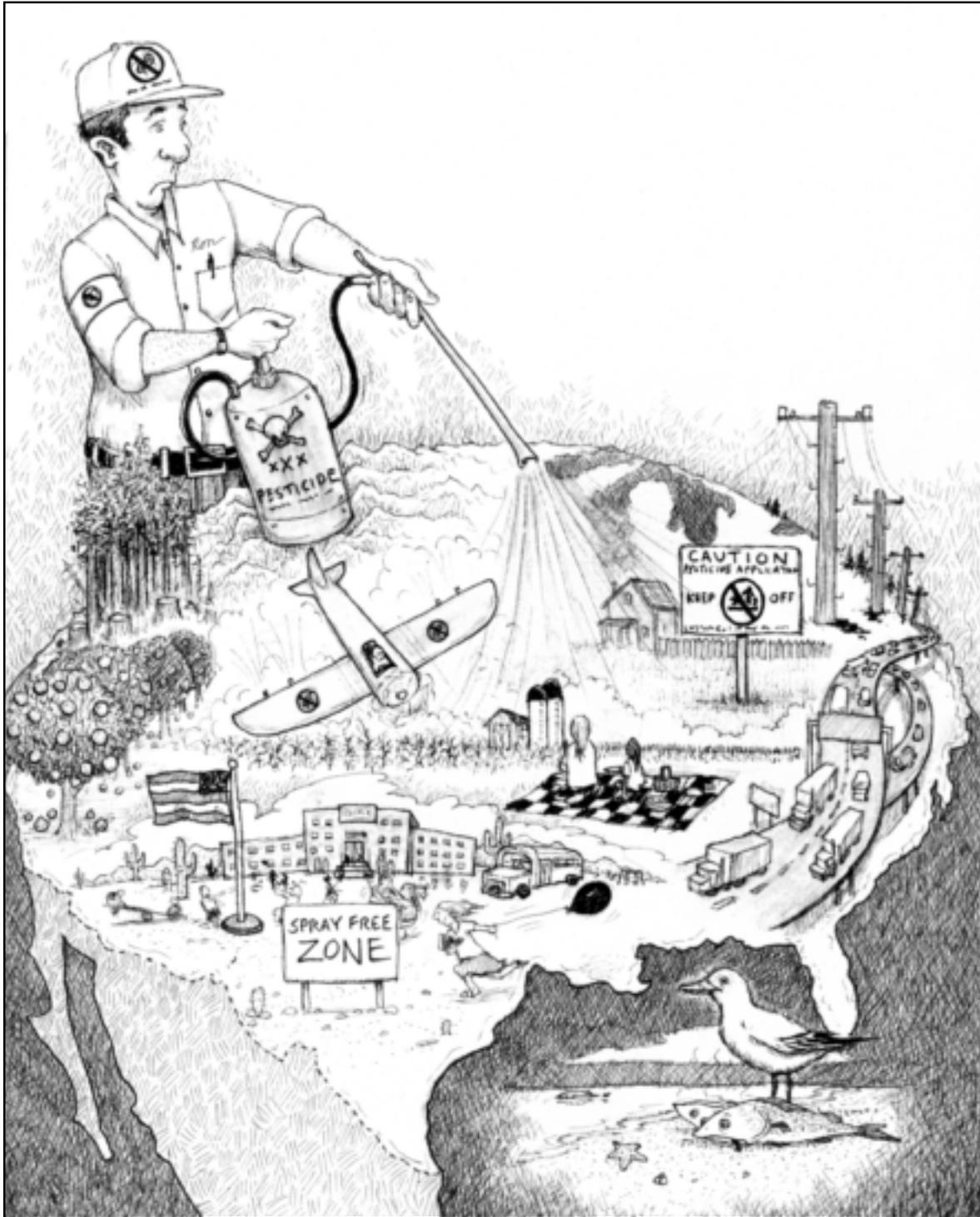


Pesticides and You

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



The Schooling of State Pesticide Laws

Review of State Pesticide Laws Regarding Schools

Building State Pesticide Policy to Protect Children, Call for a National Standard

The variety of state statutes regarding the protection of children at schools is almost mind boggling. They vary from good to bad and from somewhat comprehensive to incomprehensible. While 29 states have taken some legislative action, 21 have taken no statutory action. Of the 29, only 16 states address indoor use of pesticides. Less than one-third of all the state legislatures have decided that children are important enough to take a special look at how pesticides are used in the schools. The federal government is silent.

All of this information is detailed in a new NCAMP report, *The Schooling of State Pesticide Laws*, contained in this issue of *Pesticides and You*.

At NCAMP, we are often asked, “How is our state doing when compared with others?” or, “Which state offers the best protection?” When the Governor of Maryland sat down with environmental, labor, public health and education leaders on school pesticide legislation in the state last year, he asked us how the proposed legislation compared with other states. Not an unreasonable question. Another question we often get is why doesn't the federal government provide this basic level of protection or right-to-know? Also, a good question.

To better answer the state questions (I'll take on the federal government question after these), we began updating our files and analysis of the states' pesticide laws this summer. Our analysis of state pesticide laws regarding pesticides and schools evaluates five categories: buffer zones, posting of signs, written notification, integrated pest management (IPM), and the prohibition of certain uses. Certainly, all of these categories should be addressed if a state law is to fully and comprehensively protect children from pesticides while at school. While we describe each category in the report and while many states have addressed many of these categories, no one state addresses all the categories fully.

Clearly, what a state law says in these five categories is only part of the larger issue. The report does not evaluate the implementation or enforcement of these laws. That is a next and much needed step. In fact, there most certainly are state administrative programs that grow out of generalized statutory language that addresses some or all of these categories. Local governments and school districts have also taken it upon themselves to provide protection not

provided by their state or the federal government. It is our belief, however, that sound pesticide law should, where possible, be codified in state statute to give it more permanence and protection. These laws should serve as a floor, providing an opportunity for localities to exceed these standards when they deem it necessary.

From a community perspective, the first step to better protection is knowing the law. The second is making sure that it is enforced. If the law is deficient, knowing the law may be cause for changing or improving it. Our goal here is to spark new discussions in the states and assist existing ones to move along.

As you consider the variety of laws and the range of protections, you cannot help but wonder why the federal government does not provide the most basic of protections—the protection of children while at school. Incredible, but true. When EPA's Lawn Care Pesticides Advisory Committee, of which I was a member, met in the early 1990's, the environmental and public health groups on the committee supported a mandatory national standard for posting and notification of lawn care pesticide applications that would not prevent states from setting higher standards. No, the proposal did not go anywhere, but that is what is needed here – a national standard to protect children from pesticides at school.

Without a doubt, NCAMP will continue to support local action, community-by-community, state-by-state, to adopt standards that protect children at school. However, it is unconscionable that the federal government sits on the sidelines while children go unprotected.

We will be issuing additional reports that track state laws regarding other aspects of pesticide restriction and use, such as structural pesticide use and rights-of-way. Please contact us to let us to let us know what your state is doing (good or bad) and what you think others should know about.



— Jay Feldman is Executive Director of NCAMP

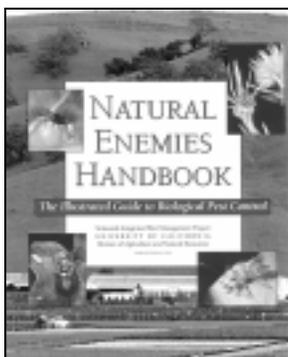
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Activists in Minnesota Meet NCAMP

Dear NCAMP,

It was so great to meet you [at the NCAMP Board of Directors meeting in October]. I have been a NCAMP member for many years and use your materials, data, and articles so often in our mailings! It is good to connect now and then; it sometimes feels like I am all alone "out there," trying to convince the public of the outrageous practices in uses of pesticides. I realize after seeing and meeting those great people doing the same thing - we are not alone!!

Bette Kent

Minnesota Herbicide Coalition



Dear Ms. Kent,

It was great to finally meet you also. We know that you have been a member of NCAMP almost since its inception in 1981. The meeting in Plymouth, Minnesota, hosted by NCAMP board member Tessa Hill, president of Kids for Saving Earth Worldwide, proved to be a success. The NCAMP Board enjoyed sharing ideas and strategies with you and local activists, and learning first-hand what everyone is up to. We are glad that we could bring together local activists working on pesticide issues and hope that some important synergy results. As you know, organizing with others is the key to success. The materials that you put out are terrific tools for change and we're delighted you put NCAMP materials to such great use!

Marching to Prevent Cancer Through the Reduction of Toxics

Dear NCAMP,

The recent cancer MARCH in Washington got quite a bit of coverage in Sunday's

newspapers (9/27/98) and for good reason. The incidence of most cancers continues to escalate among all ages, ethnic groups, and both sexes. We continue to invest billions upon billions into research and still come up empty handed. The elusive cure always seems to hide stealthily out of reach. Other headlines appearing on the same day read:

"PCB warnings inadequate..." "Air standards cheered in Northeast, jeered in Midwest," "Environmental group sues state over chlorine discharge at Belleayre." We continue to lose millions of lives to the enemy while spending billions of dollars in our feeble attempt to eliminate its presence from afflicted patients. The more money we spend on cancer research, the greater seems to be the incidence of cancer in our society. In a real war it would seem that a change in tactical maneuvering would be in order. Maybe the time has come for us to look in the direction of cancer prevention. If the old saying still holds true, "an ounce of prevention is worth a pound of cure," imagine how many lives and dollars could be saved and how much pain and suffering could be avoided. The new millennium will soon be upon us. It may be up to the health consumer to push for a change in attitude in cancer research with more emphasis on prevention than detection. Consumers vote with their dollars. Just as complementary and alternative health practices are making inroads into mainstream health care, so too can consumers push their legislators and health care providers to take a closer look at environmental risk factors associated with immune dysfunction, genetic damage, tumor initiation and promotion. One holistic practitioner has described a tumor as the body's waste dump for storing excess toxins. If we can succeed in reducing environmental toxins, perhaps we will be re-



Beth Fiteni (left) and Kagan Owens (right) created and staffed the NCAMP booth for THE MARCH: Coming Together to Conquer Cancer on September 26, 1998.

warded by a reduction in cancer incidence. What have we got to lose?

Rose Marie Williams (Pres.)

and Helena Baldyga (V.P.)

Cancer Awareness Coalition, Inc.

New Paltz, NY

Dear Ms. Williams and Ms. Baldyga, Thank you for your letter. NCAMP participated in THE MARCH: Coming Together to Conquer Cancer event on September 26, 1998 in Washington, D.C. A main focus at the MARCH was funding for research. Certainly, finding a cure and reducing suffering from this horrible disease are necessary goals. However, dealing with the cancer issue is a two-part effort. We agree with you. We need to pay more attention to the cause of the cancers that almost half of all Americans will fall victim to during their lifetimes. We already know that certain toxic substances regularly released into the environment are carcinogenic to humans and laboratory animals, so part of the solution to the cancer epidemic is pollution prevention. NCAMP's table at the MARCH, entitled "Pollution Prevention is the Cure," was inundated with supporters of our mission: to reduce carcinogenic pesticides in our homes, schools, and in agriculture. We met many, many people who were happy to see a group such as NCAMP at the MARCH distributing information on alternatives to toxic pesticides. We even carried our banner, "No Cancer-Causing Pesticides In Our Food," at the MARCH and our message made the Washington Post national

news. The next NCAMP conference, co-sponsored by the statewide California group Pesticide Watch, has taken the title "Pollution Prevention is the Cure." It will be held in Santa Barbara, CA on May 14-16, 1999. Hope you can join us!

Looking for Lawn Care Alternatives to Protect Pre-Schoolers

Dear NCAMP,

The St. James Preschool is a private, part-day preschool, sponsored by St. James Episcopal Church. Currently, the church has a contract with a lawn maintenance company that uses herbicides and fertilizers on a regular basis. Because the preschoolers, as they play, are more likely to come in contact with these toxins, the Board of Directors is researching organic lawn care options. Can you help?

Melanie Vangsnæs
Chair, St. James Preschool BOD
Leesburg, VA

Dear Ms. Vangsnæs,

Thank you for contacting NCAMP on alternatives to pesticides. It is essential that we eliminate our children's exposure to pesticides. Of the 36 most commonly used lawn pesticides: 13 can cause cancer, 14 can cause birth defects, 11 can cause reproductive effects, 21 can damage the nervous system, 15 can injure the liver or kidney, and 30 are sensitizers or irritants. Children are particularly vulnerable to pesticides because they are still developing and more active than adults, and because they take in larger quantities of air and food than adults relative to their size. Thus, they receive a higher dose of toxins per pound of body weight. Not only do younger and smaller people by nature receive a higher dose of toxins, children have a decreased ability to eliminate toxins and their target organs may be more sensitive to toxic effects. This issue of PAY reviews the issues and the activities that are taking place in states across the country to protect children.



The best way to control lawn pests is to maintain a healthy, vigorous soil and lawn that can resist pest problems on its own. This can be achieved by developing healthy soil, planting well-adapted and pest resistant grass varieties, aerating the lawn regularly, not allowing too much thatch to build up, maintaining proper soil pH and fertility, keeping the lawn properly watered, and mowing the grass with sharp blades set as high as possible. To keep ahead of the pest problems, it is important to monitor the lawn weekly. When pest problems occur at a level that cannot be tolerated, choose the least toxic method available to combat the problem. Please see NCAMP's brochure, Least Toxic Control of Lawn Pests and our information packet on the subject.

1999 Conference in LA

Dear NCAMP,

Hello from Los Angeles! We're pretty excited about having next year's national conference here. We take walks through our neighborhood and it's amazing how many pesticide atmospheres we run into. It's not enough that we buy organic and keep our own premises clear of toxics. We have a hard time with the prevailing use around us. Our bodies are dosed with "medicines" without our consent and substantially beyond our control. The future belongs to the reservation of all these chemicals for use against plague and emergency (catastrophic) epidemics. Our current policy will deny us this ability in the future. How glad we are for the people of NCAMP and their efforts on behalf of us all. Things have been absolutely wild for the last couple/several

months in the efforts to bring safe pest management practices to the Los Angeles Unified School District (LA USD). You should be very proud of the LA Safe Schools Coalition. These folks have been in amazing contact with school board members, local reporters, California Department of Pesticide Regulation, muck-raking lawyers, Pacifica radio, PTAs, etc. and are really stirring things up.

John Nelson
Los Angeles, CA

Dear Mr. Nelson,

Great job! We are all looking forward to the conference in southern California - see you there!



Write Us!

Whether you love us, hate us, or just want to speak your mind, we want to hear from you. All mail must have a day time phone and a 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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www.ncamp.org



EPA Releases for Public Comment Risk Assessments for 17 Organophosphate Pesticides

As the EPA and USDA continue with their Tolerance Advisory Reassessment Committee (TRAC) agenda to implement the *Food Quality Protection Act* (FQPA), they have attempted to begin the phaseout process for organophosphate chemicals which are believed to be the most toxic pesticides currently used in food production in the U.S. At the first TRAC meeting in late May 1998, EPA Deputy Administrator, Fred Hansen, who has since left the agency, announced that EPA had already completed 40 preliminary risk assessments on organophosphates and that they would be released by name at the next meeting in July. The agency, however, decided to keep both environmentalists and the industry at the edge of their seats for two more months. Finally, on August 12, 1998, the first nine were published in the *Federal Register* for comment: azinphos-methyl, bensulide, ethion, fenamiphos, isofenphos, naled, phorate, profenofos, and terbufos. On September 9, 1998, the next seven were released, including ethoprop, tribufos, sulfotep, temephos, dimethoate, cadusafos, and fenthion. The comment periods for these 16 have now passed, and NCAMP submitted comments on each set. However, the risk assessment for methyl parathion has now been re-



leased, and comments are due by February 15, 1999. The environmental fate and ecological assessments for temephos, ethoprop, and terbufos are also now open for comment, as only the human health assessments had been released before. After discussing the phaseout of the most harmful organophosphates, the agency's next priority turns to carbamate pesticides and other B2 (probable human) carcinogens. Though there were only scheduled to be four original TRAC meetings, two more TRAC meetings are scheduled tentatively for early 1999. The dates for the first meeting are February 25 and 26, 1999 at the Hotel Washington in Washington, DC. Dates for the second meeting are yet undetermined but will likely be set for late May. To view risk assessments and for information on where to comment, see www.epa.gov/oppsrrd1/op/. For more information on the TRAC and implementation of FQPA, contact NCAMP or see *Pesticides & You*, Vol. 18 #1-2, or contact Marjorie Fehrenbach, U.S. EPA, Office of Pesticide Programs, 703-308-4775, fehrebach.margie@epamail.epa.gov.

Bioengineered "Terminator" Seed Technology Gets USDA Approval

Just when you thought it couldn't get worse: the seed company Delta & Pineland (now merged with Monsanto) obtained a patent this March for a seed variety that will not germinate if re-



planted—with USDA approval. The new development, called "Terminator Seed Technology" thus prevents farmers from saving seed from one year to the next and developing seeds that are suited to the local environment. Right now, commercial seed companies own 30-50% of the world's seed supply, and companies are merging all the time. A USDA spokesman says that the goal is to promote these



seeds in developing countries, to increase the value of proprietary seed owned by U.S. companies. Farmers in these countries may be forced to use the seeds because of credit schemes and government restrictions. The Rural Advancement Foundation International (RAFI) is calling for a worldwide ban on this seed technology, and is asking governments to protect their seed varieties for the security of their food supply. Contact RAFI, 110 Osborne Street, #202, Winnipeg, Manitoba, Canada, R3L 1Y5, 204-453-5259, rafi@rafi.org, <http://www.rafi.org>.

171 of 612 Pesticide Reviews of Old Chemicals Completed (Sort of)

EPA released its Pesticide Reregistration Progress Report for 1997, which revealed that of the 612 chemicals originally under review to comply with modern safety standards, 171 are completed (sort of), 231 of the requested reviews have been cancelled by the registrants, and there are 210 more to do. The agency predicts the completion of all Reregistration



Eligibility Decisions (REDs) by the year 2006. The chemicals were originally slated for review in 1972 under FIFRA, and then the review standards were extended in 1976, repealed in 1978, and reinstated in 1988. The report says that chemicals used on foods reviewed before the 1996 FQPA will be revisited. It is important to note that many of these REDs are not true assurances of a complete data set. REDs are sometimes issued for chemicals even though more data is required. Seventy of the 171 completed REDs are associated with chemicals with food uses. About 1,569 food tolerances of an existing 9,635 have been reassessed. In this report, EPA acknowledges the high risk of organophosphates and explains why it is prioritizing those along with carbamates and B2 (probable human) carcinogens. The report also highlights chemicals that are under special review, which are chemicals that exceed acceptable risk criteria, due to acute and chronic toxicity, for example. The report states that the EPA prefers to enter into negotiations with the regulated industries instead of taking a traditional regulatory approach, in order to cut down on risk from chemicals under special review. For a copy, contact the Na-

tional Center for Environmental Publications and Information, P.O. Box 42419, Cincinnati, OH 45242, 800-490-9198, or see <http://www.epa.gov/pesticides>.

EPA Weakens Adverse Effects Reporting by Chemical Companies

On August 4, 1998, EPA reversed itself on a decision regarding the extensiveness of the adverse effects information required to be submitted to the agency by chemical companies. Adverse effects reporting on pesticide chemicals is subject to section 6(a)(2) of the *Federal Insecticide Fungicide and Rodenticide Act*. A new rule on adverse effects reporting was slated to take effect in June,

but implementation was delayed until August 1998. The rule required that chemical registrants disclose any reports of acute toxicity, as well as any chronic or delayed effects. Deaths must be reported within 15 days. As of now, registrants do not have to relay the information in the "may suffer" (in the future) category. This resulted from complaints from the chemical industry at several meetings with the agency this Spring. The industry says it does receive calls from the public regarding pesticide products, but only a minority of them would be useful to the agency for the purpose of protecting public health. Formerly, EPA said it recognized this but wanted the information anyway. Now, in a decision made without any public notice and comment, registrants have at least one year to come into compliance with the new chronic/de-

layed requirements. Contact Kate Bouve, 6(a)(2) Officer of the Office of Pesticide Programs, U.S. EPA, 401 M Street, SW Washington, DC 20460, 703-305-5032.

Methyl Bromide Phaseout Delayed Four Years

The Clinton Administration has delayed the phaseout of methyl bromide from its original 2001 goal to the year 2005. The 2001 goal was mandated under the *Clean Air Act*. The reasoning behind the postponement is to make the phaseout consistent with the international treaty called the Montreal Protocol and to prevent other countries from having an economic advantage over the U.S. The

Treaty also scheduled for interim cutbacks of 25% in 1999, 50% by 2001, and 70% by 2003. The delay language was introduced by Rep. Vic Fazio (D-CA) as a rider on to the Fiscal Year 1999 agricultural appropriations bill. Several European countries have already opted to ban the dangerous chemical, and alternative treatments have been found effective in nine out of ten cases. Air samples in California find methyl bromide at levels which exceed state safety requirements in farming areas, and the chemical

has been linked in California to thousands of poisonings as well as several deaths. Contact Kristin Schafer, Pesticide Action Network North America Regional Office, 49 Powell Street, #500, San Francisco, CA 94102, 415-981-1771, kristins@panna.org.



USDA Releases "Issue Papers" and Delays Release of Proposed Organic Rule

On October 25, 1998, USDA published three Issue Papers in the *Federal Register* regarding the upcoming proposed organic rule in order to allow for public input into the process. Unfortunately, as a result, the rule was not finalized by January 1, 1999 as promised. The specific issues raised in the Papers reference back to the first proposed organic rule released in December 1997, which elicited thousands of negative responses from organic producers and consumers and thus was retracted. The National Organic Standards Board (NOSB) met on October 27-28, 1998 to discuss the various options proposed by the USDA in each Issue Paper.

The first issue pertains to farmed animal confinement, and whether it is acceptable for certain exceptions such as inclement weather, protection from predators, and for attending sick livestock. Also at issue is whether organic animal products should be allowed to display additional label claims such as "free-range" or "pasture raised." The second issue deals with the use of antibiotics and parasticides in animals being raised organically. The options here include a use prohibition on all animal medications, or allowing therapeutic use of animal

medications under certain animal health conditions. The National Organic Standards Board (NOSB) supports the former option, after several changes in its position. The third issue covers the termination of certification authority for private certifiers and considers various methods of handling enforcement of organic standards. Comments on the Issue papers were due December 14, 1998. NCAMP worked with the Organic Farmer's Marketing Association to produce a comment form that was distributed widely to organizations and activists.

Overall, while participating groups do appreciate the ability to comment during USDA's development of the next rule, many activists view these papers as a delay in the process, since these issues have already been under discussion since the passage of the *Organic Foods Production Act* in 1990. NCAMP's Jay Feldman addressed the NOSB at its October meeting to support a rejection of synthetic inerts and a prohibition on animal medicines except for those which meet National List criteria. At this time, it is unknown when the proposed rule will be published for comment in the *Federal Register*. Contact NCAMP.

Intern Reflects on NCAMP Experience

"Kagan, where would I find...", "Beth, can you tell me how to...", "Jay, there's someone on the phone who..." These were the most common phrases from my summer internship, except for, "Hello, this is NCAMP. Can I help you?" With a small staff, I was allowed to jump right into the middle of all of NCAMP's activities (quite overwhelming at first!) My entire summer was spent quickly learning about chemicals, alternatives, regulations and the government. I did not even realize how much I had learned until I was able to stop and reflect back on the experience. My eyes have been opened to just how many lives are ruined or altered by exposures to pesticides

— anyone who believes differently should come and answer the phone at NCAMP for a week! I felt extremely satisfied when I was able to help someone who desperately needed information, ideas or support. Frustration was also a part of the experience on occasions when I could offer little or no help to someone with a pesticide caused problem. I witnessed firsthand the industry influence over EPA and lack of action from the government in the area of pesticide regulation while



attending the EPA/USDA Tolerance Re-assessment Advisory Committee meetings and work group sessions. Because I was at the center of all the action at NCAMP I feel like I have truly experienced an environmental interest group at its core. Somehow, among all the office chaos, constant ringing of the phone, minor crises and major accomplishments, I discovered that working for the environment will be a lifetime priority and hopefully my career.

Kara King is a senior at the University of Kansas. She is majoring in Environmental Policy and will graduate in May of 1999. Kara plans to pursue a career in the environmental field after receiving her degree. NCAMP welcomes interns at any time. Contact us for details.

Airlines Spray Planes with Pesticides, Even for Domestic Flights

Some major American airline carriers spray pesticides on domestic flight airliners, according to the July/August issue of *Mother Jones* magazine. Passengers used to be subjected to spraying while seated in the cabin, but now spraying only takes place on empty planes as they await flight in the hangar. However, as air is recycled throughout the cabin, travelers may still be breathing in significant doses of airborne pesticides. Among the companies that acknowledged regular or occasional spraying are US Airways, American, Delta, Continental and TWA, though they would not reveal which chemical they use. Use of spray is merely a preventive measure; no airlines reported to *Mother Jones* an actual pest problem, and there is no federal law that requires it. As for international flights, certain countries still require the spraying while passengers are on board, but this practice has been reduced dramatically from twenty-five countries to only four. This reduction is partially due to the work of then-Secretary of Transportation, Frederico Pena, who wrote letters to all the Transportation Ministers around the globe requesting them to cease this practice. Fifteen countries still require spraying of planes before flights, usually with permethrin—a neurotoxin and possible carcinogen. Critics say that traps should be used instead of chemical sprays to reduce public health risks. *Contact NCAMP.*

Misleading and Deceptive Pest Control Ads Found in Phone Book's Yellow Pages

MaryPIRG investigated the advertising practices of pest control operators in Maryland and found 29 companies whose ads could mislead customers into believ-

ing that chemical treatments are “safe.” Some of the ads even state the treatments are specifically safe for homes with children and pets. One pest control operator, who retracted his ad once he heard of MaryPIRG's campaign, said he feels the treatments are safe—relative to longer-lasting chemicals that he used to apply in the past. The office of the MD Attorney General, Joseph Curran Jr., says it will pursue an investigation of the ads, if necessary. On an encouraging note, some of the ads state that integrated pest management (IPM) is available. Though IPM is not a completely toxic-free approach, if properly implemented, it can significantly reduce pesticide use. *Contact MaryPIRG, 3121 St. Paul St., #26, Baltimore, MD 21218, 410-467-0439, <http://www.pirg.org/marypirg>.*

Great Progress on Alternatives to Pesticide Use in Upstate New York

In both Albany and Monroe Counties, New York, activists' pressure to convince their towns to reduce pesticide use has recently been successful. In Albany, county officials voted in June 1998 to phase out pesticide use within three years. Albany's plan is to start off by phasing out the worst chemicals first. Environmental Advocates, NYPIRG, and NY Coalition for Alternatives to Pesticides (NYCAP) all were active in helping to pass the legislation, and the latter two will be represented on the committee that is developing the town's pest management plan. In Monroe County, the Department of Transportation decided to work with residents to find alternative methods of pest control along roadsides. This set a good example for the town government, which also sprays roadsides, and the town—after some reluctance—agreed to stop spraying herbicides along roadways, scuttling plans to

move ahead with a \$65,000 spray plan for roadsides. Since chemical methods are generally less labor intensive than mechanical methods, the benefit to both counties is not only in public health but also in new jobs. *For Albany, contact NYCAP, 353 Hamilton Street, Albany, NY 12210, 518-426-8246, nycap@crisny.org, for Monroe County, contact Rochestarians Against the Misuse of Pesticides, 50 Landstowne Lane, Rochester, NY 14618, 716-383-1317.*



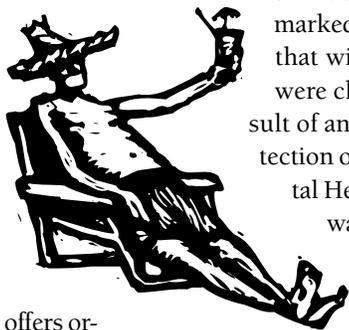
Dow Worker Death in Michigan Linked to 2,4-D Exposure

Twenty-nine year old James Keeley was washing a pipe with hot water at the Dow Chemical plant in Midland, MI, when a crack in the pipe leaked 2,4-D on to his arm and leg. Though Keeley rushed to the shower to decontaminate himself, he collapsed and was taken to a nearby hospital where he was pronounced dead shortly afterwards, according to the *Midland Daily News*. Co-workers who witnessed the incident said they could smell the chemical and called the emergency response crew immediately. A spokeswoman for Dow says Keeley had safety training and was not wearing the proper gear when the accident happened. She also said he neglected to sign a required permit prior to doing the cleaning. The event is definitely a wake-up call for the company and thus safety training will be increased for all workers, but no effort is being made to reduce the production of the chemical, which is a known carcinogen and nervous system toxin. *Contact NCAMP.*

Environmental Resort for the Chemically Sensitive Opens in Florida

A new resort has opened in South Melbourne Beach, FL and advertises itself as specifically serving people who suffer

from multiple chemical sensitivity or Gulf War Syndrome. It is often difficult for chemically sensitive people or others seeking a clean environment to find lodging when traveling, but there is now a place called "Pride & Joy Environmental Resort." The owner of the resort, which opened in October 1998, Val Gaccione, is chemically sensitive herself. The resort features a non-chlorine pool, tile floors, all non-fuming and non-toxic cleaners, and has taken extra precautions against irritants from bedding (it offers organic cotton beds), curtains, carpets, and furniture. It is located next to the beach, and is about a one hour drive from both Disney World and the Kennedy Space Center. There are nine one-room apartments. A one week stay costs \$700. If you check the place out, please let us know what you think. For more information, contact Pride and Joy Environmental Resort, 5685 South A1A Highway, South Melbourne Beach, FL 32951, <http://www.pridejoyresort.com>, 407-733-7804.



Research on Pesticides and Children Around the Country Funded by Gore Initiative

Vice President Al Gore announced federal grants for eight "Centers of Excellence in Children's Environmental Health" around the country on August 10, 1998. These centers will investigate the effects of pesticide exposure on children as well as the causes of childhood asthma. The grant money, which totals \$10.6 million, is a combined grant from the Environmental Protection Agency and the Department of Health and Human Services. As reported in the *Los Angeles Times*, the eight centers are: University of Michigan School of Public Health, University of Iowa College of

Medicine, University of Southern California and UCLA, University of CA-Berkeley,* Johns Hopkins Children's Center in Baltimore, University of Washington Department of Environmental Health,* Columbia University School of Public Health, and Mount Sinai School of Medicine in New York.* (Those marked with an asterisk are the three that will focus on pesticides.) They were chosen to do this work as a result of an Executive Order on the Protection of Children from Environmental Health Risks, No. 13054, which was issued by President Clinton in 1997. This Order calls for improved research in the area of children's environmental health. Gore expressed concern about increased respiratory problems related to greenhouse gasses and smog, and said, "Our children are our most precious resource, and we must do all we can to provide them with a safe, healthy environment." Contact Elaine Koerner, Senior Liaison Specialist, MC1702, U.S. EPA Office of Communications, 401 M Street, SW, Washington DC 20460, 202-260-2623.

AT&T Employees in Georgia Evacuate Building After Dursban Application

For four days, workers at the DeKalb, GA AT&T building were reporting symptoms of nausea and difficulty breathing to the staff doctor after the building was treated for insects with Dursban (chlorpyrifos). The company finally called 911 when nine workers complained to the doctor about the odor. Ten people were removed for treatment at a local hospital, and emergency technicians arrived to treat twelve more. One woman said that an odor could be detected throughout the building, and that she began to break out in a rash. One spokesperson for AT&T said that the building's carpets were also cleaned that

week, "to get the spray out." The chief of the DeKalb County fire services says no one is sure whether the respiratory problems were caused by the Dursban alone or a combination of the Dursban and the carpet cleaning agent. This was the fourth time this month that the building was treated for insects. Contact NCAMP.

New York's American Museum of Natural History's Biodiversity Exhibit Opens with Monsanto's Sponsorship

The American Museum of Natural History, praised for a new exhibit on biodiversity, has found itself in the middle of a controversy over one of its corporate sponsors, the Monsanto Company. Monsanto has been criticized by environmentalists because of its marketing of genetically modified organisms (GMOs), which are said to threaten biodiversity. Jean Halloran, with the Consumer Policy Institute in New York, says, "Monsanto's sponsorship is a PR job and hypocritical considering the potential harm of gene pollution associated with the company's products." She points to the contradiction in Monsanto exclaiming the safety of genetic engineering while refusing to label its products, thus making it difficult to attach liability to the company should problems arise. While the exhibit does not mention biotechnology at all, Monsanto ran a 12-page pullout section in the *New York Times* in June announcing the exhibit, with an advertisement extolling the virtues of biotechnology. The Museum contacted NCAMP to obtain copies of the group's pamphlet on food safety and the exhibit seeks to give visitors tools for change. A "Solutions Hall" consists of five alcoves that demonstrate successes in conservation. Contact the museum at 212-769-5742, email biodiversity@amnh.org, or see website at <http://research.amnh.org/biodiversity/>.



The Schooling of State Pesticide Laws

Review of State Pesticide Laws Regarding Schools

By Kagan Owens and Jay Feldman

The state of public health and environmental protection from pesticides is deficient. Children, as a subpopulation, are among the least protected. The federal regulatory system, since the publication of *Pesticides in the Diets of Infants and Children*¹ in June 1993, is just beginning to consider the special vulnerabilities of children. It remains to be seen whether the *Food Quality Protection Act* (FQPA), passed in 1996, will adequately address children. At this point, EPA generally lacks data on children and has failed to adopt the tenfold additional safety margin in the statute, provided for situations where data on children is not available. Less than a dozen out of 91 tolerances set since the passage of the FQPA have used the tenfold safety factor for children in their risk assessments. EPA standard setting is bogged down in discussion of exposure assumptions and margins of safety. Meanwhile, state governments have, in some cases, attempted to step into the breach by regulating pesticide use and in some cases type of pesticides used.

What are states doing and is their action sufficient to offer the level of protection truly needed? In a series of reports over the year, NCAMP is reviewing the states' laws on pesticides. In this piece, we look at issues that specifically pertain to schools, including: (i) restricted spray (buffer) zones to address chemicals drifting into school yards and school buildings; (ii) posting signs for indoor and outdoor pesticide applications; (iii) prior written notification for pesticide use; (iv) prohibiting when and where pesticides can be applied; and, (v) requirements for a strong integrated pest management (IPM) program that limits the use of certain toxic materials. These are essential ingredients in a program to protect children from pesticides at school.

One might ask, why doesn't the federal government offer some minimal standards regarding the right-to-know when pesticides are being used in schools, protection from pesticide drift in school yards, requirements for least toxic integrated pest management, and special protection for children?

These are all basics not provided for under federal law. It represents a serious failure of EPA and one that reflects a politicized decision making process at the agency. Without minimum federal standards in these areas, the protection provided children is uneven across the country. Just over half of the states, or 30 states, have adopted pesticide acts and regulations that address the protection of children by specifically focusing on pesticide use in, around or near their schools. Of these, only 16 states address indoor use of pesticides.² This review is intended to determine what each state is required to do under its statutes and regulations. It does not evaluate the enforcement or quality of the program that may be in place. This report does not fully examine all the administrative materials that have been developed. Rather it illustrates the state laws themselves and the requirements established.

Fed Allows State and Local Authority; 40 States Preempt Local Powers

And so, the role of states and local jurisdictions is absolutely critical as a means of exerting a level of protection that children deserve. The role of states is well established. There are no federal prohibitions on states exceeding the federal standards. States have the authority to regulate the sale or use of pesticides as long as the state regulation does not permit a sale or use prohibited by section 24(a) of the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA), USC 136v(a). The authority of local governments is a different story. While the chemical industry had argued for over a decade in the 1980s that FIFRA prohibits local regulation of pesticides, the U.S. Supreme Court affirmed the rights of cities and towns to regu-

Just over half of the states, or 30 states, have adopted pesticide acts and regulations that address the protection of children by specifically focusing on pesticide use in, around or near their schools. Of these, only 16 states address indoor use of pesticides.

late pesticides under FIFRA. The court found on June 21, 1991 that FIFRA “leaves the allocation of regulatory authority to the ‘absolute discretion’ of the states themselves, including the option of leaving local regulation of pesticides in the hands of local authorities.” However, since the Supreme Court ruled, 40 states (*see chart*), whose legislatures have been subject to chemical industry lobbying, have acted to preempt local authority to regulate pesticides. This prohibition of local laws has always been viewed by NCAMP as antithetical to public health protection and local police powers (such as smoking ordinances, building codes, etc.). However, despite attempts to squelch local action, increasingly local governments and other public bodies with land holdings, such as school districts, have chosen to adopt policies providing notification of pesticide spraying and alternative approaches to pest management. In these cases, the school board or town government is acting as a property owner in what many believe is the best interest of children.

State governments can and, in some cases, do play a leadership role in protecting the public from pesticides. This piece, based on a review of the current state pesticide laws, looks at what the states have done as it affects children and schools.

The Case for Protecting Children

Children are especially sensitive to pesticide exposures. Children take in more pesticides relative to body weight than adults and have developing organ systems that are more vulnerable and less able to detoxify toxic chemicals.³ Low levels of pesticide exposure can adversely affect a child’s neurological, respiratory, immune and endocrine system. One of the most com-

Table 1. States that preempt local governments from regulating pesticides.

| | | | | | | | |
|-------------|-----|---------------|-----|----------------|------------------|----------------|------------------|
| Alabama | Yes | Indiana | Yes | Nebraska | Yes | South Carolina | Yes |
| Alaska | No | Iowa | Yes | New Hampshire | Yes | South Dakota | No |
| Arizona | Yes | Kansas | Yes | New Mexico | Yes | Tennessee | Yes |
| Arkansas | Yes | Kentucky | Yes | New Jersey | Yes ¹ | Texas | Yes |
| California | No | Louisiana | Yes | New York | Yes | Utah | No |
| Colorado | Yes | Maine | No | Nevada | No | Vermont | No |
| Connecticut | Yes | Maryland | No | North Carolina | Yes | Virginia | Yes |
| Delaware | Yes | Massachusetts | Yes | North Dakota | Yes | Washington | Yes ² |
| Florida | Yes | Michigan | Yes | Ohio | Yes | West Virginia | Yes |
| Georgia | Yes | Minnesota | Yes | Oklahoma | Yes | Wisconsin | Yes |
| Hawaii | No | Mississippi | Yes | Oregon | Yes | Wyoming | No |
| Idaho | Yes | Missouri | Yes | Pennsylvania | Yes | | |
| Illinois | Yes | Montana | Yes | Rhode Island | Yes | | |

1 Local ordinances must be submitted for approval to the New Jersey Department of Agriculture.

2 Local ordinances must go to the Washington Office of the Attorney General for interpretation and approval. Generally, use restricted ordinances are not approved.

monly used insecticides in schools, chlordane (Dursban) is a nervous system poison. It poisons children by reducing the body's production of the enzyme cholinesterase, necessary to the transmission of nerve impulses, triggering a range of symptoms from nausea, dizziness, headaches, aching joints to disorientation and inability to concentrate.⁴ Other widely used insecticides, synthetic pyrethroids, stimulate nerves causing hypersensitivity and are associated with asthma. Many pesticides affect the immune system, which can result in increased problems with allergies, asthma, hypersensitivity to chemicals and a reduced ability to combat infections and cancer.⁵ Many in-



secticides, herbicides and fungicides are linked to cancer. The commonly used weed killer 2,4-D has been linked to non-Hodgkin's lymphoma in scientific studies of farmers.⁶ Studies show that children living in households where pesticides are used suffer elevated rates of leukemia, brain cancer and soft tissue sarcoma.⁷ The probability of an effect such as cancer, which requires a period of time to develop after exposure, is enhanced if exposure occurs early in life.⁸

Children's exposure to pesticides at school occurs as a result of applications made before children enter the building and sometimes while they are present. The chemical fills the air in the room and settles on desks, counters, shades and walls. Exposure occurs from breathing contaminated air or touching contaminated surfaces. The residues can remain for days and sometimes break down to other dangerous compounds.

Concerns about the known and unknown hazards of pesticide use, as well as deficiencies in the regulatory review process, have prompted a variety of legislative and administrative responses by states across the country. We must improve the protection of children from pesticide use in schools. The following is a tool for those advocating public policies that provide greater protection for children while attending school. Raising the level of protection across the nation to meet the highest possible standards is an important goal. Where a state offers protection not provided by your state, advocate for it. Where policies exist, make sure that they are enforced. Enforcement of existing pesticide laws is also critical and often the most difficult phase of community-based efforts. Both the

adoption of laws and ensuring their enforcement once adopted require vigilant monitoring and public pressure.

Restricted Spray (Buffer) Zones Around School Property

OVERVIEW

Pesticides move off the target site when they are sprayed, whether inside or outside. When sprayed outside, pesticides drift on to nearby property resulting in off target residues. Buffer zones can eliminate unconsented exposure from spray drift on to school property. As a result, states require buffer zones around schools. In order to adequately protect against drift, buffer zones should, at a minimum, be established in a 2 mile radius around the school's property. Aerial applications should have a larger buffer zone, at least 3 miles encircling the school. Buffer zones should be in effect at all times of the day. It is especially important, as the states below require, for spray restrictions to be in place during commuting times and while students and employees are on school grounds.

Six states have recognized the importance of controlling drift by restricting pesticide applications in areas neighboring a school. These states, Alabama, Arizona, Louisiana, New Hampshire, New Jersey, and North Carolina create spray restriction zones that range from 300 feet to 2½ miles. Only in the case of gypsy moth spraying does New Jersey require the largest buffer zone of 2 and 2½ miles, depending on the grade levels of the school. Otherwise, New Jersey sets a 300-foot buffer around schools. All five states require spray restriction zones for aerial applications. Only Arizona and New Jersey require buffer zones for both ground and aerial pesticide applications.

STATE REVIEW

Alabama Department of Agriculture and Industries Rules for Application of Pesticides by Aircraft, section 80-1-14-.07(8)(a), prohibits pesticide spraying from an airplane within 400 feet of school grounds.

Arizona Administrative Code, section 3-365(D), requires buffer zones around schools for applications of odoriferous pesticides profenofos, sulprofos, def, merphos and other pesticides with similar odoriferous characteristics. These types of pesticides are not to be sprayed within ¼ mile of a school or day care facility, whether ground or aerial application. This section also states that highly toxic pesticides cannot be applied within ¼ mile of a school or day care facility.

Louisiana Advisory Commission on Pesticides, section 149(B), restricts commercial aerial applications within 1,000 feet of any school grounds during normal school hours, with the exception of aerial mosquito control applications. Schools include, public or private, day or residential, and elementary to secondary schools.

New Hampshire Code of Administrative Rules, section 506.09, states that aerial applications cannot occur when children are commuting to and from school and when there is outdoor activity. This section also prohibits aerial applica-

tions in sensitive areas, including day care centers and school buildings and property, playgrounds and athletic fields. Distance to the school is subject to the aerial application permit.

 **New Jersey** Pesticide Control Regulations, section 7:30-10.3, states that community or areawide pesticide applications for the control of gypsy moths must not occur within 2 miles of a kindergarten through 8th grade school and within 2½ miles of grades 9 through 12, or when students are commuting to and from school. Section 7:30-10.5(q) restricts aerial applications 300 horizontal feet around any school property when people are on school property.

 **North Carolina** Administrative Code, Title 2, subchapter 9L, section .1005, prohibits aerial application within 300 feet of schools and cited buildings.

Posting Notification Signs for Indoor Pesticide Applications

OVERVIEW

States use different approaches in providing school pesticide use information to parents, students and staff. Some forms include the posting of notification signs and/or the distribution of notices directly to the affected population. Posted notification signs warn those in the school when and where pesticides have been or are being applied. This is a vehicle for basic right-to-know if the posting occurs in an area where it is easily seen by parents, students (old enough to understand, perhaps 12 or older) and staff. It is important to post signs for indoor pesticide applications because of the extensive period of time students and school

Signs posted days before, rather than simply at the time or just after a pesticide application, are more protective. Prior posting may enable people to take precautionary action. Because of the residues left behind after an application, signs should remain posted for at least 72 hours.

employees spend at school. Signs posted days before, rather than simply at the time or just after a pesticide application, are more protective. Prior posting may enable people to take precautionary action. Because of the residues left behind after an application, signs should remain posted for at least 72 hours. It takes time for pesticides to start breaking down and some pesticide residues can remain for weeks or more. Signs should also be posted at all main entrances of the building and the specific area sprayed, on the main bulletin board, and, for more comprehensive notification, in the school newspaper or on the daily announcements. Posted signs should state when and where a pesticide is applied, the name of the pesticide applied and how to get further information, such as a copy of the material safety data sheet (MSDS)⁹ and the product(s) label.

Ten states require posting of signs for indoor school applications. Texas and West Virginia require posting before commencement for a specific time period. Texas, the stronger of the two, requires the posting of warning signs at least 48 hours in advance of the application. Students and school employees warned ahead can avoid exposure. Georgia requires posting signs outside when a structural application continues outside the structure.

STATE REVIEW

 **Arizona** Education Code, title 15 section 152, states that the governing board of each school district is to adopt a policy on the procedures for posting signs for pesticides applied to the school's property. No further details are included in the Code.

 **Georgia** 1996 House Bill 1317 requires posting signs when an applicator, including building operator or commercial applicator, applies restricted use pesticides¹⁰ in public buildings. Public buildings include those used for educational purposes, schools, dormitories, and university buildings. The sign must be posted before the application in a noticeable place at a building's entry and remain for 24 hours following the application. The posted notice includes the location of treatment and how to obtain a copy of the MSDS on the pesticide(s) applied.

 **Maine** Board of Pesticides Control regulations, chapter 22 section 2(G), requires posting signs for structural pesticide applications when the application occurs in an area of "likely human use," including any area within 150 feet of a building used for commercial or institutional purposes or is regularly used. The sign must be posted before the commencement of the application and remain for 48 hours.

 **Maryland** 1998 House Bill 286, an act concerning *Public Schools – Integrated Pest Management*, requires middle and high schools to develop "in-school notification to students and staff members before a pesticide is applied" (1998 Md. Laws 286 § 1(I)(4)). It also states that "in-school notification" is required for bait stations used in elementary or secondary schools. Such notification "may include a sign posted on the door of the room or the room in which the bait station is placed" (1998 Md. Laws 286 § 1(L)). Information regarding the application is available upon request.

 **Massachusetts** Code of Regulations, title 333, section 13.10(3)(c), requires posting signs when commercial applicators apply pesticides to public buildings. Public buildings include schools, day care centers, nursery schools, and institutions. Signs are to be posted at all entrances to the area where pesticides are to be applied before the application begins. The signs are to remain "posted after the application" (MASS. REGS. CODE tit. 333, § 13.10(3)(c)(2) (1996)). No exact amount of time is specified. Enclosed baits and traps and wood preservatives are exempt. The applicator must provide information regarding the pesticide application, including the pesticide product's label, to anyone that requests it.



Michigan Pesticide Use Regulation, section 285.637.11 of the Michigan Administrative Code, requires posting by the commercial applicator making a broadcast, foliar, or space application of restricted-use insecticide to a day-care center or school. Schools, including public or private, kindergarten through 12th grade, must post a sign at the primary point of entry to the building. Posting is required upon completion of the application and must remain in place for at least 48 hours.



Montana Pesticide Act, section 80-8-107 of the Montana Code Annotated, requires posting signs when a building operator or commercial applicator applies pesticides to any building used for education or institutional purposes, schools, dormitories, and university buildings. Signs must be posted at the time of the application at each entrance to the building or room. Signs are to remain posted “until the pesticide is dry or the reentry interval has expired” (MONT. CODE ANN. § 80-8-107(3) (1997)). Signs state how information regarding the application, including how to obtain a copy of the MSDS and label for the product(s) used, may be obtained. Posting is not required for pest baits, pastes and gels.



New Jersey Pesticide Control Regulation, section 7:30-9.10(c) of the New Jersey Administrative Code, requires permanent posting at the central bulletin board for indoor school pesticide applications. The notice must include a contact for receiving more information and

the next application date. The posted sign may be removed 60 days after the last treatment if no more applications are planned.



Texas Structural Pest Control Board Regulations, section 595.8(b), states that posting is required for schools, educational institutions, and day care centers in common access areas at least 48 hours prior to the application. The school is responsible for posting the notification signs. A “Consumer Information Sheet” is given to any employee working in the building at his/her request. Schools are defined as public, private, and parochial primary and secondary schools. The length of time for signs to remain posted is not specified.



West Virginia Code of State Rules, title 61 section 12J, requires day care centers to post signs when crack and crevice, spot, broadcast or space pesticide applications are made in the center. Section 12J-8.3.2 states that the notice must be posted at least 24 hours in advance at the place where the parent or guardian signs the child in and out of the facility.



Posting Notification Signs for Outdoor Pesticide Applications

OVERVIEW

For a wider range of protection, states should require posting pesticide notification signs for outdoor pesticide applications as well. Students who play sports or people continually on the lawns are at high risk when pesticide applications occur on school fields. Dermal exposure can occur when a football player gets tackled, a soccer player slides to make a block or a student sits on the grass to eat lunch or watch a game. Inhalation exposure can occur when a player breathes in kicked up dust and dirt and pesticide residues. Even spectators at a game or passersby face inhalation exposure to pesticides that volatilize or vaporize off the treated area.

Twenty-two states have posting requirements when pesticide applications are made on school grounds. States should require signs to be posted for at least 72 hours, as Rhode Island requires. Seven states require posting for both indoor and outdoor pesticide applications. (See Tables 2 and 3) Sixteen of the following states have posting requirements for lawns, with definitions that include school grounds.¹¹

STATE REVIEW



Arizona Education Code, title 15 section 152, states that the governing board of each school district is to adopt a policy on the procedures for posting signs for pesticides applied to the school's property. No further details are included in the Code.



California Food & Agricultural Code, section 12978, requires posting on school grounds, when the pesticide applied has a worker reentry interval¹² of at least 24 hours. The school is responsible for posting the sign for the length of the restricted-entry interval.



Colorado Pesticide Applicator's Act Rules and Regulations, Part 13, requires commercial or public turf and ornamental applicators to post notification signs at the time of an application. Lawn applications, including athletic fields, playgrounds, and “other similar recreation or common property,” require sign posting adjacent to the specific area treated. No time for signs to remain posted is specified.¹¹



Connecticut General Statutes, section 22a-66a(c), requires posting signs when general use or restricted use pesticides are applied by any individual, regardless of certification or commercial status, to lawns within one hundred yards of any property line. “Noncommercial applications to an area less than one hundred square feet or to a fenced area” (CONN. GEN. STAT. § 22a-66a(c)(1) (1997)) are exempt from the posting requirement. The statutes also require posting signs for structural applications made to the surrounding grounds.¹¹



Florida Statutes, chapter 482 section 2265, require licensed or certified applicators to post signs at the commencement of an application to a lawn. No amount of time for the sign to remain is specified in the statutes or administrative code.¹¹

Table 2. State School Pesticide Policies — Summary

| State | Buffer Zones | Posting Signs: Indoor | Posting Signs: Outdoor | Prior Notification | IPM Defined | Prohibition of Use |
|----------------|--------------|-----------------------|------------------------|--------------------|-------------|--------------------|
| Alabama | Yes | | | | | |
| Arizona | Yes | Yes | Yes | Yes | | |
| California | | | Yes | | | |
| Colorado | | | Yes | | | |
| Connecticut | | | Yes | | Yes | |
| Florida | | | Yes | | Yes | |
| Georgia | | Yes | Yes | | | |
| Illinois | | | Yes | | Yes | |
| Indiana | | | Yes | | | |
| Iowa | | | Yes | | | |
| Kentucky | | | Yes | | | |
| Louisiana | Yes | | | Yes | Yes | Yes |
| Maine | | Yes | Yes | | Yes | |
| Maryland | | Yes | Yes | Yes | Yes | |
| Massachusetts | | Yes | Yes | Yes | Yes | |
| Michigan | | Yes | Yes | Yes | Yes | Yes |
| Montana | | Yes | | | Yes | |
| New Hampshire | Yes | | Yes | | | Yes |
| New Jersey | Yes | Yes | Yes | Yes | | Yes |
| New York | | | Yes | | | |
| North Carolina | Yes | | | | | |
| Ohio | | | Yes | | | |
| Oregon | | | | | Yes | |
| Pennsylvania | | | | Yes | Yes | Yes |
| Rhode Island | | | Yes | | | |
| Texas | | Yes | | Yes | Yes | Yes |
| Vermont | | | Yes | | | |
| Washington | | | Yes | | | |
| West Virginia | | Yes | | Yes | Yes | Yes |
| Wisconsin | | | Yes | | | |

 **Georgia** Department of Agriculture Pesticide Use and Application Rules, chapter 40-21-9, requires commercial and non-commercial applicators to post notification signs when applying pesticides to nonresidential properties. Signs are to be posted at the commencement of the application and removed “the day after the application.” Information regarding the application is left with the building manager or custodian.¹¹ Georgia Rules and Regulations, section 620-3-.02(k)(2)(iv), require posting at the primary points of entry to the treated area when structural applications extend 6 feet outside of the structure. The building operator is

responsible for providing, upon request, information regarding treatment and a copy of the MSDS and the label.

 **Illinois** Lawn Care Products Application and Notice Act, chapter 415 section 65/3 of the Illinois Compiled Statutes, requires an “applicator for hire” to post signs when applying pesticides to turf or ornamentals. The sign may be removed the following day.¹¹

 **Indiana** Administrative Code, section 1-5-1, requires licensed applicators for hire to post signs when applying a pesticide to a lawn. The signs are to remain posted until the following day.¹¹



Iowa Administrative Code, section 21-45.50, requires “commercial and public applicators who apply pesticides within urban areas in municipalities” (IOWA ADMIN. CODE r. 21-45.50 (1998)) to post signs before the commencement of an application to commercial or public lawns. Signs must be posted immediately adjacent to the treated area and at the entrance to the park, athletic field, playground or “other similar recreational property.” The sign is to remain posted for at least 24 hours. Structural pesticide applications that occur outside the perimeter of the structure are exempt from this posting requirement. Signs include contact information to receive more information on the pesticide(s) applied, upon request.¹¹



Kentucky Pesticide Use and Application Act, chapter 217 section 300 of the Kentucky Revised Statutes, requires an applicator for hire to post signs immediately following a lawn application. The sign is to remain until the following day.¹¹



Maine Board of Pesticides Control regulations, chapter 22 section 2(G), requires certified applicators to post signs for applications to turf and ornamentals when the application occurs in an area of “likely human use,” including any area within 150 feet of a building used for commercial or institutional purposes or is “regularly used.” The sign must be posted before the commencement of the application and remain for 48 hours.¹¹



Maryland Department of Agriculture Pesticide Use Control Regulations, section 15.05.01.15, require licensed or permitted lawn applicators to post notification signs at the time of application. Signs are to be placed at the entrance to the treated area or if only a small area is treated, adjacent to the treated area. The sign is to remain posted for 48 hours.¹¹



Massachusetts Code of Regulations, title 333 section 13.07(2), requires the commercial or certified applicator to post signs when applications are made “for the control of turf pests on public or private non-residential properties” (333 CMR § 13.07(2) (1996)). No amount of time for the signs to remain posted is specified. Signs are required for restricted use as well as general use pesticides.¹¹ Massachusetts Code of Regulations, section 13.05(3)(h), requires the posting of signs at the border of treated agriculture property 10 hours before aerial applications that occur within 500 feet of a school’s property. The sign is to remain posted for 48 hours.



Michigan Administrative Code, section 285.637.11, requires commercial applicators applying a broadcast, foliar or space restricted use pesticides to turf or ornamentals to post notification signs. Signs are to be posted immediately following the application and remain posted for 24 hours.¹¹



New Hampshire Code of Administrative Rules, section 508.01, requires signs to be posted when commercial applications are made to turf areas. The signs are to remain posted for 48 hours.¹¹



New Jersey Pesticide Control Regulation, section 7:30-9.11(d), requires any commercial pesticide turf or ornamental application to school grounds, such as athletic fields, playgrounds and recreation areas, to post signs at the start of the application. Signs are to remain posted for at least 24 hours at the main entrance points to that area. Signs include contact information to get more information on the pesticide(s) applied.



New York Environmental Conservation Law, sections 33-09 and 33-10, require certified and commercial lawn applicators to post signs for applications made to lawns. Signs are to remain posted for 24 hours. Information regarding the application is available upon request.¹¹



Ohio Rule 901:5-11-09, promulgated under Ohio Revised Code chapter 119, requires posting signs for pesticide applications made to public lawns, which include “school yards.” The sign must remain for at least 24 hours after treatment. The sign includes information on how to obtain facts regarding the pesticides used in the application.



Rhode Island Rule T, promulgated by the Rhode Island Pesticide Control Law, requires signs to be posted before a commercial applicator begins a pesticide application to school grounds, playgrounds or athletic fields. The signs must remain posted for 72 hours. The school is responsible for posting the signs. The signs state the name of the pesticide(s) applied.



Vermont Regulations for Control of Pesticides, section IV(8), requires certified commercial and non-commercial applicators to post signs at the commencement of a turf and ornamental application made to “public non-residential properties.” The sign is to remain posted for 24 hours. Such areas that are fenced require posting in the visitor reception area and the main employee entrance. Information regarding the application is available upon request.¹¹



Washington Pesticide Application Act, section 17.21.410 of the Revised Code of Washington, requires that an individual, not just a certified applicator, that applies pesticides to the grounds of a school, nursery school or day-care center, must post a sign at the time of the application. Details on whom to contact for information regarding the pesticide application is included on the sign. No length of time for the sign to remain posted is specified.



Wisconsin Administrative Code, section 29.56, requires a person applying pesticides to turf or ornamentals on “public or commercial facilities,” parks, workplaces, recreational areas and public lands to post notification signs. Signs are to be posted prior to commencement of the application and remain until sunset the follow-



ing day. The applicator will provide information regarding the application upon request.¹¹ Farms within 300 feet of schools, playgrounds and day care facilities must post signs for restricted entry pesticides during restricted period.

Prior Written Notification

OVERVIEW

Written notification prior to each pesticide use in the schools is a good way to make sure that all parents, children and staff are aware and warned. Limited notification-based registries is a less effective means of notifying people and does not qualify as right-to-know because of its limited scope. Requiring that individuals place themselves on registries, sometimes only with a doctor's letter, affords only those who already know about toxic exposure the opportunity to be informed about pesticide use in the school. Prior notification should be 72 hours in advance to make sure the information has been received, to get further information regarding the pesticide and to make arrangements to avoid the exposure, if necessary. Notification should include the name of the pesticide(s), the day and time, and area of the application and how to obtain a copy of the MSDS and label.

Nine states have requirements to notify students and/or employees of the school before a pesticide application is to occur. Arizona and Maryland require that the schools give prior notification to each parent, guardian and staff. This is the most comprehensive and effective approach to written notification. Arizona is the only state that addresses what should be done for students and staff who are not able to attend the school because of the application. West Virginia requires automatic prior notification of applications of certain pesticides to all employees. Eight states require schools to inform the parent or guardian of their right, if they choose, to be listed on a registry. Two of these states, Louisiana and Pennsylvania, require medical verification to be listed on a registry. Seven states require both posting signs and prior notification of a school pesticide application, which provides the widest range of notification activities. Virginia addresses the issue of pre-notifying people when pesticides are used in schools but does not actually require it. Maine's requirements enable people to request to be notified of an application on property surrounding a school.

STATE REVIEW



Arizona Structural Pest Control Commission Rules and Administrative Regulations, section 32-2307 of Arizona Administrative Code, requires the pest con-

Written notification prior to each pesticide use in the schools is a good way to make sure that all parents, children and staff are aware and warned.

trol operator to notify the school 72 hours before any pesticide application and again immediately before the application is to begin. Arizona Education Code, title 15 section 152, requires the school to then notify parents and staff of the proposed pesticide application within 48 hours of the commencement of the application. This section of the Education Code also requires that the governing board of each school district develop a policy and procedure for notifying parents, guardians, students and employees during the school's regular session, procedures for posting signs to identify pesticide application areas, and procedures for providing for continuing instruction for pupils who are absent because of pesticide applications on school property.



Louisiana State Pesticide Law, section 3389 of the Louisiana Revised Statutes, requires all schools to maintain a pesticide sensitive student registry. Schools include public or private, day or residential, and elementary to secondary schools. Parents must submit in writing their request to be pre-notified. Medical verification of a student's sensitivity is also required.



Maine Department of Agriculture, Food and Rural Resources, Board of Pesticide Control Regulations chapter 22 section 5, states that an occupant of a sensitive area, including a school, can request to be notified of a pesticide application that will occur within 500 feet of a school's property. Notification will occur only if the application is on surrounding land and not when the school itself is applying the pesticide.



Maryland 1998 House Bill 286, an act concerning Public Schools – Integrated Pest Management, requires 24-hour notice to all parents, guardians and staff of pesticide application in elementary school buildings. Prior notification includes a statement that warns of pesticide exposure hazards to pregnant women and infants as well as a short description of the potential adverse effects of the pesticide used. In the case of middle and high schools, the law sets up a registry-based notification system. Parents, guardians and staff are informed how to be included on the registry at the beginning of each school year. A person on the registry will be notified at least 24 hours before a pesticide is applied in the school building. In addition to the registry, middle and high schools are required “to develop an appropriate means of in-school notification to students and staff members before a pesticide is applied” (1998 Md. Law 286 § 1(I)(4)). Written notification, one week in advance of an application, will be given to everyone in the school when a space spraying application occurs in a school building. Before a bait station is used, schools must develop a method of “in-school” notification. If an emergency pesticide application occurs, notification is given within 24 hours after the application.



Massachusetts Code of Regulations, title 333, section 13.10(3)(c), states that when pesticides are applied to public buildings, including schools, day care centers, nursery schools, and institutions, by commercial applicators, the applicator must provide prior

notification to any person who requests it. There are no specifics on how long before the application notification will be or notification procedures.



Michigan Regulation No. 637, Pesticide Use, section 285.637.15 of the Michigan Administrative Code, requires the school district's administrator to provide written information to parents or guardians of students of the school or day-care center on how to be included on the list for prior notification. This information is given at the beginning of the school year, in September for a day-care center, or when a new student enrolls. Prior notification is provided by mail or by telephone and given the day before the application. During the months when school is not in regular session, school administrators may utilize a message notification system.



New Jersey Pesticide Control Regulation, section 7:30-9.12, states that "a person" may request to be notified prior to any pesticide application made to a school's structure, turf or ornamentals. No specific notification times are indicated.



Pennsylvania Code sections 128.111 and 128.112, describes the rules and regulations promulgated under the Pesticide Control Act regarding the pesticide sensitivity registry, which includes prior notification for one's residence, work and school. Pesticides applied within 500 feet of or on the school property, elementary, secondary or day care center, by a commercial or public pesticide applicator, are covered by the law. A physician must verify a person's sensitivity to pesticides in order to be on the registry. Notification will be made between 12 and 72 hours before the application begins. Notification of pesticides will not occur for tamper resistant bait stations.



Texas Structural Pest Control Board Regulations, section 595.8(c), requires schools, educational institutions and day care centers to inform parents or guardians of students in writing that pesticides are periodically applied indoors and that notification of the times and types of applications is available upon request. This notification is made when the student registers, at the beginning of the school year or whenever a student enrolls. The regulation does not specify the period of time for notification although sign posting requirements call for signs to be posted at least 48 hours in advance. School official, employees or parents may request 24-hour prior notice of agricultural spraying within ¼ mile of school.



Virginia does not have specific laws regarding pesticides and schools. However, the Pesticide Control Board has adopted a resolution, "Virginia Control Board's Recommended Procedures for Posting and Notification of Pesticides Applications In and Around Schools" which states that schools should consider establishing notification and posting requirements.



West Virginia, Legislative Rule 61-12J section 8.1.2, requires that all schools and day care centers notify employees at least 24 hours before an application of higher toxicity pesticides, identified by the state

as level 3 and 4. Sections 8.2. and 8.3 require that at the beginning of every school year, or at the time a student enrolls, for schools and day care centers, school administrators must notify parents or guardians of their right to be informed when level 3 or 4 pesticides are applied. If a parent or legal guardian request to be notified, the school official must do so 24 hours prior to the application.

Prohibitions on Use

OVERVIEW

Limiting when and what pesticides are applied in and around schools is important to the reduction of pesticide exposure. Pesticides should never be applied when students or employees are in the area or may be in the area within at least 24 hours of the application. Seven states specifically restrict the type and timing of pesticides that may be used in a school. In reality, certain types of pesticides, such as carcinogens, endocrine disrupters, reproductive toxins, developmental toxins, neurotoxins, persistent compounds and substances, bioaccumulative compounds and substances, toxicity category 1 acutely toxic pesticides and ground water contaminants should not be used around children. Sprays invade the indoor ambient environment. Baits must be evaluated carefully for off-gassing or volatility.

STATE REVIEW



Louisiana Pesticide Law, section 3384 of the Louisiana Revised Statutes, states that restricted use pesticides applications are not allowed if students will be within the school or on the school's grounds for normal school activities for at least 8 hours after the application occurs. Schools include public or private, day or residential, and elementary to secondary schools.



Michigan Administrative Code, regulation no. 637 Pesticide Use, section 285.637.15, restricts the type of pesticides to be used in and around schools and day-care facilities. Neither liquid spray nor aerosol insecticide can be used in a school unless the area is unoccupied by students at least 4 hours after the application. It also does not permit outdoor ornamental and turf applications of liquid spray pesticides be made within 100 feet of an occupied room or building during school hours or when people are using the application area.



New Hampshire Code of Administrative Rules, section 506.09(b) and (c), states that pesticides are not to be applied in sensitive areas, such as school buildings, playgrounds, athletic fields and any other property of the school "where exposure to the pesticide(s) may have an adverse effect on human health, wildlife, and the environment" (N.H. CODE ADMIN. R. DIV. PEST. CNTRL. § 506.09(b) (1998)).



New Jersey Administrative Code, section 30-10.3(1), restricts when or where pesticides may be used. It states that no pesticide applications, except rodenticides, roach baits and antimicrobial agents can be applied within any school's (preschool to 12th grade) property, during the school's normal hours. "After normal school hours, ap-

Table 3. How States Around the Country Protect Children from Pesticide Exposure in Schools¹

| STATE | BUFFER ZONES | POSTING SIGNS ² | PRIOR NOTIFICATION | PROHIBITION OF USE | IPM |
|----------------------|--|---|---|---|----------------|
| Alabama | Aerial spraying, 400 feet. | | | | |
| Arizona | Ground & aerial spraying, ¼ mile, certain pesticides. | Indoor & Outdoor, each school district authority to set up posting requirements for each school. | Parents & staff, automatic 48 hour notice. | | |
| Connecticut | | Outdoor and structural applications made to perimeter of school building. | | | Requires |
| Florida | | Outdoor, prior posting. | | | Defines, only |
| Georgia | | Indoor, prior posting, remain for 24 hours. Outdoor and application to perimeter— prior posting and remain until following day. | | | |
| Illinois | | Outdoor, posted sign removed following day. | | | Recommends |
| Louisiana | Aerial applications, 1000 feet, during school hours. | | Student registry, medical verification required, no time specified. | Indoor & outdoor applications of restricted use pesticides, entry restricted for 8 hours after application | Recommends |
| Maine | | Indoor & Outdoor, post prior to application & remain for 48 hours. | | | Recommends |
| Maryland | | Indoor, “in-school notification” in middle & high schools. “in school notification” for bait stations used in elementary & secondary schools. Outdoor, post signs at time of application, remain 48 hours. | Elementary school, automatic 24 hour notice. Middle & high school, registry, 24 hour notice. | | Requires |
| Massachusetts | | Indoor, post signs before application. Outdoor, lawn posting required. Post 10 hours prior to aerial agricultural application, remain 48 hours. | Student & employee registry, no time specified. | | Defines, only |
| Michigan | | Indoor, post sign after application, remain for 48 hours. Outdoor, post sign after application, remain for 24 hours. | Student registry, 24 hour notice. | Indoor, spray or aerosol insecticides, entry restricted for 4 hours after application. Outdoor, prohibits liquid spray, 100 feet outside of occupied area. | Training, only |
| Montana | | Indoor, post sign at time of application, remain “until dry.” | | | Recommends |
| New Hampshire | Aerial spraying, during commuting hours, outdoor activity, in sensitive areas. | Outdoor, signs posted for 24 hours. | | Pesticides cannot be applied “where exposure may have an adverse effect on human health.” | |

| STATE | BUFFER ZONES | POSTING SIGNS² | PRIOR NOTIFICATION | PROHIBITION OF USE | IPM |
|-----------------------|---|--|--|--|---------------|
| New Jersey | Ground & aerial gypsy moth applications, during commuting hours, 2 miles grade school, 2 ½ miles high school. Any aerial application, 300 feet. | Indoor, permanent posting at central bulletin board & states the next application date. Outdoor, post sign at start of application & remain posted for 24 hours. | Student & employee registry. Warning for indoor & outdoor applications. No time specified. | No pesticide is permitted to be applied during normal school hours. After normal hours, applications can occur if not in use for time needed for product to dry, settle. | |
| North Carolina | Aerial spraying within 300 feet of school. | | | | |
| Oregon | | | | | Requires |
| Pennsylvania | | | Student & employee registry, indoor & outdoor school applications & within 500 feet of school property, 12 to 72 hour warning. | No applications in “common access areas” during normal school hours or extracurricular activities, 7 hours restricted entry after application. | Defines, only |
| Texas | | Indoor, post sign 48 hours prior to application, no specifics on time to remain posted. | Student registry, indoor applications, no time specified. School official, employees, parents, 24-hour notices, farm spraying within ¼ mile of school. | Pesticides are grouped into Green, Yellow & Red Lists. No indoor application of certain Green List when students in area. Other Green List & Yellow & Red Lists, restrict entry for 12 hours after application. Outdoor applications, Green List – students must be 10 feet away, Yellow List - 10 feet away & 12 hours restricted entry, red list 50 feet away & 12 hours restricted entry. | Requires |
| West Virginia | | Indoor, day care centers must post sign 24 hours prior to application, no specifics on time to remain posted. | Day care employees, automatic 24 hour notice, level 3 or 4 pesticide. Student registry, schools & day care centers, 24 hour warning of level 3 or 4 pesticide. | Pesticides are grouped into levels. Students & employees restrict entry for 4 hours after level 3 pesticide & 8 hours after level 4 pesticide. | Requires |
| Wisconsin | | Outdoor, post prior until sunset next day. Farms within 300 feet of school, during duration of restricted entry pesticides. | | | |

1 This analysis reviews what each state is required to do under its statutes and regulations. It does not fully examine all the administrative materials that may have been developed by the states or local policies adopted within the states.

2 The following 10 states require posting notification signs for outdoor lawn applications: California, Colorado, Indiana, Iowa, Kentucky, New York, Ohio, Rhode Island, Vermont and Washington. These states are not included because this is the only requirement the states have adopted to protect children and staff while at school.

plications can be made in areas where students will not contact treated areas until sufficient time is allowed for the pesticide to dry or settle or longer if the label requires” (N.J. ADMIN. CODE tit. 7 §30-10.3 (l) (1997)).



Pennsylvania Codes, title 7, section 128.106, restricts the timing of pesticide applications in schools, elementary and secondary, and day care centers. It states that pesticides cannot be applied in “a common access area” of a school when students are expected to use the space within seven hours during school hours or organized extracurricular activities. “Common access areas” include areas where normal activity to “congregate, assemble or frequent.”



Texas Structural Pest Control Board Regulations, section 595.11, classifies pesticides by their EPA toxicity category and are color coded, green, yellow and red. Each color represents different precautions and reentry times. Some Green List pesticides may not be applied when students are in the application area. All other Green List pesticides, Yellow list pesticides and Red list pesticides can only be applied 12 hours before students will be in the area of application. For outdoor applications, Green List pesticides can only be applied if students will be at least 10 feet from the application site. Yellow List pesticides can only be applied if students will be at least 10 feet from the application site for the following 12 hours. Red List pesticides can only be applied if students will be at least 50 feet from the application site for the next 12 hours.



West Virginia Legislative Rules, title 61 section 12J-7.1.3.c and 12J-7.1.4.c, require students and employees to remain out of application areas based on deferred levels of toxicity and application method. Level 3 pesticides require a four hour waiting period during which students and employees must remain out of treated areas. Level 4 pesticides require at least an eight-hour waiting period. Section 12J.9 states that employees and students of schools and day care centers must not be present at the time of a pesticide application, but that “pesticides may be applied to a localized area of infestation when students, children or school and day care center employees are present if the infestation causes an imminent threat of bodily harm” (W.VA. CODE ST. R. tit 61 § 12J.9.1 (1996)).

Integrated Pest Management

OVERVIEW

A good integrated pest management (IPM) program can eliminate the unnecessary application of synthetic, volatile pesticides in schools. The main elements of a good 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, and 4) utilizing pest suppression techniques, if necessary, that are based on mechanical and biological controls. An IPM policy should include a written policy guide and a prohibited and acceptable materials list. Materials that could be considered after using other methods include boric acid

and disodium octoborate tetrahydrate, silica gels, diatomaceous earth, nonvolatile insect and rodent baits in tamper resistant containers or for crack and crevice placement only, microbe-based insecticides, botanical insecticides (not including synthetic pyrethroids) without toxic synergists, and biological (living) control agents.

A strong IPM definition and policy is one of the best ways to minimize or eliminate children’s exposure to pesticides while at school. IPM is a term that is used loosely with many different definitions and methods of implementation. Many states have supporting material describing their IPM plan, which details the principles of IPM where the statute or law does not. Thirteen states define, recommend or require IPM in their state pesticide statutes or regulations. Of these, only five states (Connecticut, Maryland, Oregon, Texas, and West Virginia) require IPM in the schools.

Four states (Illinois, Louisiana, Maine, and Montana) recommend IPM. Florida, Massachusetts and Pennsylvania law define IPM, but do not require implementation of it in their schools. Michigan requires school pesticide applicators to be trained in IPM. Many of the statutes and regulations mandate that the specific details of the program be developed administratively. If you live in one of these states listed below, contact your school district or state government to see if and how IPM is being implemented. It is important to get a strong definition adopted for effective management.

Limiting when and what pesticides are applied in and around schools is important to the reduction of pesticide exposure.

STATE OVERVIEW



Connecticut Pesticide Control Act, section 22a-66l of Connecticut General Statutes, requires the development of a policy for each state department, agency or institution to use IPM. The definition of IPM, found in Public Act No. 97-242, is vague and does not emphasize monitoring and other controls to eliminate pests. Connecticut Public Act No. 98-229 requires the Commissioner of Environmental Protection to prepare an IPM plan and right-to-know feasibility study.



Florida Statutes, chapter 482, section 021(14), defines IPM to maximize use of naturally occurring pest controls. Not required to be used in schools.



Illinois Structural Pest Control Act, section 235/3.25 of the Illinois Compiled Statutes, has a very thorough definition of IPM. The act defines IPM as “a pest management system that includes the following elements: a) identifying of pests and their natural enemies; b) establishing an ongoing monitoring and record keeping system for regular sampling and assessment of pest and natural enemy populations; c) determining the pest population levels that can be tolerated based on aesthetic, economic, and health concerns, and setting action thresholds where pest populations or environmental conditions warrant remedial action; d) the preven-

tion of pest problems through improved sanitation, management of waste, addition of physical barriers, and the modification of habitats that attract or harbor pests; 5) reliance to the greatest extent possible on nontoxic, biological, cultural or mechanical pest management methods, or on the use of natural control agents; 6) when necessary, the use of chemical pesticides, with preference for products that are the least harmful to human health and the environment; and 7) record keeping and reporting of pest populations, surveillance techniques, and remedial actions taken (225 ILL. COMP. STAT 235/3.25 (1997)). Section 235/10.2 of the Structural Pest Control Act requires the Department of Public Health to prepare IPM guidelines for school buildings and property. The schools are then encouraged to adopt these guidelines and have a designated person, a specialist, to oversee the implementation in the school. It also states that the Department of Public Health may develop a training program for the designated specialists.

 **Louisiana** Pesticide Law, section 3382-3388 of the Louisiana Revised Statutes, discusses primary and secondary school pesticide safety by encouraging least toxic alternatives to pesticides. The law does not define IPM directly. Instead, “least toxic method is the integral part of an integrated pest management plan that may include pest control other than the application of pesticides” (LA. REV. STAT. § 3385 (1996)) and goes on to discuss the main points of an IPM program. Schools are encouraged to adopt “the least toxic method of pest control.” Section 3386 of the law states that pest management at schools must be done by a trained IPM applicator. Annually, each school authority is to develop and submit a plan on how IPM will be implemented for school structures and property. This plan as well as a written record of all restricted use pesticides used is available to the public.

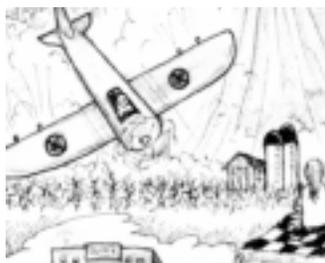
 **Maine** Board of Pesticides Control, title 22 section 1471-X of the Maine Revised Statutes, includes ambiguous language regarding the state’s IPM policy. Neither the laws nor the regulations specifically require or suggest that schools should adopt principles of IPM. The law and regulations do not define IPM. The law does state that “it is the policy of the State to work to find ways to use the minimum amounts of pesticides. The agencies of the State involved in the regulation or use of pesticides shall promote the principles and implementation of integrated pest management,” and goes on to state that “these agencies, in cooperation with private interest groups, shall work to educate pesticide users and the general public in the proper use of pesticides and to determine other actions needed to accomplish the state policy” (ME. REV. STAT. tit. 22 §1471-X (1998)).

 **Maryland** 1998 House Bill 286, entitled *Public Schools – Integrated Pest Management*, prioritizes non-chemical solutions, stating that IPM uses “one or more pest control methods including sanitation, structural repair, nonchemical methods and when nontoxic

options are unreasonable or have been exhausted, pesticides” (1998 Md. Law 286 § (A)(6)). This law requires the Maryland Department of Agriculture to develop uniform standards and criteria for implementing IPM and the county boards will then implement its schools procedures once approved by the secretary. A person is designated to maintain and make available information on the pesticides that may be used.



Massachusetts Code of Regulations, section 11.05(2)(h), defines IPM, giving equal weight to chemical pest management controls and the use of alternative pest control methods, while not addressing monitoring. For Vegetation Management Plans, applicants wanting to spray rights-of-way must submit to the department every five years, “a description of IPM programs or other techniques/programs to minimize the amount and frequency of herbicide applications” (333CMR §11.05(2)(h) (1996)). Although this does not directly include schools, it would be relevant if this type



of area bordered school grounds. All plans must go through a public hearing and comment process. Massachusetts Pesticide Bureau in the Department of Food and Agriculture has produced a booklet on IPM, which includes a section on implementing IPM in school buildings.



Michigan has one of the weaker official definitions of IPM. For a pesticide application in schools, the applicator must be trained in IPM. Detailed elements of the training, found in Regulation No. 637 Pesticide Use, section 285.637.14 of the Michigan Administrative Code, are similar to the main methods associated with IPM, but does not give priority to non-chemical approaches.



Montana Model School Integrated Pest and Pesticide Safety Program Act directs the Montana Department of Agriculture to establish a model IPM program and encourages its adoption by schools and day care centers. Through this act, the Department in cooperation with the Montana Cooperative Extension Service and the Montana Model School Technical Working Group developed IPM program guidelines, as well as an IPM study manual for pesticide applicators in schools. IPM is not defined in the act but is defined thoroughly in the program guidelines and manual.



Oregon State Pesticide Control Act, section 634.660 of the Oregon Revised Statutes, defines IPM without giving priority to non-chemical pest management methods. The following agencies are required to implement IPM: “State Department of Agriculture, including the control of noxious weeds, State Department of Fish and Wildlife, Department of Transportation, State Parks and Recreation Department, State Forestry Department, Department of Corrections, Oregon Division of Administrative Services and each Oregon institution of higher education, for the institution’s own building and grounds maintenance” (OR. REV. STAT. § 634.660 (1995)). A person is designated from

each agency to coordinate the IPM program for that agency. It also requires that each person responsible for pest management in each agency is trained in IPM.



Pennsylvania's definition of IPM, found in title 7 section 128.2 of the Pennsylvania Codes, does not give non-chemical pest control methods priority and does not discuss monitoring. There are no requirements or recommendations to use IPM in schools.



Texas Structural Pest Control Board Regulations, section 595.11, require each school district to adopt IPM policies and designate an IPM coordinator who has taken special IPM training courses. Each school board's adopted policy is on file with the district superintendent and IPM coordinator. Each policy must base its IPM definition on the one defined by the US EPA. The definition should include strategies that rely on the best combination of pest management tactics that are compatible with human health and environmental protection, use of non-chemical management strategies whenever practical and preferential use of least-toxic chemical controls.



West Virginia Legislative Rules, title 61 section 12J-3, defines IPM, but does not prioritize alternative pest control methods in its definition. Title 61 section 12J of the Legislative Rules also establishes proce-

dures to provide IPM in schools and day care centers. The schools must then file plans with the Commissioner. The WV Department of Agriculture has produced an IPM guide for schools and other buildings.

Conclusion

If we do not want to harm or poison our children, our laws should reflect this. This review is intended to serve as a guide to move states and localities forward in their efforts to protect children. While the review shows that over half the states have taken some action, it describes limited action. Nearly half the states are silent on these critical issues. The federal government has neglected the entire issue and turned its back on children and the daily pesticide assault in the schools. The degree of state activity suggests a level of concern that can and should lead to increased protection in the future.

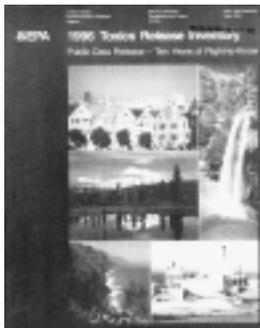
For information on the above discussed statutes and regulations, local governments and school districts that have passed school policies, and tools on how to get such policies at the state or local level adopted, please contact NCAMP.

Kagan Owens is information coordinator at the National Coalition Against the Misuse of Pesticides (NCAMP). Jay Feldman is NCAMP's executive director.

Endnotes

- 1 National Research Council, National Academy of Sciences, *Pesticides in the Diets of Infants and Children*, Washington, DC: National Academy Press, 1993.
- 2 The use of the word "address" casts a wide net of recommended and required activities. States include Arizona, Connecticut, Georgia, Illinois, Louisiana, Maine, Maryland, Massachusetts, Michigan, Montana, New Hampshire, New Jersey, Oregon, Pennsylvania, Texas, and West Virginia.
- 3 Calabreses, E.J., *Age and Susceptibility to Toxic Substances*, John Wiley & Sons, 1986; Natural Resource Defense Council (NRDC), *Intolerable Risk: Pesticides in Our Children's Food*, February, 1989; Spyker, J.M. and D.L. Avery, "Neurobehavioral Effects of Prenatal Exposure to the Organophosphate Diazinon in Mice," *Journal of Toxicology and Environmental Health* 3:989-1002, 1977; Paigen, B., "Children and Toxic Chemical" *Journal of Pesticide Reform*, Summer 1986.
- 4 Volberg, D.I., et al., *Pesticides in Schools: Reducing the Risks*, Robert Abrams, Attorney General of the New York State, New York State Department of Law, Environmental Protection Bureau, New York, March 1993; Bushnell, P.J., et al., "Behavioral and Neurochemical Effects of Acute Chlorpyrifos in Rats: Tolerance to Prolonged Inhibition of Cholinesterase," *Journal of Pharmacology. Exper. Thera.* 266(2):1007-1017, 1993.
- 5 Paigen, B., "Children and Toxic Chemical" *Journal of Pesticide Reform*, Northwest Coalition for Alternatives to Pesticides, Summer 1986.
- 6 S.K. Hoar, et al., "Agricultural Herbicide Use and a Risk of Lymphoma and Soft-Tissue Sarcoma," *Journal of the American Medical Association*, 256(9):1141-1147, 1986; Wigle, D.T., et al., "Mortality Study of Canadian Farm Operators: Non-Hodgkin's Lymphoma Mortality and Agricultural Practices in Saskatchewan," *Journal of the National Cancer Institute* 82(7):575-582, 1990; Woods, J.S. "Non-Hodgkin's Lymphoma Among Phecoxy Herbicide-Exposed Farm Workers in Western Washington State. *Chemosphere* 18(1-6):401-406, 1989; Zahm, S.H., et al., "A Case-Control Study of Non-Hodgkin's Lymphoma and the Herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) in Eastern Nebraska" *Epidemiology*. 1(5):349-356, 1990.
- 7 Gold, E. et al., "Risk Factors for Brain Tumors in Children," *American Journal of Epidemiology* 109(3):309-319, 1979; Lowngart, R. et al., "Childhood Leukemia and Parents' Occupational and Home Exposures," *Journal of the National Cancer Institute* 79:39, 1987; Reeves, J.D., "Household Insecticide-Associated Blood Dyscrasias in Children," (letter) *American Journal of Pediatric Hematology/Oncology* 4:438-439, 1982; Davis, J.R. et al., "Family Pesticide Use and Childhood Brain Cancer," *Arch. Environmental Contamination and Toxicology* 24:87-92, 1993; Leiss, J.K. and D.A. Savitz, "Home Pesticide Use and Childhood Cancer: A Case-Control Study," *American Journal of Public Health* 85:249-252, 1995.
- 8 Vasselinovitch, S.D., et al., "Neoplastic Response of Mouse Tissues During Perinatal Age Periods and Its Significance in Chemical Carcinogenesis," *Perinatal Carcinogenesis, National Cancer Institute Monograph* 51, 1979.
- 9 Material Safety Data Sheets are regulated by the Occupational Safety and Health Administration and detail the hazards of the product ingredients. MSDS's are sometimes limited by the fact that they are completed by the product manufacturer.
- 10 Restricted use pesticides is "determined by the U.S. EPA or a state agency. [It is] a pesticide which is available for purchase and use only by certified pesticide applicators or persons under their direct supervision. This group of pesticides is not available for use by the general public," as defined in *Farm Chemicals Handbook '98*, Willoughby, OH: Meister Publishing Company, 1998.
- 11 Although states in this category do not specify schools outright in its definition of lawn, school grounds are included. The 16 states in this category include Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New York, Vermont and Wisconsin.
- 12 The restricted-entry interval is "the time which must elapse after pesticide application before it is safe to enter the treated area without wearing protective clothing and equipment," as defined in *Farm Chemicals Handbook '98*, Willoughby, OH: Meister Publishing Company, 1998. "Safe" is loosely used here. The statutory standard is interpreted by EPA to allow for "acceptable risks."

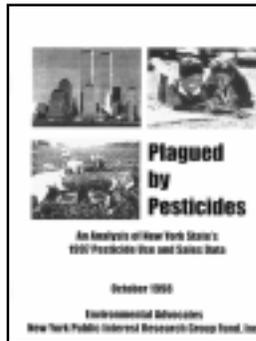
1996 Toxic Release Inventory: Public Data Release - Ten Years of Right to Know



(EPA, Office of Pesticide Programs, May 1998). This document reports on waste management activities and toxic chemical releases

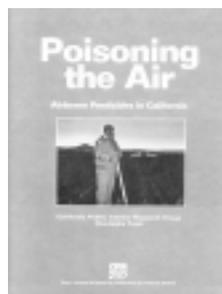
from federal facilities and manufacturers around the U.S. for the year 1996. It discloses where toxic chemical releases were in the greatest and least amounts in the nation, as well as identifies specific factories in an area. In response to the fatal chemical release accident in Bhopal, India, the Emergency Planning and Community Right-To-Know Act (EPCRA) established the Toxic Release Inventory (TRI). Since TRI reporting was first implemented in 1987, reporting of toxic chemical use has doubled, while actual industrial on- and off-site releases of toxic chemicals has decreased by almost 50%, or by 1.5 billion pounds. All manufacturing and federal facilities with 10 or more full-time employees must report their releases, transfers and waste management quantities. Each reporting facility must also have thresholds of 25,000 pounds for manufacturing and processing each listed chemical or 10,000 pounds for otherwise using each listed chemical. Chemical releases to air, water, land, and injection wells are reported separately. The data disclosed in this report is represented in numerous graphs and tables. Amounts of chemicals transferred off-site for recycling, energy recovery, treatment, and disposal are also included. *For a copy (408pp)*, contact U.S. EPA EPCRA Hotline, 800-424-9346, EPA document # 745-R-98-005, or see website <http://www.epa.gov/opptintr/tri>.

Plagued by Pesticides



taking place in the areas of the highest human population: New York City and the surrounding region, including Long Island. This is according to *Plagued by Pesticides*, which is an analysis of pesticide use in the state of New York, based on the 1997 data released in July 1998 by the State Department of Environmental Conservation. In total, 16.7 million pounds and 2.4 million gallons of pesticides were used in the state in 1997. A major finding documents that statewide nonagricultural pesticide use is higher than agricultural use. According to the report, over 30% of the pesticides used in the state contain carcinogens. The report explains several reasons why pesticides are hazardous and gives a brief explanation of key elements of the *Food Quality Protection Act*. *For a copy (38pp)*, send \$10ppd to NYPIRG, 107 Washington Avenue, Albany, NY 12210, 518-436-0876.

Poisoning the Air: Airborne Pesticides in California

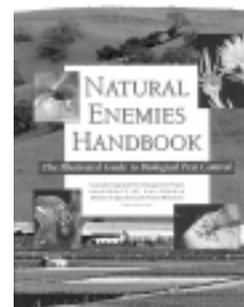


(Environmental Advocates and NY Public Interest Research Group, October 1998). The highest level of pesticide use in New York is taking place in the areas of the highest human population: New York City and the surrounding region, including Long Island. This is according to *Plagued by Pesticides*, which is an analysis of pesticide use in the state of New York, based on the 1997 data released in July 1998 by the State Department of Environmental Conservation. In total, 16.7 million pounds and 2.4 million gallons of pesticides were used in the state in 1997. A major finding documents that statewide nonagricultural pesticide use is higher than agricultural use. According to the report, over 30% of the pesticides used in the state contain carcinogens. The report explains several reasons why pesticides are hazardous and gives a brief explanation of key elements of the *Food Quality Protection Act*. *For a copy (38pp)*, send \$10ppd to NYPIRG, 107 Washington Avenue, Albany, NY 12210, 518-436-0876.

(Californians for Pesticide Reform (CPR) and CALPIRG, 1998). While many people are aware of pesticide residues in food and water, CPR and CALPIRG show that pesticides also linger in the air we breathe. In California, the Toxic Air Con-

taminant Program (TACP), enacted in 1983, monitors air pollutants but currently only tests for 26 of the over 100 pesticides ranked as potential air contaminants. The TACP is also supposed to rank chemicals according to human toxicity, and then take action to regulate those that are the most harmful. However, CPR and CALPIRG found that, as of now, only the insecticide ethyl parathion has been subjected to a complete review under this program. The report also asserts that pesticides may be carried in wind for miles and are very likely being inhaled by several million people in California. According to the report, the fumigant methyl bromide, used primarily for weed control, can seep into the air in homes even when the windows are closed. *For a copy (30pp)*, send \$10ppd to CALPIRG, 450 Geary Street, Ste 500, San Francisco, CA 94102, 415-292-1487, pirg@pirg.org, or CPR, 49 Powell Street, Ste 530, San Francisco, CA, 94102, 415-981-3939, pests@igc.org.

Natural Enemies Handbook: the Illustrated Guide to Biological Pest Control



Mary Louise Flint and Steve Dreistadt. (University of California, 1998). The 180 color photographs and 140 line drawings make this handbook

an essential guide in finding, identifying and using natural enemies to control pests on farms, gardens and many landscape situations. The text begins with an overview of the benefits of biological control and a 'quick guide.' The 'quick guide' lists specific pests, their corresponding natural enemies and page numbers to find more detailed information in the following chapters. The remain-

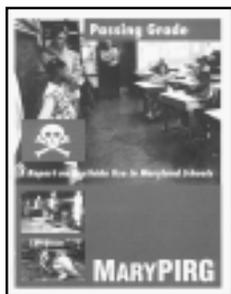
ing chapters specifically address biological controls for plant pathogens, nematodes, weeds, and arthropods. Not only do these chapters identify natural enemies, but they also discuss how to effectively use them in different settings. The handbook explains life cycles, habitats and other important details regarding the biological control species. Information covering arthropods is the most extensive, with over half the text specifically discussing their parasites, predators, and pathogens. For example, the *Trichogramma nubilale* has been successful in controlling the European corn borer. Mosquitoes can be controlled with microbial insecticides *Bacillus sphaericus*, *Bacillus thuringiensis* ssp. *Israelensis*, and *Lagenidium giganteum*, predatory flies, phantom midges, predatory mosquito fish, *Gambusia affinis* and aquatic predaceous bugs and beetles. The text also discusses how natural enemies are often susceptible to pesticides. The back of the text contains a supplier list, cited references and a comprehensive index. This excellent resource would be useful for any farmer or gardener looking for alternatives to pesticides.

For a copy (154 pp.) send \$35ppd to University of California, Division of Agriculture and Natural Resources, 6701 San Pablo Ave, Oakland, CA 94608, 510-642-2431, 800-994-8849, danrcs@ucdavis.edu, <http://www.ipm.usdavis.edu>

Passing Grade:

A Report on Pesticide

Use in Maryland Schools



Lea Johnston, (MaryPIRG, September 1998). MaryPIRG investigated pesticide use in Maryland schools (prior to the new prior-notification and

pesticide reduction law passed Spring 1998) and found that many of the schools' policies are protective, but there is still room for improvement. Though routine spraying is not common, some highly toxic pesticides are still used. MaryPIRG collected information from 17 of the 24 school districts, and of these, 18% reported using probable or known carcinogens, 88% reported using possible carcinogens and reproductive toxins, and 41% used nerve toxins. The 17 districts that responded to the inquiry encompass 988 schools in urban, suburban, and rural areas. Twelve school districts submitted their integrated pest management (IPM) plans, but 42% of these plans did not mention reducing outdoor pesticide use, such as on playing fields. As of Spring 1998, Maryland Public Assembly passed HB 286 which requires prior notification of pesticide applications to staff and parents, and IPM plans that include pesticide use only "when nontoxic options are unreasonable or have been exhausted," in elementary schools for the school year 1999-2000. As of the time this report was written, only 24% of the schools were offering prior notification, so activists hope that implementation of the 1998 law will raise this number to 100% and decrease toxic hazards in Maryland schools. An appendix charts each school district's individual responses on chemicals used. For a copy (22pp), send \$20ppd to MaryPIRG, 3121 St. Paul Street, Suite 26, Baltimore, MD 21218, 410-467-0439, marypirg@pirg.org, <http://www.pirg.org/marypirg>.

Tobacco, Farmers

and Pesticides:

The Other Story

(Pesticide Action Network, North America Regional Center (PANNA), May 1998). A timely background paper given the current sanctions against the tobacco industry, PANNA points out that addiction to nicotine is not tobacco's only

harmful effect. According to the factsheet, at least 25.6 million pounds of pesticides are used on tobacco each year in the U.S., and 450 different pesticide products are registered for use on tobacco by the EPA. This ranks tobacco among the top crops regularly sprayed with pesticides. It is also a very valuable crop: in 1995 it was the seventh largest cash crop in the U.S. Many of the pesticides used on tobacco are toxic to wildlife including insecticides aldicarb and ethoprop. In 1997, over 5.5 million pounds of methyl bromide were applied to tobacco fields worldwide, according to PANNA. Now tobacco companies are moving to developing countries to produce the crop more cheaply, often to places with fewer restrictions on pesticide use and lower labor standards. This is alarming because, for example, an instruction leaflet distributed to Kenyan farmers recommends 16 separate pesticide applications per three month growing season. "Over six million tons of tobacco are grown in the developing world" according to PANNA. Many times pesticide labels are not written in the native language of the user or the users are illiterate, so they are left unaware of the toxic dangers of the pesticides. Also, protective gear is expensive and too hot to wear in warm climates. It is not uncommon to see tobacco growers in shorts and t-shirts while mixing or applying pesticides.

Of course this means even more of a public health concern for smokers as well: smokers may be inhaling pesticides residues because the USDA only tests one sample for every 100,000 pounds of processed tobacco. The agency also only tests for residues of chemicals no longer used in the U.S., with no tests being done for chemicals legally registered for use on tobacco in the U.S. For a free copy (6pp), contact PANNA, 49 Powell Street, San Francisco, CA 94102, 415-981-1771, panna@panna.org, or get it from their website at <http://panna.org/panna>.

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- "Is Your Lawn Toxic Green?" White letters on green background.
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- A Failure to Protect*. Landmark study of federal government pesticide use and pest management practices. \$23.00. *Summary and Overview* \$5.00.
- The Chemical-Free Lawn: The newest varieties and techniques to grow lush, hardy grass with no pesticides no herbicides, no chemical fertilizers*. By Warren Schultz. Published by Rodale Press. \$17.95 (14.95 + \$3.00 shipping).
- Unnecessary Risks: The Benefit Side of the Risk-Benefit Equation*. Understand how the EPA's Risk-Benefit Analyses falsely assume the need for high-risk pesticides. Explains how "benefits" are inflated, how alternatives might be assessed, and the public's right to ask more from its regulators. \$10.00.
- Safety at Home: A Guide to the Hazards of Lawn and Garden Pesticides and Safer Ways to Manage Pests*. Learn more about: the toxicity of common pesticides; non-toxic lawn care; why current laws offer inadequate protection. \$11.00
- Voices for Pesticide Reform: The Case for Safe Practices and Sound Policy*. New study documenting stories of tragic pesticide poisoning and contamination, and successfully used alternatives that avoid toxic chemicals. \$20.00
- Poison Poles: Their Toxic Trail and the Safer Alternatives*. New study on largest group of pesticides, wood preservatives, and contamination associated with treated wood utility poles, and the availability of alternatives. \$22.00

Compilations

- Pesticides and You, 1981 - 1991*
450 pages, with comprehensive index. \$50.00
- NCAMP'S Technical Reports, 1986-1990*. \$50.00

Brochures (\$2.00 each; bulk discounts available)

- Pest Control Without Toxic Chemicals
- Least Toxic Control of Lawn Pests
- Agriculture: Soil Erosion, Pesticides, Sustainability
- Organic Gardening: Sowing the Seeds of Safety
- Estrogenic Pesticides
- Pesticides and Your Fruits and Vegetables
- Pesticides: Are you being poisoned without your knowledge?
- Pesticides in Our Homes and Schools

Testimony

- Children & Pesticides, 9/13/90 \$4.00
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- FIFRA - Federal Insecticide, Fungicide, and Rodenticide Act, 6/8/93 \$4.00
- Food Safety, 8/2/93 \$3.00
- National Organic Standards Board, 10/13/94 \$4.00
- Food Quality Protection Act, 6/7/95 \$4.00

Other

- NCAMP's Pesticide Chemical FactSheets; individual: \$2.00, book: \$20.00
- Least Toxic Control of Pests Factsheets \$6.00
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P L E A S E J O I N U S F O R

*The Seventeenth National Pesticide Forum
and Eighth Annual California Pesticide Organizing Conference*

BEYOND PESTICIDES: POLLUTION PREVENTION IS THE CURE

May 14-16, 1999 • Santa Barbara, California

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National Coalition Against the Misuse of Pesticides (NCAMP)
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YES

NCAMP is teaming up with the California statewide group Pesticide Watch again in 1999 to bring people together for one of the most important pesticide meetings and only national grassroots pesticide conference of the year. The range of people — activists to scientists, farmers to policy makers — who will be attending this conference is awesome and inspiring. It will charge your batteries and inspire you to move ahead with your local and statewide campaign or start a new one. There is no better person to lead the inspirational chorus than the keynote speaker Sandra Steingraber — a Ph.D. biologist and an accomplished poet, activist, and author of *Living Downstream*. Other exciting speakers will be announced.

The ultimate protection from the adverse effects of pesticides is avoidance of exposure and elimination of use.



Sandra Steingraber

This solution may or may not be possible in various situations at the present time, but it is certainly a goal for many communities and school districts that are now seeking to better protect people from environmentally induced diseases, like cancer, neurological disorders, respiratory illness, and others.

Our theme this year calls for a deeper look and commitment to moving away from a reliance on pesticides in pest management systems across the board. It is also a warning that new technologies, such as bio-engineered food crops, may be bringing us a new genetic pollution, insect resistance and productivity problems that will create more pesticide dependency in the future, not less.

We hope to see you in May. Watch your mail for a preliminary program with details or contact NCAMP.

Pesticides and You

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