school districts covered by state law)			**X**	
Madison Metropolitan School District	V			
Waterford Graded School District	V			
WYOMING (49 school districts covered by state law)		**X**	**X**	

X = provision in state law

R = state law recommends schools adopt provision

V = provision in school policy (voluntary)

E = school policy provision exceeds state law

N = school implementing but does not have official policy

[1] The table lists all states with a state law in one or more of four criteria and those that have some activity at the local level. The following are not listed in the table because they have neither a state law or local activity: Arkansas, Delaware, Hawaii, Idaho, Mississippi, Missouri, Nebraska, Nevada, North Dakota, Oklahoma, South Dakota, and Washington DC and the U.S. territories.

[2] The database of schools that have adopted the policy is tracked by Improving Kids Environment and can be found at http://www.ikecoalition.org/Pesticides_Schools/School_Pesticide_Status2.asp

[3] While the state law provision applies to all school districts in the state, this school /district has adopted pest management practices (without a policy) that exceeds the state law.

[4] The law states that pesticides cannot be applied "where exposure may have an adverse effect on human health." Although this language is open to interpretation, it is a stronger safety standard than contained in the *Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)*, which protects for "unreasonable adverse effects."

[5] New Mexico law requires signs to be posted for emergency pesticide applications only.

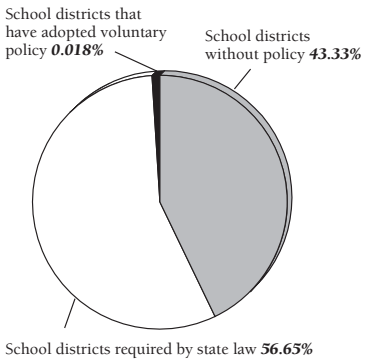
Universal notification is true right-to-know and requires fewer school resources. One of the most protective examples of prior written notification language is incorporated into the pest management plan of Carl Sandburg Elementary School, Lake Washington School District, in Washington State. This school requires 72-hour universal prior notification, except for containerized baits. The school has also established a registry of chemically sensitive students, staff and others who wish to be informed of pesticide use two weeks in advance of the proposed application.

A total of 7,335 school districts, or 43.1 percent of the 17,000 U.S. school districts, require prior notification of pesticide applications. (See Figure 2.) Overall, 7,076 school districts, or 41.6 percent, are state mandated to provide prior written notification[11] and 259 school districts, or 1.5 percent, have voluntarily adopted such a policy. Of the 7,076 that have state mandates, 846 are required to provide universal notification,[12] 3,859 are required to provide notification via a registry,[13] 2,044 leave the decision on the form of notification to the schools,[14] and 327 have a notification system that is a modified version of both types of notification vehicles.[15] In addition, seven school districts have adopted policies that contain prior notification provisions that exceed their state law.

Of the 259 voluntary programs, 257 school districts have established registries, one school district provides universal notification, and one school district does not specify the type or timing of prior notification. Again, outside of the 253 Indiana school districts, only six school districts have a voluntary policy in place on this aspect.

Although there are no state laws that establish an appeal process for parents to challenge a school's pesticide use, one

Figure 3.
U.S. School Districts That Require Posting Notification Signs



school district and one individual school have added this provision to their school pest management policy. This allows concerned parents and community members to formally appeal to the school district to withdraw the proposed pesticide application. The Shoreline School District in Washington State allows parents the right to appeal the use of a school pesticide, in writing, up to 72 hours prior to the application.

Posted notification signs

Posted notification signs warn those at school when and where pesticides are being or have been applied. Posting signs, whether for indoor or outdoor pesticide applications, is critical because of the extensive period of time students and school employees spend at school and the residual amount of the pesticide that is left behind after the application is complete. Prior posting enables people to take precautionary steps to avoid the exposure.

A total of 9,634 school districts, or 56.7 percent of the 17,000 U.S. school districts, are required to post signs for either indoor or outdoor pesticide applications or both. Nearly all of these (9,631) are state mandated,[16] while three, or 0.018 percent, have voluntarily adopted such a policy. (See Figure 3.) A total of 4,179 school districts, or 24.6 percent, are required to post notification signs for both indoor and outdoor pesticide applications.[17] Whereas, 1,497 school district, or 8.8 percent, are only required to post signs for indoor applications[18] and 3,955 school districts, or 23.3 percent, are only required to post signs for outdoor applications.[19] Of the 9,634 school districts that have a state mandate for posting signs, 14 school districts have adopted a policy that contains posting provisions that exceed their state law.

One of the largest school districts in the nation, Los Angeles Unified School District in California, has an exemplary requirement for posting notification signs. This district is required to post signs "at least 72 hours before and for five (5) half-lives after any pesticide application." For emergency applications, signs are posted at the time of the pesticide application.

Pesticide use restrictions

Limiting when and what pesticides are applied in and around schools can significantly reduce pesticide exposure. Many poli-

Pesticide Use Policy
Oak Harbor School District, Washington

Oak Harbor School District, Washington prohibits the following from being used at its schools if the pesticide:

- is classified as highly acutely toxic (Hazard Category I or II) by the US EPA (signal words DANGER or WARNING);
- is a restricted use pesticide;
- contains ingredients that the US EPA has not evaluated and determined to contain no possible, probable, known or likely carcinogens;
- contains reproductive toxicants (California Proposition 65 list);
- contains ingredients listed by Illinois EPA as known, probable or suspected endocrine disruptors;
- contains nervous system toxicants (neurotoxic by mode of action—defined as pesticides in the organophosphate, carbamate, pyrethrin, and pyrethroid classes of chemicals);
- contains ingredients that have a soil half-life of more than 100 days;
- contains ingredients that have high or very high mobility in soil, according to Groundwater Ubiquity Score (GUS) Index; and,
- is labeled as toxic to fish, birds, bees (except products used specifically to control bees in situations where they pose a hazard to humans), wildlife, or domestic animals.

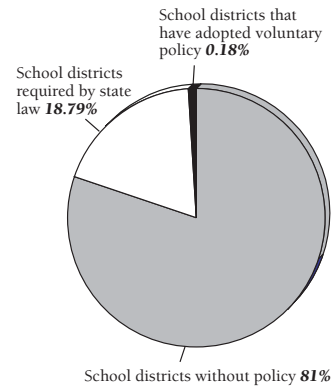
No pesticides will be used if the District does not have information on all the pesticide's active ingredients. Routinely scheduled pesticide applications and indoor fogging and space spraying are prohibited. Least-toxic pesticides may be used as a last resort. These are pesticides meeting the following criteria:

- The pesticide's active ingredient has a soil half-life of 30 days or less (unless the active ingredient is a mineral);
- The pesticide's active ingredient has extremely low or very low mobility in soil; and,
- The pesticide is not labeled as toxic to fish, birds, bees (except products used specifically to control bees in situations where they pose a hazard to humans), wildlife, or domestic animals.

cies have embraced the notion that pesticides should never be applied when students or staff are, or likely to be, in the treated area within 24 hours of the application. Certain types of pesticides, such as carcinogens, endocrine disruptors, reproductive toxins, developmental toxins, neurotoxins and pesticides listed by EPA as a toxicity category I or II pesticide should never be used around children.

A total of 3,224 school districts and two individual schools, or 18.9 percent of the 17,000 U.S. school districts, have policies that prohibit certain pesticides or pesticide practices. (See Figure 4.) Overall, 3,194, or 18.79 percent, are state mandated[20] and 30 school districts and two individual schools, or 0.18 percent, have voluntarily adopted such a provision. Eleven school districts have pesticide use restrictions that exceed the requirements of their state law. An additional 29 school districts and five individual schools claim to prohibit certain pesticide practices without having an official policy.

Figure 4.
U.S. School Districts With Pesticide Use Restrictions



A total of 7,335 school districts, or 43.1 percent of the 17,000 U.S. school districts, require prior notification of pesticide applications.

On the state level, most pesticide use prohibition provisions pertain to pesticide reentry intervals where the treatment area must remain unoccupied for a certain number of hours. Only one state, Massachusetts, with its 303 school districts, bans the use of certain high hazard pesticides from being applied at schools. On the school district level, policies are more likely to include a provision banning high hazard pesticides than establishing a reentry interval.

Oak Harbor School District in Washington State has a policy that includes a very comprehensive criteria list for prohibited pesticides. In fact, many school districts in Washington have adopted the same or similar set of criteria for high-hazard pesticides.

Some school districts have adopted pest management practices that go beyond IPM by eliminating the use of even the least toxic pesticides. These schools rely on non-toxic methods of pest management. The following are a few examples.

- Dragonflye Charter School in Arizona is a "chemically free" school where pesticides, toxic-cleaning products, wallpaper paste, paint and fragrances are prohibited.
- Radnor Township School District in Pennsylvania adopted a "natural" pesticide program where schools use only non-toxic methods of pest control.
- Lincoln Elementary School in Washington adopted a zero pesticide policy where only organic fertilizers are used.

These schools exemplify the fact that eliminating hazardous chemicals does not negatively impact their ability to manage pest problems.

Local watchdogs

Both the adoption of policies and enforcing their implementation require vigilant monitoring and public pressure. School administrators are more conscious of their pest management practices if they know parents are concerned and tracking their program. It is important to note that a state or school district policy requiring IPM or notification procedures does not ensure that these laws are being adequately implemented. Therefore, parents and community members are critical in helping school districts implement and improve their pest management practices. Community-based efforts to adopt safer school pest management practices have been central to the effort to protect children from pesticides.

Website resource

www.beyondpesticides.org

To facilitate the movement to safer practices, Beyond Pesticides has developed a comprehensive internet resource devoted to state and local school pesticide policies. The website contains information on every state's school pest management law as well as information on the 367 school districts and 16 individual school policies that go beyond state law. Information about pesticide use in schools, state laws regarding school pesticide use, summaries and copies of local school districts' policies, and contact information for local organizations that are involved in the school IPM movement is available at the *State and Local Policies* section of Beyond Pesticides' *Children and Schools* program page found at www.beyondpesticides.org/schools/schoolpolicies.

Conclusion

Although this study shows that a majority of school districts nationwide have adopted safer pest management practices, there are still large gaps within state and school district programs throughout the country where children go without adequate protection. The movement at the local level to provide a safe learning environment for children is growing as communities reject chemical-intensive approaches to pest management and embrace non-toxic alternatives.

Editor's note: If you are aware of a school district or individual school that has a policy and is not listed in this study, please forward it to us. For additional information on school pesticide use, contact Beyond Pesticides or see our website at www.beyondpesticides.org.

Endnotes

1 National Research Council, National Academy of Sciences. 1993. *Pesticides in the Diets of Infants and Children*. National Academy Press. Washington DC.

2 Shettler, T., et al. 2000. "Known and suspected developmental neurotoxicants." *In Harms Way: Toxic Threats to Child Development*. Greater Boston Physicians for Social Responsibility: Cambridge, MA; Bushnell, P., et al. 1993. "Behavioral and Neurochemical Effects of Acute Chlorpyrifos in Rats: Tolerance to Prolonged Inhibition of Chloinesterase." *Journal of Pharmacology Exper Thera* 266(2): 1007-1017; Volberg, D. et al. 1993. *Pesticides in Schools: Reducing the Risks*, Robert Abrams, Attorney General of the New York State Department of Law, Environmental Protection Bureau, NY; Guillette, E., et al. 1998. "An Anthropological Approach to the Evaluation of Preschool Children Exposed to Pesticides in Mexico." *Environmental Health Perspectives* 106(6):347-353.

3 Gurunathan, S., et al. 1998. "Accumulation of Chlorpyrifos on Residential Surfaces and Toys Accessible to Children." *Environmental Health Perspectives* 106(1); Fenske, R. et al. 1990. "Potential Exposure and Health Risks of Infants following Indoor Residential Pesticide Applications." *American Journal of Public Health* 80(6): 689-693; Wright, C., et al. 1981. "Insecticides in the Ambient Air of Rooms Following Their Application for Control of Pests." *Bulletin of Environmental Contamination & Toxicology* 26: 548-553; Nishioka, M., et al.1996. "Measuring Transport of Lawn-Applied Herbicide Acids from Turf to Home: Correlation of Dislodgeable 2,4-D Turf Residues with Carpet Dust and Carpet Surface Residues." *Environmental Science Technology* 30: 3313-3320; U.S. EPA. 1990. "Nonoccupational Pesticide Exposure Study" (NOPES). Atmospheric Research and Exposure Assessment Laboratory. Research Triangle Park, North Carolina. EPA/600/3-90/003; Lewis, R., et al.1991. "Determination of Routes of Exposure of Infants and Toddlers to Household Pesticides: A Pilot Study." Methods of Research Branch, U.S. EPA. Research Triangle Park, NC.

4 Owens, K and J. Feldman. 2002. "Schooling of State Pesticide Laws – 2002 Update." *Pesticides and You* 22(1): 14-17.

5 National Center for Education Statistics, Office of Educational Research & Improvement. U.S. Department of Education. http://nces.ed.gov/ccd/.

6 The database of schools that have adopted the policy is tracked by Improving Kids Environment and can be found at http://www.ikecoalition.org/Pesticides_Schools/School_Pesticide_Status2.asp.

7 Beyond Pesticides. 2002. "Schools Save Money With Integrated Pest Management: A Beyond Pesticides Factsheet." *Pesticides and You* 22(1): 18-19.

8 Thirteen states require schools adopt IPM: Florida, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, New Jersey, Pennsylvania, Rhode Island, Texas, and West Virginia. However, Maine, New Jersey, and Pennsylvania's laws do not go in to effect until the 2003-2004 school year. Illinois is also included, even though the state law allows school districts to opt out of the IPM requirement if they show it is too costly. Beyond Pesticides included Illinois because all available data shows that IPM costs the same as, if not less than, a conventional pest management program.

9 EnvyroSafe, Inc., PO Box 151011, Grand Rapids, MI 49515, 1-800-226-0418, envyrosafe@aol.com, http://envirosafeipm.com; Get Set, Inc., 2530 Hayes St., Marne, MI 49435, 1-800-221-6188, steve@getipm.com, http://www.getipm.com; Praxis, 2723 116th Ave., Allegany, MI 49010, 616-673-2793, praxis@allegan.net, http://praxis-ibc.com. See *Safety Source* to get a listing of least toxic pest management companies at www.beyondpesticides.org.

10 The four states are California, Connecticut, Montana, and New York. New York is included in this list because its school districts are only required to develop an IPM plan, whereas the list of school districts required to have an IPM policy are required to implement an IPM program. States that have developed materials on school IPM, such as Hawaii, Minnesota, Oklahoma, South Carolina, Tennessee and Wisconsin are not included. Only those states that have passed acts or regulations recommending schools adopt IPM are included.

11 Twenty-one states require prior written notification of school pesticide applications: Alaska, Arizona, California, Connecticut, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Pennsylvania, Rhode Island, Texas, Washington, West Virginia and Wyoming.

12 This represents the number of school districts in Arizona, New Jersey and Wyoming. This does not include schools required to provide universal notification of the school's pest management program only at the start of the school year.

13 This represents the number of school districts in California, Connecticut, Kentucky, Louisiana, Michigan, Minnesota, New Mexico, New York, Rhode Island, Texas and West Virginia.

14 This represents the number of school districts in Alaska, Illinois, Maine, Pennsylvania and Washington.

15 This represents the number of school districts in Maryland and Massachusetts.

16 Twenty-eight states have requirements regarding schools posting pesticide notification signs: Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Montana, New Hampshire, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Rhode Island, Texas, Vermont, Washington, Wisconsin and Wyoming.

17 Fourteen states require posting signs for indoor and outdoor applications: Alaska, Arizona, California, Georgia, Maine, Maryland, Massachusetts, Michigan, New Jersey, New Mexico, Pennsylvania, Washington, Wisconsin and Wyoming.

18 Two states require posting signs for indoor applications only: Montana and Texas.

19 Twelve states require posting signs for outdoor applications only: Colorado, Connecticut, Florida, Illinois, Indiana, Iowa, Kentucky, New Hampshire, New York, Ohio, Rhode Island and Vermont

20 Eleven states require schools to prohibit certain pesticides or pesticide practices: Alaska, Connecticut, Louisiana, Massachusetts, Michigan, New Hampshire, New Jersey, New Mexico, Pennsylvania, Texas and West Virginia.

The Emergency Pesticide Use Loophole

Little watched provision allows widespread unlabelled pesticide use

It was the summer of 2002, and the state of Louisiana thought it was time to bring back a banned pesticide to control rice weevil. So the state Department of Agriculture looked to the leadership of the infamous Bob Odom, who in addition to leading the department was indicted in August of 2002 on counts of bribery, felony theft, extortion, malfeasance in office, filing false public records, money laundering and obstruction of justice going back all 22 years of his tenure as Secretary of Agriculture. Mr. Odom naturally turned to a provision in the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA), which he claimed gave the state the right to apply a banned pesticide. The emergency exemption program (FIFRA Section 18), allows EPA to permit pesticides not registered for a specific purpose to be used under "emergency circumstances," such as risk to human health or "significant economic [crop] loss."

EPA does have veto authority over these decisions, but when Louisiana began applying this deadly pesticide, EPA stood by. The agency allowed farmers in the state of Louisiana, under the FIFRA emergency provision, to begin applying 10,000 acres worth of granular carbofuran for rice weevil control. After 2,500 acres were treated in June and existing stocks of the highly hazardous chemical ran out, EPA initiated a 5-day public hearing process to decide whether to let the program proceed. The manufacturer, FMC, was gearing up production to meet the first new demand since the cancellation and phase-out were announced in 1991.

The chemical came under fire in the 1980's after EPA estimated that one to two million birds were killed each year by granular carbofuran use. According to scientists at the U.S. Fish and Wildlife Service, "There are no known conditions under which carbofuran can be used without killing migratory birds. Many of these die-off incidents followed applications of carbofuran that were made with extraordinary care." The pesticide has also been associated with the death of threatened and endangered species. But this did not stop Louisiana. And, EPA did not flinch.

After the action attracted media attention and numerous environmental and conservation groups weighed in, EPA did veto the additional acreage. It was a good legal move on EPA's part, since the law states that a pesticide may not be given a specific exemption unless there is "movement toward registration of the proposed use." Brining back banned formulations was not the intent of the law.

However, the Louisiana incident brought back bad memories for those who had tracked Section 18 exemptions through its years of abuse in the 1980's and 1990's. It is a reminder that this loophole in the law is something that needs constant monitoring and watchdogging.

A quick look at the exemption program's current record finds that EPA grants, on average, over 80 percent of all Section 18 requests. From March 1998 to March 2002, EPA and states granted over 2000 exemptions, while it denied only 72. This means that in over 2000 cases across the country, pesticides or pesticide uses that have not been subject to full scientific and administrative review, are being applied to a field near you or to a crop that you eat.

Beyond Pesticides believes that this program is an abuse and misuse of authority and represents a disregard for human health and the environment.

Through declarations of emergencies and crisis, states allow use of pesticides which for several reasons...cannot be registered for additional uses.

Background

Section 18 emergency exemptions provide a loophole by which pesticides are used without the scrutiny provided in the registration process. Through declarations of emergencies and crisis, states allow use of pesticides which for several reasons (including lack of a sustainable market due to rapid development of resistance, data gaps, or EPA's concern about certain risks) cannot be registered for additional uses. EPA has said that pesticides with data gaps will not be allowed to expand their use patterns, but this restriction does not apply to emergency exemptions and special local needs registration.

Section 18 of FIFRA provides that, "The Administrator may, at his discretion, exempt any Federal or State agency from any provision of [FIFRA] if he determines that emergency conditions exist which require such exemption." EPA has interpreted this section as a green light to permit states to exempt pesticides from the normal registration process when it feels emergency conditions exist.

In response to investigations of the Section 18 program, which uncovered widespread abuse, including a 260% increase in emergency exemptions and a 753% increase in crisis exemptions from 1978 to 1982, EPA initiated a negotiated rulemaking process in 1984 to develop new regulations. Allen Spalt, president of the Agricultural Resources Center in Carrboro, NC represented Beyond Pesticides (National Coalition Against the Misuse of Pesticides) on the negotiated rulemaking committee. Regulations developed by consensus were proposed by EPA in 1985, and the final version was published in 1986. Although the new regulations did

not include everything that Beyond Pesticides wanted, they were a substantial improvement.

Unfortunately, the reduction in the number of emergency exemptions issued immediately before the new regulations was followed by a gradual increase after 1985. Meanwhile, the threat of cancellations due to 1988 amendments to FIFIRA led to additional abuses of Section 18. The 1986 rules, intended to stem further abuses of the system slowed the increase but did not stop it. Between fiscal years 1985 and 1990 EPA documented a 108 percent increase in the number of exemptions, while state-granted exemptions rocketed up 158 percent. The problem proved to be more then just an increase in the number of exemptions. In congressional testimony, Beyond Pesticides Executive Director Jay Feldman said, "As of 1990, EPA and the states have granted emergency exemptions for chronic, routine problems." By definition, a chronic and routine problem does not qualify as an emergency. As the 1990's continued, so did these trends. Today, the EPA grants an average of over 80 percent of all Section 18 requests.

Due to this continued misuse of authority and disregard for human health and the environment, Beyond Pesticides is continuing the fight to keep EPA and states honest and working for our safety. Here is how to get involved:

Challenging emergency exemptions

There are four types of emergency exemption: specific exemptions, quarantine exemptions, public health exemptions, and crisis exemptions. Specific, quarantine, and public health exemptions follow similar rules and must be approved by EPA. Crisis exemptions can be issued unilaterally by the state, which must notify EPA, and are limited to 15 days unless extended by an application for a specific, quarantine, or public health exemption. Beyond Pesticides' efforts have concentrated on the most common uses of Section 18—specific and crisis exemptions.

How to learn about your state's emergency exemption

In some states it is easier to learn about impending Section 18 exemptions than others. In North Carolina, Allen Spalt learns about them by attending meetings of the state pesticide review board. In Kansas, Green Party activists Terry Shistar has learned about them from the "Economic Insect Survey Reports," but now has been assured that she will be notified by the state agency. Northwest Coalition for Alternatives to Pesticides (NCAP) requested a list of applications for past years under Oregon's open records act. Ideally, environmentalists should be able to convince the state agency that they should be part of the decision-making process on emergency exemptions.

A declaration of crises can be obtained from the state agency under the state's open records act or from EPA's registration division. It should not require a federal *Freedom of Information Act* (FOIA) request because, as part of a 1993 settlement agreement (*NCAMP v. Browner, U.S. District Court, Civ. Action No. 93-0087-LJO, 1993)* filed by Beyond Pesticides, "EPA [is required to] establish a public docket for all emergency exemptions." Similarly, a copy of the application for a specific exemption can be obtained from the state agency or EPA. Since crisis exemption are often extended with a specific exemption request or are issued when a state has not received a timely response from EPA on the specific exemption, ask whether a specific exemption application has been submitted in the case of a crisis. EPA has recently started posting Section 18 requests on its website (http://www.epa.gov/opprd001/section18/), which provides a general look at how many and for what purpose requests are made in each state. Unfortunately, the listings are not up-to-date and are only posted after they have been granted or denied.

Critiquing an application

The two most important questions to be addressed in reviewing an application are:

- Does an emergency situation exist?
- Is the pesticide chosen appropriate?

Most of the information needed for a critique is contained in the specific exemption application. However, it is also very useful to know how many times the state has issued an emergency exemption for the use. This information can be found at the EPA Section 18 website. The basic definition of an emergency is an "urgent, non-routine" situation. The most successful challenges have been on emergency exemptions that have been repeated for several years because these clearly fail to meet the "non-routine" requirement.

Is it an emergency situation?

To determine if a request meets the definition of an emergency look closely at these issues within the application: Are there other registered products, are there alternative methods, is it a new pest, will there be significant financial loss?

Other registered products. Remarkably, many claimed emergencies fail to meet these simple requirements. Emergency exemptions may not be used to provide an additional tool, or even a more effective pesticide. If there are other registered products available for the use, the state must show that they are not efficacious. If they are not effective, they should not be registered for the use.

Alternative methods. The state must show that there are no alternative practices available. Although it is helpful in criticizing the application to be familiar with methods used by organic growers to deal with the pest or with literature on biocontrol, it is usually sufficient to point out the failure of the state to evaluate alternatives.

New Pests. Occasionally, an emergency exemption will be requested to control a new pest, but that does not always mean the emergency is justified. For example, products registered for "aphids" were available for control of the newly intro-

duced Russian wheat aphid, and it was necessary to show they were not effective. (Some were.) If an emergency exemption is issued for control of a new pest, the product should be making "reasonable progress toward registration"—a complete application for registration under Section 3 of FIFRA must be submitted within three years.

Significant economic loss. Most emergency exemptions are claimed to be needed to avoid a significant economic loss. The judgment of a significant economic loss should be backed up by data showing that the expected net profitability under emergency conditions is outside the range of profitability of the preceding five years. This requirement is the crux of an emergency—it is what makes the condition urgent and non-routine. It is generally very easy to criticize applications on this requirement because states almost never present the appropriate data.

A significant economic loss may be within the normal range of fluctuations of net income if the loss would affect the long-term financial viability of the operation. The preamble to the draft regulations supported by the negotiating rulemaking committee gives the following example: "…an enterprise may face a situation where, due to circumstances beyond its control (e.g., bad weather), it must have a remarkable good upcoming crop year in order to remain financially viable. While, without an exemption to control an emergency pest situation, it can expect a crop yield and/or income within the historical range, this will not be sufficient to make up for the previous crop failures. Only with the use of an emergency exemption to solve the pest problem, can the enterprise maintain an expected, above-average yield and/or income to a point where the long-term financial viability of the enterprise is assured."

This type of significant economic loss should not be used repeatedly to justify exemptions—otherwise, it suggests that the enterprise never was viable.

Most emergency exemptions are claimed to be needed to avoid a significant economic loss.

Appropriate choice of pesticide

There are several reasons that the state's choice of a pesticide may be inappropriate: repeated exemptions without progress towards registration, known risk factors, and unknown risk factors.

Repeated emergency exemptions. Reasonable progress towards registration should be made, and therefore emergency exemptions beyond three years should very rarely be justified. (An emergency condition should not exist for year after year unless a new pest or a threat to public health or environment is involved.) The three years should include uses in other states as well. For example, Supracide was used under emergency exemption in Texas for a few years (and then abandoned due to resistance) before it began to be used under an emergency exemption in Kansas. This gave the registrant plenty of time to complete the registration.

Known risk factors. The state must make a judgment that the use does not pose unreasonable adverse effects to the environment. Since the same chemicals seem to appear in different states at the same time, cooperation with others working on emergency exemptions will be very helpful in this respect. Beyond Pesticides used this argument in July 2002 to help derail the request from the Louisiana Department of Agriculture to use granular carbofuran on rice. This pesticide was cancelled for that use due to its acute avian toxicity and a history of massive bird kills.

Unknown risk factors. Since a major use of Section 18 is the expansion of uses of pesticides with data gaps, these gaps should be noted in comments. EPA should not allow Section 18 to be used as a backdoor for chemicals that cannot meet registration requirements. Beyond Pesticides can help determine what data gaps exist.

Crisis exemptions

The declaration of a crisis may be accomplished by a letter sent to EPA from a state agency, and may be sent as much as 24 hours after the crisis begins. However, a crisis is limited to 15 days unless an application for a specific, public health, or quarantine exemption is submitted.

The crisis letter does not need to contain all of the justification for the emergency situation, but may contain enough to indicate that an emergency does not exist. For example, a crisis has included "weeds in wheat" in Kansas, for which many pesticides are available.

If additional information is available (for example, through a specific exemption request), review (even after the crisis has expired) can be very useful. Authority to issue crisis exemptions can be revoked from agencies that abuse it.

Conclusion

Section 18 emergency requests are not always an abuse of power, but anytime a situation allows the circumvention of scientific rigger, administrative scrutiny, and public health and safety concerns special attention must be paid. Beyond Pesticides and our many partner organizations work diligently to monitor EPA and other agencies to ensure that public safety and the health of the environment comes first, but more public involvement is required. *Please take the time to watch your state agencies and prevent any future abuses. Contact Beyond Pesticides for assistance.*

Terry Shistar, Beyond Pesticides board member, living in Lawrence, KS, Jay Feldman, Beyond Pesticides executive director, and Jessica Lunsford, Beyond Pesticides staff associate contributed to this article. The original piece was written by Terry Shistar.

A Review of *Fatal Harvest: The Tragedy of Industrial Agriculture*

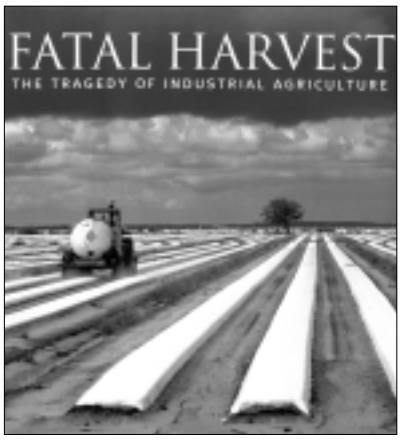
(Andrew Kimbrell, ed., Island Press, 2002)

by Kathleen Burnham

Fatal Harvest, a compilation of essays from more than 40 authors including Wendell Berry, Wes Jackson, Michael Ableman, Jim Hightower, Miguel Altieri, Monica Moore, and Alice Waters and 250 color photographs, is an exposition of industrial agriculture and its harsh effects on our health, environment and culture. Its editors seek to reveal the various ways in which food corporations fool the average consumer into believing that mass production of crops is a panacea for all of the world's food problems. The book begins with an idealistic introduction that states that the world should turn vegan, buy all organic food, and throw out all of our TV dinners. Despite this somewhat pedantic beginning, Fatal Harvest's thoughtful essays, dispelled myths, and in-depth studies on today's mass food production all serve to inform and empower the public.

Fatal Harvest reveals that some of our favorite fruits and vegetables are streamlined due to commercial replacement of hybrids. The section of this book entitled "Illusion of Choice" contrasts the vibrant history of many crops with today's sad, uniformity. For example, over 85% of the 7,000 varieties of apples existent during the last century are currently extinct. As bio-diversity wanes, the public misses out on the diverse and tasty vegetables that our ancestors enjoyed years ago. Most people would ask themselves "why the need for more than three varieties of apples?" The author in this section claims that we need to embrace our "agricultural heritage." Whether the reader buys this idea or not, *Fatal Harvest* succeeds in pushing people to question the story behind their food and the illusion of choice advertised by the industry.

According to the authors, the lack of bio-diversity in agriculture today is a direct result of agribusiness' desire to create a "monoculture." The idea of "monoculture" describes the manner in which large corporations seek to suppress diversity of products by advertising the benefits of having the choice of only a few. The section entitled "Corporate Lies" effectively breaks down the numerous ways in which corporate advertisement can fool the public into accepting this "monoculture."



In the section that compares the "industrial eye" to the "organic eye," the book reveals the negative aspects of buying or supporting specific mass-produced agricultural products. However, in the extensive section entitled "Learning to See What You Are Looking At," it becomes quite clear that the average consumer or businessperson simply may not care about the beneficial aspects of organic farming due to the inexpensive nature and more aesthetic appearance associated with mass-produced products. The authors are successful at painting a more pleasant picture of organic farming practices and of the tastiness of organic tomatoes or soybeans, but the question must be posed whether or not *Fatal Harvest* will effectively influence the consumer's or farmer's mindset and actions. The book takes up a huge challenge as it assumes that the reader is an open-minded, thoughtful individual.

In the section entitled "Revisioning Agriculture for the 21st Century," the authors present the current problems within agribusiness through a critical lens, calling for the public to take back democracy and voice their concern for corporate responsibility. To the activist, *Fatal Harvest*'s call to action may appear realistic and inspiring, but will definitely pose a serious challenge to the average consumer who simply may not be ready to surrender their attachment to TV dinners and Campbell's soup.

Fatal Harvest is a book that should be read by everyone—both businessperson and activist. Its comprehensive expositions and detailed, historical accounts are effectual in pushing the average person to curb their consumer habits in the direction of supporting organic products. Furthermore, the book encourages a sense of responsibility on the average citizen to take advantage of the little democracy left and voice their opinion against corporations and private industry influencing government policies. Even if the reader is not inspired to create sustainable change, *Fatal Harvest* will serve as a brilliant mechanism in arming the public with knowledge and terminology.

Support Beyond Pesticides by purchasing this book through Beyond Pesticides' website under Publications. With every purchase, Beyond Pesticides receives a donation. For more information on Fatal Harvest, *see www.fatalharvest.org or contact the Center for Food Safety, 660 Pennsylvania Ave., SE, Washington DC 20003, 1-800-600-6664.*

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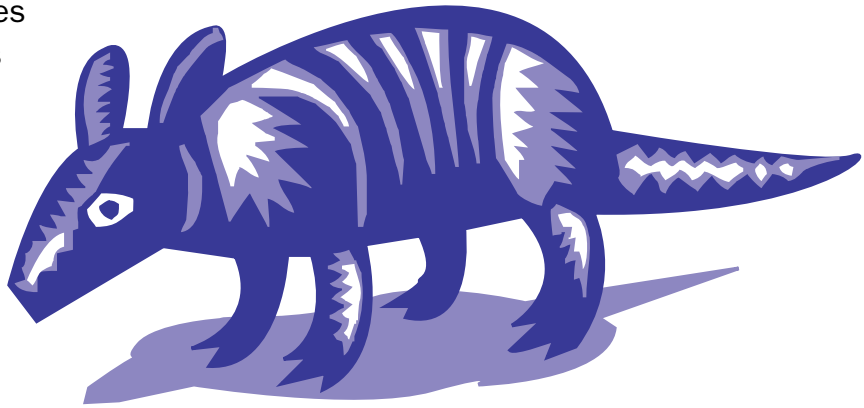
21st National Pesticide Forum

Join us in Austin, Texas for the 21st National Pesticide Forum: Toxics in the Age of Globalization April 25-27, 2003

Mark your calendars now! Beyond Pesticides will be hosting the 21st National Pesticide Forum, **Toxics in the Age of Globalization**, on Friday, April 25th through Sunday, April 27th at the University of Texas at Austin.

The Forum will focus on adopting alternatives to protect our children and communities from the toxic hazards of pesticides, as well as the challenges the pesticide reform movement faces in a global business, policy and ecology context.



Brochures and registration forms will be mailed this winter. For more information or to make suggestions, contact John Kepner, Forum Coordinator at 202-543-5450 or jkepner@beyondpesticides.org. For details visit www.beyondpesticides.org/forum.

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