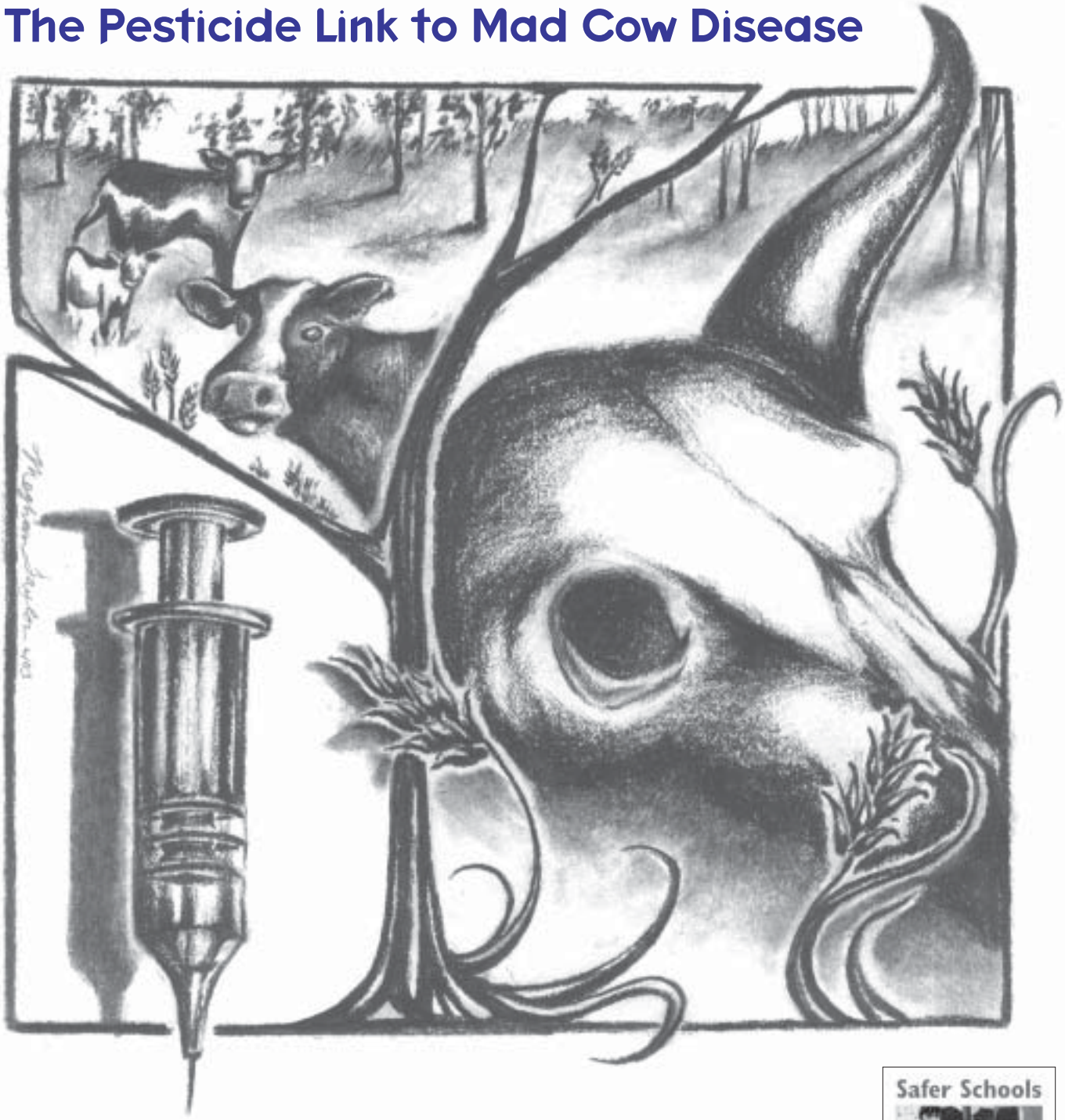
Volume 23, Number 2 Summer 2003

Pesticides and You

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

The Pesticide Link to Mad Cow Disease



Safer Schools: Achieving a healthy learning environment through Integrated Pest Management

Pests in the Pantry: Keys to moth management

Major Problems Demand Major Solutions

Beyond Pesticides is an organization dedicated to identifying problems and working on solutions. Often our proposed solutions are attacked by those focused on short-term cost, rather than long-term environmental, social or economic benefit. Nevertheless, for over two decades we have been raising concerns about pesticide hazards and offering challenging solutions.

We argued for years that organic approaches to agricultural production were a solution to the hazards associated with conventional chemical-intensive agriculture. Some told us that the solutions we were advocating on Capitol Hill would cost us our credibility, knowing that credibility is critical to a national advocacy organization like ours. We were told not to mention the "O" word on Capitol Hill. Well, I testified with Bob Rodale and we both advocated the "O" word with a strong belief that it provided the solution to a growing pesticide problem. That's "O" for organic.

We pressed on, credibility in hand. Some told us the solution was not commercially and economically viable. We were told that the *Organic Farming Act* (renamed the *Agricultural Productivity Act*) and the *Organic Foods Production Act* (OFPA) could not pass Congress. We pressed on. Two decades later organic has become almost mainstream and extremely commercially profitable. There is a bipartisan coalition in support of organic that is perhaps one of the strongest grassroots movements that has come on the scene in a long time. When the media reported that Congress had passed an amendment last year which weakened OFPA by allowing conventional feed to be fed to organically labeled chicken, the outpouring of public concern facilitated a Congressional reversal in three months time – a remarkable accomplishment for the organic movement in any Congress, let alone this one. While we have critical work to do to build and protect the integrity of organic, it is certainly a major solution.

Safer Schools

Now we are faced with a parallel challenge in the school environment. We are on the cusp of major change that is moving across the country. The change that is coming is reflected in this issue of *Pesticides and You (PAY)*, which contains excerpts of our recent report, *Safer Schools: Achieving A Healthy Learning Environment Through Integrated Pest Management*. The report was put together by Beyond Pesticides and the School Pesticide Reform Coalition, a coalition of school pesticide reform advocates. The school reform descriptions themselves were authored by individuals representing advocacy organizations, state agencies, pest management companies and school staff. They highlight the advances made by 27 school districts and individual schools in 19 states to reduce pesticide use in their schools. These schools have identified the problem of pesticides adversely affecting children and have embraced major solutions that are effective and cost-saving. The coalition behind this effort and the variety of authors illustrate the depth and breadth of the changes that are sweeping schools across the country. But we are not there yet. Children and pesticides do not mix. The problems are clearly identified, as are the solutions. And yet, all children in our country do not yet have the right to learn in a healthy environment, free of pesticide exposure. While 13 state laws and 320 local policies embrace the notion that we should adopt integrated pest management programs (IPM) in schools, only Massachusetts has banned pesticides with specific effects like cancer. A bill just died in the California Senate, after passing the Assembly, which would have done the same thing. Meanwhile, other states impose levels of restrictions on pesticides with specific toxicity ratings or create allowable materials lists. We press on.

Mad Cow Disease

Moving to another big problem. I met Mark Purdy, a British organic beef producer, last year when he came to visit me to talk about his research and theories on the causes of Bovine Spongiform Encephalopathy (BSE), commonly known as mad cow disease. The issue is now very close to home as cattle were diagnosed with BSE in Canada earlier this year. Mark, the author of *The Pesticide Link to Mad Cow Disease* in this issue *of PAY*, is a quiet soft-spoken man who has put forth an incredible theory, supported by credible evidence linking organophosphate pesticide use on cattle with BSE. He has had his credibility challenged after putting forth the facts. Mark has said, "I just hope that the beef industry in America realizes that we're not as "way out" as has been suggested. The industry is shooting itself in the foot by rejecting the link to toxic mineral excess and organophosphate pesticides. We have accumulated so much hard evidence now—more than all other theories." Mark presses on.

City Bans West Nile Virus Spraying

This just in at press time. The City of Lyndhurst, Ohio has adopted an ordinance that bans pesticide spraying for adult mosquitoes to control West Nile virus. The City looked at the evidence, found the spraying to be ineffective and proposed alternative preventive measures. The Council concluded, "[The] dangers of WNV are minimal and affect a very small segment of the population and…the long-term health and environmental risks of spraying with synthetic pesticides poses a much greater risk." Congratulations to Lyndhurst and the Ohio Coalition Against the Misuse of Pesticides! *For a copy of the ordinance, see our website, www.beyondpesticides.org or write us.*

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

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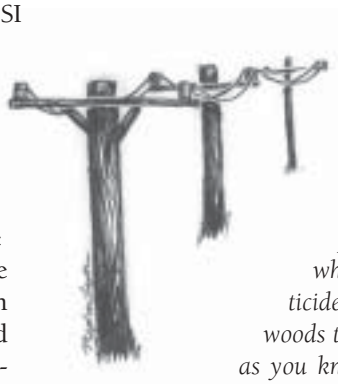
Pushing for Safer, More Sustainable Utility Poles

Dear Beyond Pesticides,
I am a small business pole peeling plant operator. I live in British Columbia, Canada, where my family and community have been producing western red cedar poles for some years. My company and all my employees are knowledgeable with all current regulatory systems and standards regarding the environment and industry, including the provinces forest practices codes (some of the most stringent in the world), ISO certification and requirements, CSA & ANSI as well as the highest standards for workers compensation and safety and Canadian labor codes.



We make utility poles for cites and towns across our great land and we make them well. Our poles are made from second growth western red cedar harvested in our protected and well-managed forests of British Columbia. Our poles require minimum to no treatment for them to fulfill their role in the power and utility workplace. We make good poles at cost effective prices, naturally. Our pole peeling plant is currently being powered by B.C. Hydro and produces next to no harmful emissions. Wood waste produced by the plant will help to fuel a new wood waste company, Generation Plant, locally owned and operated. We feel good about what we do, and know what we are doing is right.

Check the origin of the steel poles you cite as alternatives. It would shock most people in our democracy to know how many poles are made in or with products that originate from countries that do not have the same standards of life that we do. Check out the size of the hole in the ground or the incredibly destructive mechanisms used in producing your fossil fuels to make steel, plastics or concrete. Concrete from third world nations in South America carried on the backs of the downtrodden, the underprivileged and the oppressed. Compare these and liken them to your argument regarding utility pole alternatives, and then put a cost on them.

Travis O'Brien
British Columbia, Canada

Dear Mr. O'Brien:
Thank you for your letter and background on the good work that you do. It sounds like you may have a sustainable solution to wood utility pole production. In fact, in our report, Poison Poles*, we recognize that there are some more sustainable woods, like western red cedar, that do not need as much treatment, noting that there are some silviculture practices that are pesticide dependent. We also note that most of the red cedar that is used for utility poles is only butt treated, which results in less toxic pesticide use. We also point to other woods that could be utilized. But, as you know, and we found out in our survey work, the vast majority of utility poles in the United States that are coming on line are produced from southern yellow pine. As you can appreciate, this is probably an inappropriate choice and therefore requires the heavy use of wood preservatives to make it a viable choice. Part of the problem with the utility pole industry today, like much of our world, is that it is looking for a quick fix, in this case a quick growing wood alternative. By the way, we also talk about burying utility lines as another alternative.*

We understand the downside of recycled steel and other non-wood alternatives and have clearly written about them in our report, Poison Poles*. I think we would agree that there is no perfect solution. It is really a question of doing what is most sustainable.*

It would be terrific if we could further publicize sustainable tree production and use of wood poles, explain what goes into it, cost, the renewable resource aspects and other issues. Any assistance you could provide on this would be appreciated.

For a copy of our report Poison Poles *($22), please contact Beyond Pesticides. Portions of the report are on our website at www.beyondpesticides.org/wood.*

Invasives Disturb the Neighborhood

Dear Beyond Pesticides,
I live in a large cooperative surrounded by 82 acres of woods in Greenbelt, MD. Because the woods are being invaded by plant species of non-native origin, a Woodlands Committee began an eradication program to target mainly English ivy in trees and on the ground. The first part of this program began in October 2002 when a contractor mixed two pesticides together, Roundup and Garlon, and sprayed them on five acres of woods in the middle of a subdivision (at which time they drifted into my yard). All committee members recently voted to use a third pesticide, 2,4-D (Weedar-64), because the first application did not kill the ivy. Essentially, this wooded area is being used as a test plot for herbicide experimentation and when they find the pesticide that works, it will be used all over our community. I am attending a meeting tonight with the Board of Directors of my cooperative. They are well meaning, but have little information to assist them in decision-making about this topic of pesticides. The city horticulturist is relying on public opinion about aesthetics, such as at ball fields and parks, but he is open to discussion. People are becoming more aware of this plan and we have formed a group called "STOP IT" (Stop Trucking Out Pesticides: Instead Team up). I would appreciate anything you can do to help us find a solution to this situation.

Jean Newcomb
Greenbelt, MD

Dear Ms. Newcomb:
Thank you for sharing your story and efforts with us. Your coalition and work is extremely important considering the potential harm of community-wide herbicidal applications. The chemicals you mentioned are all rated as toxic by Be-

yond Pesticides. Glyphosate, the active ingredient in Roundup, can lead to a number of acute symptoms including swollen eyes, face and joints; facial numbness; burning and/or itching skin; blisters; rapid heart rate; elevated blood pressure; chest pains, congestion; coughing; headache; and nausea. According to the Environmental Protection Agency (EPA), 2,4-D is irritating to the eyes, skin and mucous membrane and since it is easily absorbed dermally or by inhalation, it can injure liver, kidney, muscle and brain tissues. In addition, there is an incriminating body of evidence suggesting the carcinogenicity of 2,4-D. Among such research, a manufacturer's study submitted to EPA in June 1986 indicated 2,4-D could cause rare brain tumors (astrocytomas) in rats. A 1991 National Cancer Institute study found that dogs whose owners' lawns were treated with 2,4-D four or more times per year were twice as likely to contract canine malignant lymphoma than dogs whose owners did not use the herbicide. Triclopyr, the active ingredient in Garlon, has a low to moderate acute toxicity rating. However, it is quite persistent. A Swedish study found residues of triclopyr persisting for one to two years, and in some cases beyond two years. Under favorable degradation conditions (95°F and high moisture), Dow reports a half-life of 46 days. Such persistence is especially important when taking into account the unknown effects of combinations of chemicals. Research of the synergistic effects of exposure to all of these herbicides together is inadequate.

Additionally, the total chemical body burden of community residents must be considered. As more and more chemicals are sprayed in a community, the possibility for exposure to each one can add to each community member's own toxic load. Most human beings contain within their body a number of chemicals from environmental contamination. As this load increases, so does the potential for chemical sensitivities and other health problems. The Centers for Disease Control and Prevention (CDC) recently released the second National Report on Human Exposure to Environmental Chemicals, *which detected a total of 89 chemicals in the volunteers tested, including selected organophosphate pesticides, herbicides, pest repellents and disinfectants. The Environmental Working Group (EWG), in partnership with Mt. Sinai School of Community Medicine and Commonweal, released a similar study,* Body Burden: The Pollution In People, *in which subjects contained an average of 91 compounds, most of which did not exist 75 years ago.*

Use this information to get the message across to people the harm that such chemicals cause. In addition, make sure it is known that viable alternatives to manage invasive weeds do exist. Manual and mechanical processes to control this invasive can be used even on a community-wide scale, as was demonstrated by the Ivy Removal Project in Portland, Oregon. See www.noivyleague.com for more information. Studies have shown that mechanical removal is more effective against regrowth of English Ivy than using chemicals, in part because of English Ivy's waxy leaf cuticle that makes it nearly impervious to broadcast spray application of typical herbicides.

It sounds like you've gathered some support for your movement. This is an important first step in creating change in your community. As your group continues expanding, extend your efforts and concerns to a wider audience. Reach out to doctors, schools, the PTA, public health groups, environmental organizations; anyone who would have a stake in your concerns about toxic chemicals in the community. This will get your message across a greater portion of the community which will then support you. For further local support, check out Beyond Pesticides' State Pages (www.beyondpesticides.org/states/), where you can find activists, news and issues currently in your state. Additionally, Beyond Pesticides' Community Pest Management Evaluation Toolkit ($12 ppd) is a good resource for assessing the dangers of a pest management plan and proposing safer alternatives in your area. Contact Beyond Pesticides for a copy.

Note of Thanks

Dear Beyond Pesticides,
I am sending you a note of thanks for your persistence in increasing public awareness of toxins in daily life. You helped me with information by phone in 1994, when I was first chemically injured.

Recovery has been slow but I am blessed and grateful to be able to explore the internet occasionally. It was a pleasant surprise to see such good information on your website.

Right now all I can offer you is prayers and good wishes. It is good to see awareness becoming mainstream. Keep up the good work. Thank you.

Connie Klille
Hadden Heights, NJ

Dear Connie,
Thank you for your thoughts and encouragement. We are pleased that Beyond Pesticides' website has grown to the #1 "pesticides" site on Google.com and Yahoo.com, ensuring wider and wider distribution of information that will stop pesticide poisoning and contamination and help put alternatives in place.

Beyond Pesticides' website also offers information and resources to people suffering from chemical injuries and sensitivities. Many of those who have contacted Beyond Pesticides concerning a chemical exposure have helped us tremendously by filling out a Pesticide Incident Record. This is a form that fully documents an exposure and allows us to build the case for pesticide reform. Please contact Beyond Pesticides to receive a form, or find one on our website at www.beyondpesticides.org .

Write Us!

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

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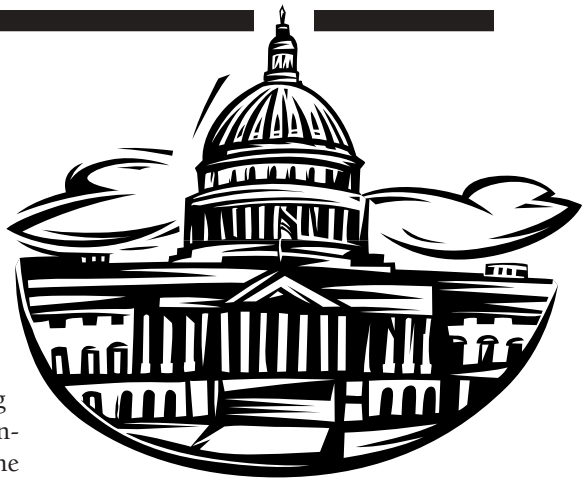


GAO Tobacco Report Clears the Smoke-screen on Pesticides

When a Member of Congress thinks a federal government program needs an audit, the U.S. General Accounting Office (GAO) is called. Recently, Congressman Henry Waxman asked the GAO for information on how the federal government addresses the public health implications of pesticides on tobacco. In its report, *Pesticides on Tobacco: Federal Activities to Assess Risks and Monitor Residues* (GAO-03-485), released April 24, 2003, the GAO uncovered some general and critical deficiencies in the regulation of pesticides while taking a specific look at tobacco production and pesticide residues in tobacco smoke. With respect to pesticides, the report finds that pesticides used on tobacco but not food crops do not have residue limits set for them. According to GAO, "[B]ecause it is not a food, tobacco is regulated as a nonfood crop with regard to pesticide residues. That is, no residue limits are established or monitored for pesticides approved for use on tobacco, as is done for foods." Additionally, the report noted that: EPA does not fully study the chronic effects of pesticides; EPA is out of compliance with regulatory standards of safety; and, EPA evaluations of studies are not always available. GAO also points out that workers are exposed to a number of harmful pesticides, including organophosphates, which have been linked to depression and suicide rates twice the national average in Brazil, a leading tobacco exporter. Domestically, tobacco is grown in 16 states, 2 of which—Kentucky and North Carolina—produce about two-thirds of all domestic tobacco. According to the GAO, about 27 million pounds of the 37 pesticides are used annually on tobacco. *For a copy of the report visit www.gao.gov/new.items/d03485.pdf, or call Beyond Pesticides for a hardcopy.*

FDA Warns Consumers of Dangers Posed by Lindane

On March 28, 2003, the Food and Drug Administration (FDA) issued a Public Health Advisory concerning the use of topical formulations of lindane lotion and lindane shampoo for the treatment of scabies and lice. FDA's *Lindane Medication Guide*, designed to inform patients of the risks of lindane products and provide instructions for appropriate use of the drugs, must now be dispensed by the pharmacist with each new prescription. The box's warning emphasizes that it is a second-line treatment, updates information about its potential risks, especially in children and adults weighing less than 110 pounds, and reminds practitioners that reapplication of lindane is not the appropriate treatment if itching continues after the single treatment. Lindane, an organochlorine pesticide, is approved for topical treatment of pediculosis and scabies in patients "who have either failed to respond to adequate doses, or are intolerant of, other approved therapies." Lindane has been on the market since 1951, but was labeled as second-line therapy in 1995 because there are safer alternative treatments that should be used first. Many alternative treatments exist for lice and scabies that are equally effective, not to mention more protective of human health. Beyond Pesticides has developed several resources for the least toxic control of head lice and scabies. *For more information on alternative treatments, see www.beyond pesticides. org/alternatives/factsheets. The warning is posted at http://www.fda.gov/cder/drug/infopage/lindane/default.htm.*

Government Researchers Use Catnip Oil to Repel Termites

Hoping to provide a natural alternative to toxic chemical termiticides, USDA Forest Service researcher Chris Peterson, Ph.D. has determined that catnip oil repels and even kills termites in laboratory experiments. Dr. Peterson, a researcher with the Forest Service Southern Research Station (SRS) presented the results of his team's research at the national meeting of the American Chemical Society in March 2003 in New Orleans. "The USDA Forest Service routinely tests about three new termite formulations for effectiveness every year, with a new active ingredient tested about once in every two years," said Dr. Peterson. "Natural compounds from plants, bacteria, and fungi could provide new commercial products that are less toxic to humans and the environment." For their study, the researchers infused sand with catnip essential oil, the kind routinely sold in pet stores, to test the effectiveness of the oil as a barrier to termite tunneling. The researchers tested both vertical and horizontal tunneling. In both tests, catnip oil reduced or eliminated termite tunneling. However, catnip oil breaks down quickly in the environment. "There is the inevitable tradeoff," said Dr. Peterson. "Chemicals that last a long time also have greater potential for environmen-

tal damage. We hope that the active ingredients in catnip oil can eventually be modified to last longer." Previous work by Dr. Peterson has shown catnip oil to be an effective mosquito repellent.

Pesticides Linked to Prostate Cancer

Yet another study has shown the increased risk of disease in people who regularly use pesticides. According to the National Cancer Institute (NCI), exposure to certain agricultural pesticides has been linked to an increased risk of prostate cancer among pesticide applicators, based on the findings of a large study looking at the causes of cancer and other diseases in the farming community. The study, part of a long-term study of pesticide applicators and their spouses by NCI, EPA and the National Institute of Environmental Health Sciences, appears in the May 1, 2003, issue of the *American Journal of Epidemiology*. The report evaluated the role of 45 pesticides and found that a few of them showed evidence of a possible association with prostate cancer among pesticide applicators. Methyl bromide was linked to the risk of prostate cancer in the entire group, while exposure to six other pesticides was associated with an increased risk of prostate cancer among men with a family history of the disease. "Associations between pesticide use and prostate cancer risk among the farm population have been seen in previous studies; farming is the most consistent occupational risk factor for prostate cancer," said Michael Alavanja, Dr.P.H., from NCI's Division of Cancer Epidemiology and Genetics in Bethesda, MD. The current study, which looked at 55,332 male pesticide applicators, finds that the risk of developing prostate cancer is 14 percent greater for pesticide applicators compared to the general population. *For further information on the study, visit www.aghealth.org.*

U.S. Challenges Europe's Policy on Biotech Crops

Don't let your environmental policies or concern for human health stand in the way of free trade! The Bush administration has warned that it is bringing a case in the World Trade Organization (WTO) against the European Union (EU) over its five-year moratorium on the commercial development of genetically engineered (GE) foods. The U.S. has been joined by Australia, Chile, Colombia, El Salvador, Honduras, Mexico, New Zealand, Peru and Uruguay. The U.S. argues that the EU policy is an "illegal" trade barrier under WTO rules, harming the U.S. economy, stunting the growth of the biotech industry and contributing to increased starvation in the developing world. However, under WTO rules, members are allowed to develop their own approval procedures, and EU officials say this is what they are doing. Environmentalists believe the move is the latest in a series of attempts by the U.S. to block other countries' decisions to protect their environment, human health and social standards. "The Bush administration is catering to the interests of major biotech corporations rather than human health," said Brent Blackwelder, president of Friends of the Earth. "They have been reduced to using the secretive and undemocratic procedures of the WTO to try to force people into accepting food they do not want." The move could bring the full force of WTO sanctions to bear in order to force GE food into European markets regardless of the wishes of European consumers. WTO procedures are complex and secretive, and have been heavily criticized by environmentalists and others for their anti-environmental bias. In particular, WTO rules are hostile to the fundamental precautionary principle.

Senate Report Recommends School Health Improvements and Passage of SEPA

U.S. Senator Jim Jeffords (I-VT) announced on April 30, 2003 the release of a report coordinated and prepared by the U.S. Green Building Council (USGBC) for the Senate Environment and Public Works Committee (EPW). The report demonstrates the economic and environmental viability of building high-performance "green" buildings and focuses in part on the school environment. According to EPW, buildings that meet the standards of the report increase workers' productivity, consume less energy and water, produce less waste, and can save significant natural and monetary resources in operation and management costs. The report's school focused recommendations include: strengthening EPA's indoor air quality programs for schools; implementing the Healthy and High Performance Schools provisions of *Leave No Child Behind Act*; funding school environmental quality research; expanding the federal Pediatric Environmental Health Specialty Units to allow work onsite with schools; and enacting the School Environment Protection Act (SEPA) to promote safer pest management practices. SEPA, which has been introduced this session in the House (HR 121) and Senate (S 448), provides basic levels of protection for children and school staff from the use of pesticides in public school buildings and on school grounds by requiring schools to implement an integrated pest management (IPM) program and provide parents, students and staff prior notification of pesticide applications.

Survivors of Pesticide Plant Explosion in Bhopal Bring Demands for Justice to Dow Chemical

On the night of December 2-3, 1984, the people of Bhopal, India experienced the world's worst chemical disaster ever, when lethal gases began spewing from a Union Carbide pesticide factory. Nobody outside the factory was warned because the safety siren was turned off. The incident left an estimated 8,000 dead in the first week alone and has been linked to hundreds of thousands of deaths since. Today more than 120,000 people are still in need of urgent medical attention. Activists have argued that the immediate causes of the disaster are related to a cost-cutting drive initiated by Union Carbide, which planned to enhance profits by reducing the number of personnel; lowering minimal training for operatives from six months to 15 days; use of low quality construction material and day labor; cutting down on vital safety measures and the adoption of hazardous operating procedures.

Nearly two decades later on May 8, 2003, eight days into a twelve-day hunger strike, Rasheeda Bee and Champa Devi Shukla, two survivors of the Bhopal disaster, along with long-time activist Satinath Sarangi, brought demands for justice to top executives of Dow Chemical, which acquired Union Carbide (and all of its liabilities) in 2001. The hunger-strikers, along with delegates from the International Campaign for Justice in Bhopal, addressed Dow shareholders and CEO William Stavropoulos at Dow's Annual General Meeting in Midland, MI. The activists are demanding that Dow face trial, ensuring that Warren Anderson, former chairman of Union Carbide, ceases absconding from criminal justice in India. They are also insisting that the company provide long-term health care and financial compensation for victims and family members and cleanup the ground water and soil around the abandoned Union Carbide factory. "Dow can deny its liabilities all it wants. But its liabilities and our struggle will only grow as time passes. As long as Carbide's toxic legacy continues to haunt Bhopal, Carbide's liabilities will haunt Dow and its shareholders," said Mr. Sarangi. *The International Campaign for Justice in Bhopal is calling on supporters and justice campaigners around the world to take over and fast in relays from now until the 19th anniversary of the Bhopal gas disaster. They declared December 3 to be the Global Day of Action Against Corporate Crime. For more information, visit www.bhopal.net.*

David vs. Goliath Genetic Engineering Battle To Be Heard By Canadian Supreme Court

Despite best efforts by Monsanto's army of lawyers, the biotech giant couldn't keep the Canadian Supreme Court from hearing the appeal of Canadian farmer Percy Schmeiser. Mr. Schmeiser was sued and defeated by Monsanto when he refused to pay a "technology fee" for possessing genetically engineered (GE) material after Monsanto's "Round-Up Ready" canola pollen drifted on and contaminated his crops. The Canadian high court has now agreed to hear Mr. Schmeiser's appeal, which is challenging past rulings that held him liable for over $170,000 in damages and previous legal costs. After learning that the Supreme Court would hear the case, Mr. Schmeiser's attorney Terry Zakreski said, "It's a big thrill and it's great news to hear this, but much work lies ahead. I compare this to Mount Everest. We've come all this way and we are only at about base camp. All the tough climbing is still ahead." Many farmers believe that Monsanto plans to force farmers into

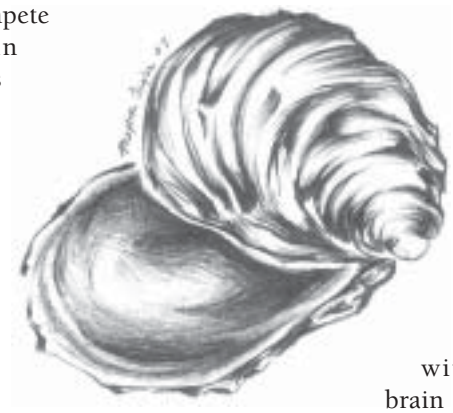
accepting genetically engineered products. This is why Mr. Schmeiser is standing up to Monsanto in court. "I'm going to fight, and fight and fight," he says. "Because I believe what is happening to farmers is wrong. And I'm fighting this not just for myself, but for my children and my grandchildren and for my farmer friends." *Percy Schmeiser told his story as part of a Globalization Panel at the 21st National Pesticide Forum at the University of Texas at Austin. For a videotape of his session, which also features talks by Friends of the Earth President Brent Blackwelder and Global Trade Watch's Mary Bottari, contact Beyond Pesticides.*

New York Attorney General To Sue Dow AgroSciences For Misleading Ads

It looks like more bad news for Dow Chemical. On April 2, 2003, New York State Attorney General Eliot Spitzer announced plans to sue the company for violating an agreement against false advertising of its products. The action alleges repeated violations of its 1994 agreement governing the advertising of Dursban, a widely used organophosphate pesticide containing the active ingredient chlorpyrifos. An investigation in the early 1990s by the Attorney General's Office found that Dow engaged in false and misleading advertising that violated both state and federal laws. In exchange for not paying fines for its illegal advertising claims, Dow signed an agreement in 1994 pledging to reform its advertising and marketing practices. However, since the agreement, Dow AgroSciences has continued to advertise the safety of Dursban products, claiming they have no "long term (health) effects," and that the pesticide exhibited "no evidence of significant risk to the environment." The lawsuit against Dow AgroSciences, which will be filed in New York State Supreme Court in Manhattan, seeks a court order directing the company to cease its deceptive advertising and pay substantial monetary penalties. "Consumers must not be lulled into a false sense of security by misleading safety claims," Mr. Spitzer said. "They should be urged to use pesticides only with the utmost caution." Citing impacts on children's health, EPA began a partial phase-out of the pesticide in 2000.

Washington Oyster Growers Agree to Phase Out Controversial Pesticide Use

Want to use a pesticide to kill something that it is not legally registered for? No problem! A loophole in the federal pesticide law (FIFRA) allows interested parties to get permission to use pesticides for unregistered purposes under the "Special Local Needs" section of FIFRA. For years, oyster growers have used this loophole to spray the pesticide carbaryl to kill burrowing shrimp, which compete with oysters in Washington's Willapa Bay and Grays Harbor. After a number of tough meetings, oyster growers and environmental groups reached a compromise to phase out the use of this controversial pesticide use in Willapa Bay and Grays Harbor. Under the terms of the agreement, carbaryl use for the control of burrowing shrimp in oyster culture will be completely phased out by 2012. The agreement settles a disputed water quality permit, which was under appeal by the Washington Toxics Coalition and the Ad Hoc Coalition for Willapa Bay. As part of the agreement, the groups have pledged to work together to develop alternatives that will preserve the environment as well as the oyster industry. "I have alternatives to carbaryl that are working for me on my small farm," said oyster grower Larry Warnberg, who does not use pesticides and is a member of the Ad-hoc Coalition. "This agreement gives the larger producers time to develop alternatives that work for them." The growers must reduce carbaryl use by 10% each year until 2012.



Study of Permethrin Yields Clues to Onset of Parkinson's Disease

Permethrin is one of the easiest pesticides to get your hands on. It's the active ingredient in ant and roach sprays, lice shampoos, mosquito foggers and flea and tick treatments. Recently, a Virginia Tech study funded by a grant from the U.S. Army has linked it to Parkinson's Disease. Jeffrey R. Bloomquist, a neurotoxicologist and associate professor in the university's Department of Entomology, described his findings at the annual meeting of the American Chemical Society in New Orleans on March 24, 2003. The researchers have documented low-dose effects of permethrin, doses below one-one thousandth of a lethal dose for a mouse, with impact on those brain pathways involved in Parkinson's Disease. The effects are consistent with a pre-parkinsonsian condition, but not full-blown parkinsonism. "We found low-level exposures set in motion a process with an early onset that develops slowly and is persistent," Dr. Bloomquist said. "More surprising is that high-level exposures resulted in few immediate effects that we could observe, but in the longer term there was a delayed effect." Like all pyrethroids, permethrin is a central nervous system poison. Workers and researchers report tingling in face and hands, and some report allergic reactions. Based on studies

demonstrating carcinogenicity, EPA ranks permethrin as a class C, or possible human carcinogen. Other studies have shown effects on the immune system, enlarged livers and, at high doses, decreased female fertility.

Study Finds Pesticides Cause Genetic Effect Linked to ADHD and Gulf War Syndrome

For years, physicians have hypothesized that exposure to pesticides has an impact on the rate of attention deficit hyperactivity disorder (ADHD) and neurological disorders. Recently, researchers at the Salk Institute for Biological Studies in La Jolla, California have demonstrated the first clear genetic link between neurological disorders and exposure to organophosphate pesticides and chemical weaponry. The study, *Loss of neuropathy target esterase in mice links organophosphate exposure to hyperactivity*, published in the April 2003 edition of the journal *Nature Genetics* (Vol. 33 No. 5), identifies a gene that scientists had not previously studied in connection with these chemicals and diseases such as ADHD and the Gulf War syndrome. Supported by a $1.5 million grant from the U.S. Department of Defense, Dr. Carrolee Barlow found that organophosphate exposure in mice inhibited the activity of a gene called *neuropathy target esterase*, or NTE. This inhibition either killed the mice before birth, or over time led to a range of behaviors very similar to ADHD. Some of the neurological problems also echoed many of the symptoms seen in Gulf War syndrome. "There have been anecdotal links made between rises in ADHD, Parkinson's disease and other disorders and exposure to pesticides," said Dr. Barlow, an adjunct faculty member at the Salk Institute. "This study shows that there may indeed be a genetic connection that explains how organophosphates can cause these reactions; it's just not what we assumed it would be." Previously, researchers have focused on enzymes that act on neurotransmitters.

Michigan Bans Statewide Use of Controversial Herbicide

On March 18, 2003, Michigan Department of Agriculture Director Dan Wyant rejected a request to allow the controversial herbicide Balance Pro, which contains the active ingredient isoxaflutole, to be used in the state. According to the *Free Press*, the Michigan Department of Agriculture decided not to allow the use

of the herbicide, produced by Bayer CropScience, due to concerns about the product's potential to contaminate surface water and ground water, its classification as a probable human carcinogen and the state's inability to monitor water quality. Conservationists who opposed the herbicide said they were buoyed by the decision. "This is a really commendable action," said Dave Dempsey, policy advisor for the Michigan Environmental Council, which opposed Balance Pro. "It is one of the few times I've seen the Agriculture Department act in a precautionary way." Michigan is not the only state with a severe restriction or ban on the use of the herbicide. Last year, Wisconsin approved its use, but with so many restrictions that Bayer CropScience decided not to sell its product in the state. According to the Environmental Protection Agency (EPA), Balance Pro is registered for use in only 17 states, and has been detected in stream water in several of them. It has been used under a conditional registration from EPA since 1999. A conditional registration was issued by EPA because data indicated that use may result in possible water contamination and effects on non-target plants, including vegetable crops.

Growing Movement for Pesticide-Free Parks

On May 7, 2003, officials of Wichita, Kansas announced plans to ban the use of pesticides in 10 of the city's 105 parks, according to the *Wichita Eagle*. Instead of synthetic chemicals, the city will focus on less toxic methods of pest control and the use of native plant species, such as redbud trees and buckbrush instead of flowering crabapples and spirea. Vice Mayor Sharon Fearey said the community would be invited to give its opinion of how the plan was working. It is hoped that the pesticide-free zones will extend to other parks in the city. Trix Niernberger, a member of the volunteer Wichita Board of Park Commissioners, commented, "We want to raise the public's awareness with the hope that it will be a community wide effort. We want to start slow so people get used to the idea." Wichita is following the lead of Lawrence, KS, in which three parks, totaling 12 acres, were designated as pesticide-free last spring. In addition, Seattle designated six parks as pesticide-free in 2001. In all of these cases, grassroots organizing was the catalyst for change.

Safer Schools

Achieving a healthy learning environment through Integrated Pest Management

Editor's note: The following are excerpts from the recently released Safer Schools report (April 2003). With descriptions of 27 school districts of all sizes from 19 states, the report describes a growing commitment to adopt practices that respond to mounting evidence that pesticides pose a public health hazard while non-toxic, economically feasible pest management options are available. Spearheaded by the School Pesticide Reform Coalition and Beyond Pesticides and written by a broad group of individuals representing advocacy groups, state agencies, pest control companies, and school staff, the report will help encourage schools, states, and the federal government to put in place safer pest management programs for schools and communities nationwide.

Safer Schools is intended to inform school community members and activists, policy decision makers and pest management practitioners, all of who play critical roles in getting schools to implement effective Integrated Pest Management (IPM) programs. This report provides comprehensive details of an IPM program by: (1) explaining what an IPM program is and why it is necessary; (2) highlighting 27 school districts and individual school IPM policies and programs; and, (3) outlining the basic steps to getting a school IPM program adopted. The report also includes a list of contacts that can provide a wealth of information on adopting a school IPM policy and its implementation; a list of states and schools that have an IPM/pesticide policy; and, a pest prevention strategies checklist.

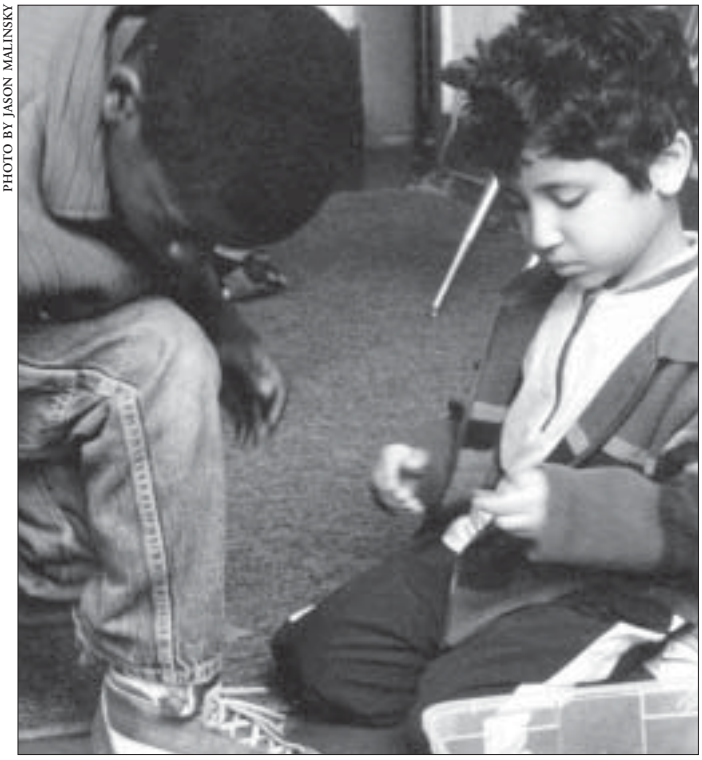


PHOTO BY JASON MALINSKY

IPM is an approach that has been implemented in various communities, schools, and government facilities for decades. Although there are no federal laws regarding school pesticide use and pest management, there is pending federal legislation, the School Environment Protection Act (SEPA), which has been introduced in Congress and adopted by the U.S. Senate twice. There are also 13 state laws and 320 local policies, according to Beyond Pesticides' report, Are Schools Making the Grade?*, National PTA and American Public Health Association resolutions, and numerous government and non-governmental organization resources that focus on the adoption of school IPM programs, all of which can be found at www.beyondpesticides.org/schools.*

An in depth look at Integrated Pest Management (IPM)

IPM is a pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of practices such as regular pest population monitoring, site or pest inspections, an evaluation of the need for pest control, occupant education, and structural, mechanical, cultural, and biological controls. Least-hazardous pesticides should be selected only as a last resort, thus minimizing the toxicity of and exposure to pesticide products that are used.

A key to cutting pest management costs is to look for long-term solutions, not temporary control, when addressing a pest problem. Pesticides do not solve the problems that have created the pest-friendly environment, they only treat the symptoms of an infestation. They are often ineffective over the long term, and the most common pests are now resistant to many insecticides, as are weeds resistant to herbicides.[1]

An IPM program should prohibit:

- Pesticides that are carcinogens,[2] acutely toxic,[3] endocrine disruptors, reproductive and developmental toxins,[4] neurotoxins,[5] immunotoxins,[6] and respiratory toxins.
- Pest management decisions based on aesthetics alone;
- The application of pesticides on a routine basis, whether pests are present or not;
- The application of pesticides while the area is occupied or

Integrated Pest Management (IPM) Defined

IPM is a pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of practices such as:

- regular pest population monitoring;
- site or pest inspections;
- an evaluation of the need for pest control;
- occupant education; and,
- structural, mechanical, cultural, and biological controls.

Techniques include such methods as:

- sanitation;
- pest-proofing waste disposal;
- structural maintenance;
- good soil health; and,
- other non-chemical tactics.

Least-hazardous pesticides should be selected only as a last resort, thus minimizing the toxicity of and exposure to any pesticide products that are used.

may become occupied during the 24 hours following the application; and,

- The application of pesticides by fogging, bombs, or tenting, or by space, broadcast, or baseboard spraying.

For example, the case studies in *Safer Schools* illustrate a series of prohibitions that seek to stop the use of specific hazardous pesticides or application methods, including the following: Los Angeles Unified School District, CA (LAUSD) halted the use of broadcast spraying and the use of pesticide bombs; Boulder Valley School District, CO (BVSD) does not use *any* toxic synthetic pesticides; Montgomery County Public Schools, MD moved away from relying on Dursban, diazinon, and pyrethrum; Evesham Township School District, NJ has eliminated organophosphate, carbamate, and solvent-based pesticides from use in buildings; and, New York City Public Schools, NY (NYCPS) have eliminated spray and fogging pesticide applications. Anchorage School District, AK (ASD) and Baldwin Union Free School District, NY (BUFSD) have specifically banned the use of pesticides for aesthetic purposes.

An IPM program allows low hazard pesticides, such as boric acid and disodium octoborate tetrahydrate, diatomaceous earth, nonvolatile insect and rodent baits in tamper resistant containers or for crack and crevice treatment only, microbe-based insecticides, botanical insecticides (not including synthetic pyrethroids) without toxic synergists, biological control agents, and materials for which the inert ingredients are nontoxic[7] and disclosed, as a last resort.

Six IPM program essentials

An IPM program is made up of six essential components, which together create an effective program. The following are brief descriptions of the IPM components and examples taken from the 27 case studies highlighted in this report.

1. Education. Education, in the form of workshops, training sessions, and written materials, is an essential component of an IPM program, including administrators, maintenance personnel, cafeteria staff, nurses, teachers, parents, and students.

Training school staff at LAUSD is taken very seriously. William Currie, with International Pest Management Institute, has developed 28 different training curricula depending on the target group. Irving Independent School District, TX, (Irving ISD) through Texas A&M extension, provides IPM training twice a year for all maintenance and custodial staff, and once a year for all principals.

Some schools have come up with inventive ways to educate and involve teachers and students. For instance, the West Ottawa Public Schools, MI conduct periodic advertising of their program in area newspapers and performs educational skits on the schools' cable access channel. Lewis Cass Technical High School, MI (Cass Tech) uses artwork projects, educational pamphlets and presentations to involve students in their IPM program. Science curriculum is another excellent way to educate the students about insects and plants (weeds) and involve them in IPM, as is done in the Kyrene School District, AZ and Cass Tech.

2. Monitoring. Monitoring helps identify the nature and extent of a pest problem. This includes regular site inspections and pest trapping to determine the types and infestation levels of pests at each site. Monitoring allows pest managers to properly identify and manage a pest problem before a serious outbreak occurs. Monitoring can also help establish possible causes of the pest problem, such as leaky pipes, food crumbs, cracks in walls or around plumbing, or drought-stressed plants. It is not necessary for the entire school to be monitored, just those areas with the potential for a pest problem, leaving the other areas to be monitored and managed on a complaint basis. A pest logbook is essential to a monitoring program. It allows anyone in the school to document a pest sighting, which enables school-wide communication about potential pest problems.

An inspection checklist with daily, weekly, and monthly tasks is provided to all school custodians and maintenance personnel at the Sherborn Public Schools, MA to help its IPM program run efficiently. The Montgomery County, MD schools divide each school facility into monitoring zones. The primary zone is made up of areas associated with the storage, preparation, and consumption of food and is inspected more frequently than the other zones.

Monitoring traps should be checked weekly, according to the Broad Ripple High School, IN and Albany City School District, NY IPM programs, and site and pest inspections (whether or not a problem is identified) should be reported monthly, according to LAUSD and Broad Ripple High programs. Besides inspecting the buildings and grounds for potential pest problems, Montgomery County, MD schools and Monroe County Community School Corporation, IN (MCCSC) find that inspecting incoming and outgoing food and supplies is critical as well.

Student involvement in the school's monitoring program can save money, as is the case at Kyrene schools and Cass Tech. Students at Cass Tech work with the building engineers and maintenance staff to fix problems they identify, through site inspections and pest monitoring.

Schools can prevent pest problems through proper sanitation and housekeeping, pest-proofing waste disposal, structural maintenance, good soil health, and other long-term, non-chemical strategies.

3. Pest prevention. Non-chemical pest prevention is the primary IPM strategy. Habitat modification that reduces or eliminates sources of food, water, shelter, and entryways, as well as the maintenance of healthy lawns and landscapes, are key. Schools can prevent pest problems through proper sanitation and housekeeping, pest-proofing waste disposal, structural maintenance, good soil health, and other long-term, non-chemical strategies. (For specific pest prevention strategies used by the 27 districts and schools highlighted in this report, see the section titled "IPM Implementation Techniques" on page 13.)

4. Least-hazardous approach to pests. The first approach to controlling a pest outbreak should be to improve sanitation, make structural repairs, and use biological, physical, and mechanical controls such as screens, traps, vacuuming, and weeders. If a mixture of non-toxic strategies is shown to be inadequate, a least-hazardous chemical and application method may be used as a last resort. As the ASD policy states, the selection of the pesticide should be:

- least hazardous to human health;
- least disruptive of natural controls and to non-target organisms;
- least damaging to the school and natural environment; and,
- most likely to produce long-term reductions in pest control requirements.

The types of pesticides used by the schools in *Safer Schools* include products containing boric acid, fatty-acid soap, pheromones, insect growth regulators, and nonvolatile insect and rodent baits in tamper resistant containers or for crack and crevice treatment only. In addition to those, BVSD IPM practitioner has success using basic hand soap, household vinegar, and orange peel extract. Cass Tech uses nematodes and parasitic wasps. LAUSD also reports using hand soap as well as enzyme-based cleaners for insect management. For weeds, LAUSD uses weed killers that contain clove oil as the active ingredient. Corn gluten meal is used as a pre-emergent herbicide at the Carl Sandburg Elementary School, WA and diatomaceous earth is used as an insecticide at the Bainbridge Island School District, WA (BISD).

5. Pesticide use notification. Hazardous pesticides are rarely, if ever, needed in a true IPM program. But in those cases where they are used, school staff and parents have a right to be informed. Notification is especially important for people who are sensitive to chemicals because they can become extremely ill from exposures to very low levels. Laws in 21 states require anywhere between 24 and 72 hour prior written notification of a school pesticide application and 28 states require that notification signs are posted for a school pesticide application.

6. Record-keeping. A record-keeping system is essential to establish trends and patterns in pest outbreaks. Information recorded at every inspection or treatment should include pest identification, population size, distribution, recommendations for future prevention and complete information about the action taken, including the use of any pesticide. A student-assisted IPM program, like that at Cass Tech, can help provide excellent and meticulous reporting and documentation of control tactics and the results.

Facts from the field: what the stories reveal

The 27 case studies highlighted in *Safer Schools* tell a lot about getting an IPM program started and implemented. These are real life experiences that are instructive for all schools and other entities.

Extent of the school IPM program. The argument that IPM cannot be successfully implemented on a large scale or that it is too resource consuming for an individual school is debunked in *Safer Schools*. The case studies highlighted in this report represent a range of program sizes from the three largest school districts in the continental U.S. (NYCPS, LAUSD, and Chicago Public Schools), to medium sized school districts like Irving ISD, to small school districts that have just five schools like Sherborn, to individual schools like Cass Tech and Sandburg Elementary.

There is generally early skepticism among school staff, primarily custodians, about the efficacy of non-toxic and least-hazardous IPM strategies.

Catalyst for change. Implementation of an IPM policy and program may be brought about by an individual, group, or event that spurs the school or district to move away from its conventional pesticide spray program. The stories highlighted in *Safer Schools* are no different. Change in practices is the result of either individuals and organizations working from outside the school system, creating public pressure, or school employees working from inside the school system. In many cases, external and internal pressures work together.

The following are examples of strong organizing efforts by parents and local activist groups described in *Safer Schools:*

- A local organization worked with a youth activist group and discovered, through a state *Freedom of Information Act* request, that toxic pesticides were being used at ASD;
- With a new state law that required schools to implement IPM if financially feasible, a local activist organization created public pressure and developed a pilot project to prove it was cost effective for the entire Chicago Public Schools (CPS) system;
- The local PTA worked with Triadelphia Ridge Elementary School, MD (TRES) to implement a "pesticide-free" pest management program; and,
- Parents and a statewide organization created public pressure and made repeated requests to the Evesham Township schools.

The following are examples of school pest managers or someone from inside the school system advocating for change in pest management practices that are described in this report:

- A university professor working with MCCSC received EPA funding to create a model pilot project that was later extended to other school districts in other states, including Auburn City Schools, AL and Kyrene schools;
- A local pest control contactor with BVSD, Princeton City School District, OH, and Broad Ripple High advocated for the schools' IPM program;
- Albany school's superintendent attended an IPM conference and learned of IPM's benefits;
- The person in charge of pest management at West Ottawa schools learned about pesticides' impact on children; and,
- School administrators, nurses, custodians, and other South Burlington School District, VT staff voiced concern about pest control practices at a school safety committee meeting.

Resistance and skepticism to IPM. Common to many of the 27 case studies is initial resistance on the part of school occupants to behavioral changes required for a successful IPM program. There is generally early skepticism among school staff, primarily custodians, about the efficacy of non-toxic and least-hazardous IPM strategies. Many school staff and pest management practitioners agree that IPM can be challenging at the beginning, when pest levels are high.

In the end, these case studies show that IPM can be effectively and efficiently implemented across the country. At CPS, a school pilot IPM program was shown to be successful before the program was extended to the rest of the District. The pilot program was proof that IPM works, even in schools that are deteriorating and prone to pest problems. "It is important to remember that there is going to be a transition period when starting an IPM program. School staff are going to have to

IPM Implementation Techniques

As the case studies iterate, once the IPM approach is understood, it is as "easy as falling off a log," according to Kyrene. Successful implementation of IPM is based on altering the elements that lead to pest problems: entry, food, water, shelter, and stressed, non-native lawn and landscapes. Schools highlighted in *Safer Schools* rely on the following steps, which result in a decrease or elimination of pest problems and prevent future outbreaks from occurring. *(For additional implementation strategies, see Appendix F of the report for a list of pest prevention strategies or* Building Blocks for School IPM: A Least-Toxic IPM Manual *for prevention and specific pest control strategies, available from Beyond Pesticides in hard copy or at www.beyondpesticides.org.)*

Entry restrictions:

- Caulk or otherwise seal any cracks and crevices and any potential pest entry points;
- Install door sweeps on building perimeter doors;
- Install screens on all intake/outlet ports around the school building to keep wasps and bees out;
- Repair or install window screens; and,
- Install air doors on any doors accessing the kitchen from the outside.

Sanitation strategies:

- Use heavy-duty trash bags which will lead to less cleaning of the cans;
- Store food properly and in air tight containers;
- Deep clean kitchens twice to three times a year;
- Remove garbage more frequently and steam clean garbage cans as needed;
- Use enzyme-based cleaners to remove pests' pheromones left on surfaces and/or use enzyme-based cleaners containing peppermint oil to deter pests;
- Use citronella beads in dumpster to repel pests like bees;
- Refrigerate trash and recycle rooms;
- Move dumpsters away from building; and,
- Use metal containers for storage of food and supplies in the classrooms.

Shelter modifications:

- Do not store boxes or products directly on floor and use shelving made of metal;
- Eliminate the storage and/or use of cardboard boxes; and,
- Clear storage areas of unused materials.

Lawn and landscape maintenance:

- Use string trimmers to mechanically manage weeds;
- Prune trees and shrubs and cut back flowers;
- Apply mulch to suppress weeds;
- Manually weed at least three times per season;
- Overseed and fertilize athletic fields annually to promote growth to keep weeds out;
- Use weeders;
- Plant native vegetation that will be better apt to tolerate local climate plants;
- Use compost;
- Install an irrigation system;
- Dethatch lawn and aerate soil;
- Seal sidewalk cracks;
- Flame weeding, which works well for weeds around portable classrooms, and in sidewalk cracks and gravel; and,
- Use herbicidal soaps and corn gluten meal.

Specific pest control strategies:

- Vacuum **small insects** found in the building and place baby powder in the vacuum cleaner to instantly kill the insects;
- For **crawling insects and small rodents**, use glue traps or glue boards;
- For **rodent** control, use sharp traps;
- For **rodent and gopher** control, have woodwork classes build owl boxes;
- For **wasp and bee** control, use jar traps like the Oak Stump Farm Trap;
- For **bee and wasp nests**, use hot soapy water and remove manually. One suggestion is to attach a scraper on a long pool for removing the nests;
- For **ant** control, use soapy water to kill them on contact and caulk holes;
- For **geese** control, a border collie can effectively chase them away;
- For **bagworm** control, use red spider mites, herbicidal soap and prune;
- For **cockroaches**, use sticky traps and modify their habitat by fixing leaking pipes that provide moisture which attracts them;
- For **pigeons**, place decoys at appropriate locations; and,
- For **termites**, use nematodes.

make some changes," states Jerry Jochim, IPM coordinator at MCCSC. "But after that, it becomes normal routine. IPM may even be less work."

IPM effectiveness. The ability to implement an effective IPM program that controls pest problems while decreasing or eliminating pesticide use is captured by the 27 case studies in *Safer Schools*. As Joseph Tobens of Evesham says, "Rarely is there a need to apply pesticides inside our buildings or on school property." General statements reflect the effectiveness of IPM programs, including LAUSD's finding that there has been "a significant reduction in pesticides used" and the "general satisfaction" experienced by CPS. The case studies report that:

- Pesticide use decreased by 85 percent in Auburn schools;
- Pest problems reduced by 85 percent and pesticide use reduced by 90 percent in Kyrene schools;
- Since the first day of implementing BVSD's IPM program, no synthetic pesticides are used and no returning pest problems have occurred;
- Pest problems decreased by 90 percent in MCCSC;
- In the eight years of its IPM program, Evesham schools have only used chemical pesticides twice; and,
- Pesticide use decreased over 90 percent and service calls have reduced by 95 percent in NYCPS.

Rarely is there a need to apply pesticides inside our buildings or on school property.

IPM implementation hurdles. Schools have successfully faced hurdles that center on the following issues:

- The Illinois state IPM law exempted school districts that requested to opt out of IPM requirements if the district claimed it would be too costly. Activists worked with individual schools in CPS to prove that IPM was cost effective;
- The person designated as the IPM coordinator for MCCSC originally knew very little about pests or pest management. After learning about IPM and its simplicity, the coordinator now provides trainings throughout the country;
- The TRES case study states that IPM is labor intensive and that it would help to have more staff. Their lawn and landscape program is partly run by parent volunteers to help with the program;
- Costs of implementing certain preventive control measures like door sweeps and structural repairs are not within Albany schools' budget, and thus some buildings do not get what they need for an optimal IPM program immediately. These components will be implemented over time;
- The Health Department cites NYCPS if insects are found in the monitoring traps in school kitchens and are therefore penalized for using IPM. As a resolution, now the building staff check the monitoring traps and immediately discard any with insects, yet they lose valuable information the traps provide; and,
- For the staff at BISD, to maintain grounds so they remain aesthetically appealing with limited resources for manual labor was difficult. Their solution is to use native plantings and high-maintenance areas, such as thinly planted shrub beds, are minimized.

Cost benefits. The cost of implementing an IPM program is not an impediment to moving IPM forward. Depending on the school's current maintenance, sanitation, and pest management practices, some economic investment is usually required at the outset of an IPM program. Short-term costs may include IPM training, purchasing new equipment, hiring an IPM coordinator or making preliminary repairs to buildings. Activities that can be absorbed into a school's existing budget include training of maintenance, cleaning, and food service staff and educating students and teachers to modify their behavior. In addition, some school maintenance and structural repair funds may already be budgeted for activities such as replacing water-damaged materials, landscaping, waste management, and physical barriers. Generally, much of the costs that were allocated to chemicals go to labor in an IPM program.

The fact that pest control is not often a large part of the school's budget should not hinder the school's transition to an IPM program. Certain facets of an IPM program can be implemented over time in order to keep costs down. Locust Valley Central School District, NY passed a bond to replace windows, which helped implement components of its IPM program, while keeping costs for pest management at a minimum.

While not always specified, the case studies generally show that IPM costs are equal to, or more often, less than, a con-

ventional pesticide spray program. The following specifics were reported on the cost benefits:

■ After an initial investment in maintenance, the long term costs associated with pest management decreased for Auburn schools;

■ Since the IPM program began, the cost of pest management has been cut in half to $17,000 annually at MCCSC;

■ IPM saved West Ottawa schools $10,000 annually on their pest management;

■ Pesticide related expenses have decreased 20 to 25 percent at Baldwin schools; and,

■ The herbicide-free project at Sandburg Elementary began with just $165, which the District used on its previous program, along with minimum funds from the District and PTA groups that were used for purchasing new supplies and now, almost four years later, is "almost free to maintain."

Keys to IPM success. Most of the 27 case studies featured in *Safer Schools* highlight one or two key elements that contributed to an effective school IPM program. These lessons from the field can be incredibly valuable to those starting or already implementing an IPM program. The two most commonly stated keys to success are: (1) to organize with a wide-range coalition of community groups and individuals including student groups, parents, teachers, medical community, local activists, among others in support of school IPM; and, (2) to establish an IPM committee to oversee program implementation. Additional elements of success include:

■ Training from people who are knowledgeable about IPM strategies;

■ Participation of custodians, school staff and/or students in implementation strategies;

■ Have an IPM advocate, whether it is a custodian, an administrator or board member within the school system, help keep the integrity of the program in place;

■ Create a group of volunteers to help with the IPM program;

■ Amend the school's pest management contract specifications to reflect IPM practices;

■ Adopt a written IPM policy to guide the program; and,

■ Develop the cooperation and support of school officials.

IPM costs are equal to, or more often, less than, a conventional pesticide spray program.

Conclusion

Many people assume that schools are environmentally safe places for children to learn. It often takes a pesticide poisoning, repeated illnesses or a strong advocate to alert a school district to the acute and chronic adverse health effects of pesticides and the viability of safer pest management strategies. IPM has proven to be a vital tool to reducing student and school staff's exposure to hazardous pesticides. The 27 case studies represented in *Safer Schools* prove that IPM can be successfully implemented to manage school pest problems, and significantly reduce or eliminate pesticide use. *Safer Schools* is a guide for those looking to implement a successful school IPM program.

For more information, contact Kagan Owens, Beyond Pesticides, 701 E Street, S.E., Suite 200, Washington DC 20003, 202-543-5450, kowens@beyondpesticides.org. For a hard copy of Safer Schools*, contact Beyond Pesticides or download a free copy at www.beyondpesticides.org/schools.*

Endnotes

1 National Research Council, National Academy of Sciences. 1986. *Pesticide Resistance: Strategies and Tactics for Management*. National Academy Press. Washington, DC.

2 Carcinogenic pesticides are those listed by U.S. EPA as Class A, B and C carcinogens (http://epa.gov/pesticides/carlist/index.htm) and chemicals known to the state of California to cause cancer under Proposition 65 (http://www.oehha.org/prop65/prop65_list/Newlist.html).

3 Pesticides with the highest acute toxicity are labeled by U.S. EPA as Toxicity Category I and II and bear the signal words "Danger" and "Warning."

4 This includes pesticides that interfere with human hormones, cause birth defects or reproductive or developmental harm (http://www.pesticideinfo.org) or chemicals known to the state of California to be reproductive toxins under Proposition 65 (http://www.oehha.org/prop65/prop65_list/Newlist.html).

5 These pesticides include, but are not limited to, organophosphates (diazinon, malathion, etc.) and pyrethroids (cyfluthrin, permethrin, etc.).

6 According the 1996 World Resources Institute report, *Pesticides and the Immune System: The Public Health Risks* by Robert Repetto and Sanjay Baliga, studies document that organochlorines (lindane, chlordane, etc.), organophosphates (malathion, diazinon, etc.), carbamates (carbaryl, bendiocarb, etc.) and others (2,4-D, atrazine, captan) alter the immune system in experimental animals and make them more susceptible to disease. http://population.wri.org/pubs_description.cfm?PubID=2704.

7 Inert ingredients that are classified by U.S. EPA as "Inert Ingredients of Toxicological Concern," "Potentially Toxic Inert Ingredients" and "Inerts of unknown toxicity" are not considered non-toxic. http://www.epa.gov/opprd001/inerts/lists.html.

The Pesticide Link to Mad Cow Disease

The disease hits Canada. Is the U.S. next?

by Mark Purdey

Editor's Note: On May 20, 2003, Canadian agriculture officials reported that a cow slaughtered in Alberta in January tested positive for Bovine Spongiform Encephalopathy (BSE), commonly known as mad cow disease. It is the country's first case since 1993. Fearing the disease could spread to the U.S., the U.S. Department of Agriculture has a temporary ban on Canadian beef. Mad cow disease was first reported in the United Kingdom in 1986, peaking in 1993 with almost 1,000 new cases per week. In 1996, variant Creutzfeldt-Jakob Disease (vCJD) was detected in humans and has been linked to eating contaminated beef. Both are fatal brain diseases with unusually long incubation periods, often lasting years. According to the Centers for Disease Control and Prevention, a total of 125 human cases have been reported in the world: 117 from the United Kingdom, six from France, and one each from Ireland and Italy. No human cases have been reported in association with the recent Canadian case.

While officials have tied BSE to an infectious microorganism, a British organic farmer, Mark Purdey, has linked the disease to organophosphate pesticide exposure. Years ago, Mr. Purdey resisted his government's order to spray his cattle with organophosphates for warble fly and went to court for a judicial review. He won his case, was exempted from using the spray, and has gone on to conduct research on the disease. No cows born in his herd developed BSE. He has contributed numerous articles on the subject of BSE to scientific journals. He farms in Somerset, UK. The following article appeared in Wise Traditions in Food, Farming and the Healing Arts, *the quarterly magazine of the Weston A. Price Foundation, Spring 2000, which can be found on their website www.westonaprice.org.*

As the first snowstorm of winter hit the isolated hill where I farm, I pitched out the last forkfuls of hay to my cattle before nightfall. Much like the whirlwinds of snow surging all around me, my brain was turning over and over the catalogue of injustices that successive governments had levied onto the farming community over BSE. I felt paralysed and powerless in the encroaching snowstorm.

My confidence to carry on was battered to pieces by the recent ban on beef-on-the-bone. The announcement—based on the whims of a mere handful of government "experts"—renders my hard graft over the last twenty years in farming into pathetic insignificance. But how can there be any true "experts" from academia when the most basic facets of the Bovine Spongiform Encephalitis (BSE) disease process remain a total mystery? One would have thought that all of those farmers and independent vets living and working in the front line with BSE cattle would have been the first to be consulted. But strangely, their observations have been completely ignored by officialdom.

Cows frequently partake in the bizarre habit of eating their colleagues' afterbirths after calving, and I was particularly intrigued to watch my own home-reared, BSE-free cows positively relishing the delicacies of afterbirth tissues derived from a group of pedigree cows that I purchased into my farm in 1989. As the majority of these imported cows went on to develop BSE, it is interesting that BSE has not surfaced in my home-reared cows, despite their overzealous exposure to the allegedly "infectious" blood and lymph found in the afterbirths of the BSE cows. Other farmers sharing the same experience report the same outcome.

Another anecdote hails from the farming community of Shetland, where the island folk are free of Creutzfeld-Jakob Disease (the human form of BSE), despite their ancient custom of eating "potted sheep's brain." Interestingly, the equivalent of BSE in sheep, called scrapie, has been rife in the sheep flock on Shetland for centuries.

The anecdotes are ever-flowing, and all point to a hypothesis based upon some environmental causal factor that falls a long way short of the current government's nightmare infectious "ingestion" scenario. If the spongiform agent is as infectious as the authorities would have us believe, why has chronic wasting disease (the BSE equivalent in deer) remained uniquely confined to a small cluster zone in the Rocky Mountains for thirty years now, without spreading across to the neighboring deer herds roaming the rest of the Rockies? Why has no spongiform developed in the various predators of those affected deer?

From the very beginning of the crisis, the farming community has been the unfortunate victim of the whole BSE campaign. Yet, ironically, the same presiding authorities who are responsible for foisting off the burden of BSE are, no doubt, totally oblivious to the fact that more farmers have committed suicide as a result of official BSE blunderings than people have died of new variant Creutzfeld-Jakob disease (nvCJD).

Despite millions of pounds worth of scientific research failing to ascertain a link between BSE and scrapie, the whole propaganda myth that BSE was caused by scrapie became gospel in mainstream public mentality.

Government research flawed

A body of government experts was quick to take exclusive control of BSE research, and very rapidly the cause of the disease was attributed to the feeding of scrapie-diseased sheep brains to cattle. In other words, scrapie was said to jump from sheep to cattle by virtue of some sort of infectious agent. And it naturally followed that this same assumption of disease cause was extrapolated into the human CJD context—the presumed "microorganism" had now jumped from cows into humans. But this was no more than unproven hypothesis, and it still remains that way today.

Not surprisingly, only a handful of folk had insight into the unsavory world of the meat and bone meal (MBM) rendering business. But for anyone who had scratched the mere surface of the global distribution of British MBM products, it became strikingly obvious that the very mainstay of the official hypothesis was radically flawed. For instance, during the 1980s thousands of tons of this very same incriminated MBM was exported to cattle farms in BSE-free countries such as the Middle East, Malta and South Africa. Officials have always brushed this challenge aside, arguing that the cattle in these countries did not receive sufficiently large doses of scrapie to contract BSE. But this contradicts their current official explanation for the 30,000-plus cases of BSE that have developed in cattle born after the 1988-ban on MBM, where government scientists conveniently claim that leakage of micro amounts of MBM (destined for pig and poultry feed) into the cattle rations, caused the 30,000 cases.

Furthermore, USA and Scandinavian rendering systems duplicated exactly the same prerequisites that were supposed to kick off BSE in Britain—scrapie affected brains being milled into feed—yet their livestock remained BSE-free.

Nor were we told of the numerous unsuccessful attempts by U.S. scientists to induce BSE in cattle that had been experimentally fed or injected with massive amounts of scrapie brain material. Apparently, the cattle either just "got fat" or went down with a sickness more akin to motor neurons disease than BSE.

Despite millions of pounds worth of scientific research failing to ascertain a link between BSE and scrapie, the whole propaganda myth that BSE was caused by scrapie became gospel in mainstream public mentality.

The media loved the theory because they could drum up a viral holocaust-horror scoop. The vegetarian and green lobbies found themselves landed with a powerful propaganda weapon on their plate— turning cows into cannibals. And the UK scientific establishment could go on drawing generous grant funding for their viral witch-hunt without the embarrassment of having to account for years of barking up the wrong tree. And then the government could foist the blame of BSE onto a naturally occurring agent for which no significant vested interest or official body could be held accountable.

Whilst the maligned renderers and feed merchants got the full brunt of blame for BSE, it surprises me that neither were held accountable for the financial damages of the crisis. Instead, they all received generous compensation payments to the tune of millions.

Almost on a weekly basis we are now finding ourselves listening to the same experts regurgitating the same stereotype claims of how BSE has now jumped from cattle into humans. On Channel 4 Dispatches, despite no reported cases of BSE in the British sheep flock, it was assumed that sheep must be affected with BSE because they had eaten meat and bone meal. We are now warned of the danger of eating sheep. Professor Blakemore summed up the program by saying that we should all eat chicken and avoid beef and mutton. But as poultry received their fair share of meat and bone meal as well, should we not be cutting chicken out of our diet too, according the dictates of the official theory?

Questioning the conventional hypothesis

These spokespeople would do better to start questioning the entire foundation of their hypothesis, rather than squeezing the last drop of "infected" blood out of the sinking stone. What is more, the conventional consensus on BSE is ignoring that well-recognized academic yardstick, Koch's postulates, which is employed for assessing the cause of disease. The first postulate dictates that a theory begins to carry weight once the hypothetical causal agent can be identified in every victim of the disease in question. The conventional hypothesis on scrapie/BSE/CJD certainly fails to fulfil this basic postulate on several counts. In this respect it is particularly interesting that spongiform disease has been experimentally induced in animals after receiving injections of brain tissue derived from people who have died of Alzheimer's and Parkinson's Disease. Why is nobody freaking out about Alzheimer's disease?

In the case of BSE where no viral cause has been identified, it is illogical to assume that one animal has to eat another in order to catch the same disease. Initially, the direction of any epidemiological research programme should follow elementary logic and investigate the most likely assumption that the various different species of mammals suffering from the same disease have all been exposed to the same causal factor in the environment. But it seems that nobody has investigated this route. Sheep did not cannibalize each other in order to catch scrapie, nor did wild deer in the Rocky Mountains cannibalize each other in order to catch their BSE-equivalent disease, chronic wasting disease.

The reductionist mindset of government scientists is betrayed by the narrow scope of questions that have been put to the relatives of the new variant Creutzfeld-Jakob Disease victims. The questionnaire is almost entirely focused on the carnivorous perspective of the victims' diets, and therefore tailored to suit their own hypothesis from the outset. The Establishment's assessment of nvCJD etiology seem to have completely ignored the fact that adolescent CJD was recorded well before the 1980s. And why do they move the goal posts every time a new challenge confronts their theory—like extending nvCJD's incubation period to tally with the long term vegetarian victim from Kent? Take note that they have completely ignored the case of the lifelong vegetarian nvCJD victim from France.

The British government's Spongiform Encephalitis Advisory Committee (SEAC), seems to have thrown aside one of its most relevant long standing observations on CJD epidemiology—people who are occupationally involved with pets and farm animals are at greater risk of developing CJD. And it is this observation that may well hold the key to the true cause of these diseases.

The known toxic effects of OP's lead me to wonder whether the use of systemic OP's on British cattle have caused the malformation of another newly discovered brain protein called prion protein—the phenomenon that U.S. scientists have proposed as the cause of spongiform encephalopathies.

Organophosphate pesticides linked to BSE

During the 1980s and early 1990s, cattle and cats (the species of animals that have developed BSE) were exclusively treated with systemically acting types of organophosphate (OP) insecticide which were designed to penetrate the entire physiological system of the animal, transforming the bloodstream into a toxic medium so as to kill off any unwanted parasites present. In the context of cattle, the use of these systemic OP's was subject to a compulsory government order for the eradication of warble fly. The UK government was unique in compelling a substantially higher biannual dose of this OP by comparison with the few other countries around the world that were following similar, less intensive measures to control this fly. Interestingly, these other countries, including Switzerland, France and Ireland, comprise the few other countries that are suffering from very small epidemics of BSE in their home-reared cows.

The National Farmers Union, the Meat and Livestock Commission and The British Veterinary Association formed a united front with MAFF (Ministry of Agriculture, Fish and Forestry) to ensure that all farmers complied with the law and treated their cattle. Systemic OP's are recognized as exerting their toxic effect by entering the central nervous system and deforming the molecular shape of various nerve proteins. These chemically-mutilated mutant proteins are subsequently rendered incapable of performing their proper function in the nerves.

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the malformation of another newly discovered brain protein called prion protein—the phenomenon that U.S. scientists have proposed as the cause of spongiform encephalopathies. Whilst some types of spongiform disease have been attributed to genetically acquired damage to the shape of the prion protein, the underlying cause of protein damage in the BSE and new variant CJD strain of the disease remains a mystery—amongst "open-minded" scientific circles, at any rate.

OP's are known to generate a highly reactive type of "free radical" in the tissues that they intoxicate. And it is this free radical legacy of OP poisoning which is capable of instigating a chain reaction of lethal attacks on nerve membranes and proteins in the central nerves of susceptible individuals.

Once tissues become 'infected' with free radical chain reactions, the introduction of freezing, heat or radioactive conditions to the affected cells does not arrest such an 'infection.' In fact, irradiation, heating and homogenizing of such tissue (brain tissue from spongiform affected animals is homogenized before it is inoculated into healthy animals in transmission trials) actually proliferates the free radical phenomena. This suggests that these free radicals may constitute the as yet unidentified "infectious" transmissible agent of these diseases.

Concerned members of the public helped me to fund a £14,000 experimental research project at the Department of Neuroscience, Institute of Psychiatry in London, where living tissue culture cells which express the prion protein were exposed to low doses of the OP chemical; so as to stimulate the context of a living cow undergoing OP treatment. Significantly some of the recognized changes of the prion protein, which appear in the early stages of spongiform disease, were induced in these OP-treated cells.

Clearly, these results go some way towards proving that OP's represent a primary or partial cause of BSE. Yet it was this very same simple test that the government had always assured me was too expensive for the taxpayer to fund and, besides, impossible to set up anyway, even with the most updated lab technology.

The real madness of the mad cow fracas would seem to lie with the deadlock that has kept these products on the open market... since experimental evidence first linked their use to the cause of BSE.

In December 1996 Lord Lucas, MAFF's spokesman in the House of Lords, gave a written answer stating that the government had asked the SEAC committee to revisit the OP-BSE theory as a result of the recent research findings conducted at the Institute of Psychiatry.

After being invited to deliver my thesis to a SEAC meeting in April, 1997, I was disturbed that at no stage during the protracted inquiry that followed was the experimental evidence of the Institute's work addressed—the prime purpose behind this hearing. The committee dismissed the evidence that I presented, which had been drawn from independent peer-reviewed, published science literature. I was not surprised to learn that the outcome of this inquiry—the proceedings of which were described as "confidential" to any inquiring journalist—was a recommendation to government that any applications for funding research into the OP-BSE theory should not be supported.

I still shudder each time I visit our local farm stores and see the canisters of systemic OP products up for sale. Although the warble fly is eradicated and BSE is on the wane, farmers can still apply these chemicals in a voluntary capacity for controlling lice and other pests. I shudder further when I see the bottles of OP head lice shampoo and OP systemics for pets and gardens still in the shops for human use.

The real madness of the mad cow fracas would seem to lie with the deadlock that has kept these products on the open market for a full year since experimental evidence first linked their use to the cause of BSE. Perhaps the government is so scared of compensation claims that it employs everything at its disposal to prevent any degree of acceptance of the idea that their compulsory warble fly programme caused the biggest catastrophe in the history of British agriculture.

The brave new SEAC committee appears to be totally preoccupied with "effect" rather than "cause." Such a back-to-front approach betrays their sensitivity with anything to do with "cause." But how can any government program seriously hope to eradicate BSE or nvCJD if it has failed to eradicate, let alone recognize, the disease's true cause?

Pests in the Pantry

Keys to moth management

By Meghan Taylor

Those who have had moths flying around their kitchen know what a hassle it is to get rid of them. Pantry pests cause quite a disturbance in your cabinets, not to mention in your delicious food! They live, die and hatch eggs in your groceries. Sounds crass. But fortunately there is a way to keep a moth infestation from occupying your kitchen, and you don't have to give up the whole grains and delectable treats that currently grace your cupboards to do so.

Inspection

Most moth-infested cabinets are a result of infested food that has been brought in from the outside. All it takes is one female to enter the house in your grocery bag, and you may face an influx. Once she is there, she has the potential to lay over several hundred eggs. All groceries, packages and food should be carefully inspected for signs of infestation to keep her and her buddies out of your home. Usually, if recently purchased food is infested, it will contain pests in the egg stage. The eggs will then hatch, feed and pupate and infest the other food in your cabinet. Products including flour, whole grains, crackers, peas, beans, nuts, dried fruit, spices and even pet food need to be checked for moth presence. Look for telltale signs of moths: small holes in the packaging and webbing in the tighter areas of the package.

Once detected, you have several options. If the pests are present in groceries you've just purchased, place the food in a bag in the freezer, and save your receipt. After four days in the freezer, the insects will be dead. Take your receipt and food back to the store and alert the manager to the infested supply. If the food is not recently purchased, you can simply place the contaminated food in a sealed plastic bag and discard outside the home. Alternatively, if you'd prefer not to part with all of those groceries, you can kill moths in your food by manipulating temperatures they are exposed to. If you choose this method, just remember the moths' bodies will remain in the food and must be sifted out afterwards. Storing food in your freezer for four days will guarantee killing the moths. Heating also works. 130 degrees Fahrenheit for two hours should do the trick. Just make sure that insects are exposed to the heat for the required time. Those in the middle of the food may not feel the heat as soon as those on the top.

Prevention

- Keep the infested food out of your house, and you keep the moths from invading. Always inspect your groceries for infestation.
- Check out packaging while at the grocery store, looking for signals of moth and larva presence, such as small holes. When buying bulk grains, keep your eye out for any insects in the food.
- Store all of your food in tightly sealed containers. This

will keep any pantry pests that slipped through your inspection from infesting other food in your kitchen. Glass jars with lids that have rubber gaskets are an excellent choice. Beware that even jars with screw tops may not be sufficient against pantry pest invasion.

- Clean up all spills and crumbs promptly. If you notice cracks and crevices where crumbs tend to become lodged, use caulk to seal these up.
- Cupboards and shelves should fit flush against cabinet walls so as not to provide spaces for crumbs to accumulate.
- Make sure that other areas that attract crumbs, such as in the toaster, stay clean.

Control

If moths have already made themselves at home in your cabinets, it is best not to use chemicals to get rid of them.

- Inspect all of your food. Go through each and every package and container, looking for the common signs of infestation. If you see any holes, or webbing in the corners, consider it infested.
- Discard the infested food in sealed bags outside of your home or use temperature manipulation described above to kill off the insects. Remember to sift them out of the food afterwards.
- If you store larger than normal quantities of grain that become infested, you can use *Bacillus thuringiensis* (Bt) to manage the problem. Apply only to the surface, since these pests usually will not go deeper than four inches into the grain.
- Once the food in your pantry is moth-free, thoroughly clean the infested area. Use soap and hot water in your pantry, paying special attention to corners and crevices.
- Take all cans out and wash them as well to kill any microscopic larvae.
- Vacuum any infested areas in the kitchen.
- Take the preventive measures described above and monitor the problem after clean up.
- Pheromone traps come in handy here. After you have taken care of the majority of the infestation, they can be used to kill any leftover moths and to monitor their population. These traps are normally effective for about three months. If you notice an increase in the number of moths in your traps, it is time to inspect your food again. Non-toxic pheromone pantry pest traps are available from companies such as Victor Safer Brand (www.victorpest.com)
- Without having to buy any supplies, you can just leave your kitchen light on at night, with all other lights in the house off. You can capture the stray moth when it comes out from its hiding spot to the light.
- If you are still catching moths after a thorough cleanup, and you have taken all preventive measures, consider using a least-toxic insecticidal soap such as Safers Brand to clean out your cabinets. Be sure to clean it up thoroughly, and as with any pesticide, use caution. Use this only as a last resort.

Resources

Moeller, Mike. 1988. "Controlling Pantry Pests." *Straight Talk From TDA*. Deputy Commissioner, Texas Department of Agriculture.

Olkowski, William and Sheila Daar. Fall 1986. "Pantry Pests: Beetles and Moths in Stored Foods." *Common Sense Pest Control*. 2(4): 16-19. Berkeley, CA.

Which moths are in my cabinets?

More likely than not, you will not have to identify the exact type of moth that is in your kitchen. The control methods described below apply to a broad range of pantry moths. However, if you are going to use pheromone traps, which are helpful in detecting if a moth problem still exists after a cleanup, you will have to know which type of moth you have on your hands in order to buy the right trap. Generally, one of three moths will be in your pantries. The Angoumois Grain Moth is rather small, with a buff, gray or yellow-brown coloring. The hind wings, with long hairs, narrow to a point. The Mediterranean Flour Moth is a bit longer (about .48"), and is usually a pale gray with two black lines on its forewings. Lastly, the Indian Meal Moth, about .8" long, has pale gray wings with a red-brown coloring on its outer forewings.

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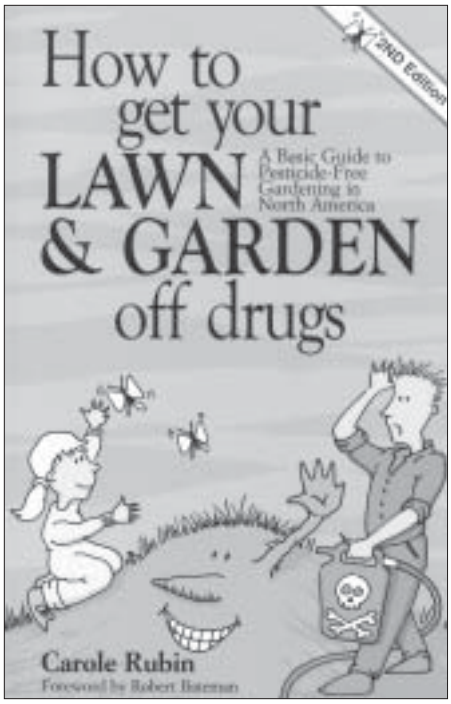
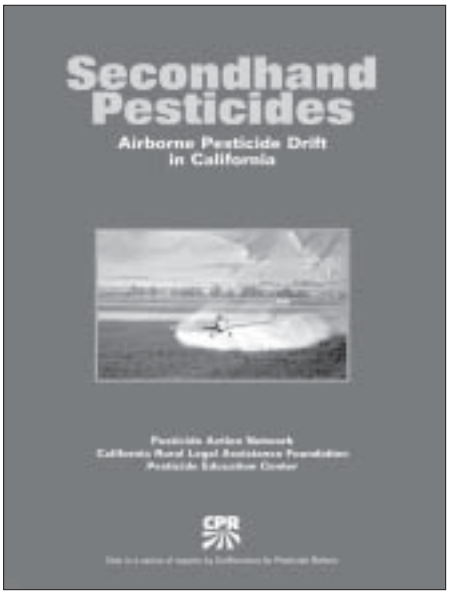


How to Get Your Lawn and Garden Off Drugs: A basic guide to pesticide-free gardening in North America (2nd Ed.)

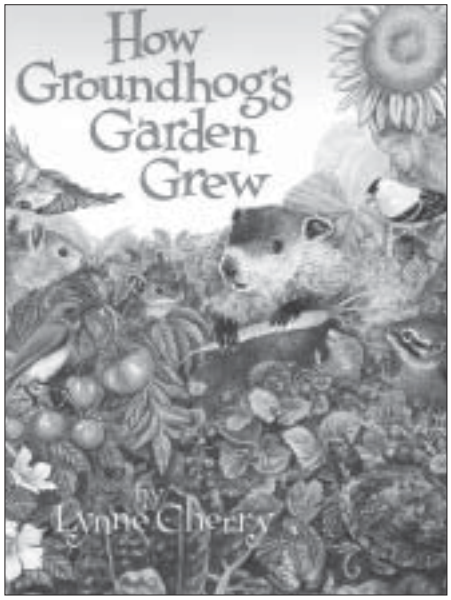
Carole Rubin (Harbour Publishing, Maderia Park, BC, Canada, 2003). What's a gardener to do? You don't want to pollute, but you want to protect your lawn, shrubs and vegetable garden from bugs and disease. Author and activist Carole Rubin gives her solution in the revised and updated version of *How to Get Your Lawn and Garden Off Drugs*. Since the first edition was published in 1990, communities across the globe, especially in the author's home country of Canada, are looking at by-laws that restrict or ban the cosmetic use of pesticides on public and private property. This timely second edition remains a must for all gardeners and homeowners who want to tread lightly on the earth. Toxic herbicides, insecticides, fungicides and other hazardous agents are widely used in agriculture and home gardening to kill unwanted weeds, insects and diseases, despite the availability of least and non-toxic alternatives. Today we are looking for ways to clean these poisons from our water, fisheries, wildlife species, soils - and our bodies. *How to Get Your Lawn and Garden Off Drugs* will help you or your friends or neighbors take that important first step. This inspiring guide covers all regions of North America, and demonstrates how lawns and gardens can flourish by replacing synthetic chemicals with balanced organic alternatives. It contains clear instructions on how to properly choose, feed, water, aerate and cut your lawn and garden plants, plus a glossary and an updated list of organic suppliers. Carole Rubin has served as a steering committee member of Pesticide Action Network North America and is a member of the North America and British Columbia Native Plant Societies. *To order a copy of* How to Get Your Lawn and Garden Off Drugs*, visit www.beyondpesticides.org/infoservices/publications.htm#recommend.*

Secondhand Pesticides: Airborne Pesticide Drift in California

(Pesticide Action Network North America (PANNA), California Legal Rural Assistance Foundation and Pesticide Education Center, San Francisco, CA, 2003). Secondhand Pesticides, released May 7, 2003, reveals that several widely used pesticides are regularly found in air far from where they are applied at concentrations that significantly exceed levels deemed "safe" by regulatory agencies. Background exposure to pesticides in air, especially in areas of high pesticide use, presents long-term health risks. "Pesticides in air are often invisible and odorless, but like secondhand cigarette smoke, inhaling even small amounts over time can lead to serious health problems, especially for children," said Susan Kegley, staff scientist at PANNA. "Although they may not be aware of it, urban residents, school children, suburban dwellers and farmworkers across the state are breathing air containing unsafe levels of toxic pesticides." The report finds that for four of the six commonly used pesticides evaluated, their concentrations in air at significant distances from fields greatly exceeded the "acceptable" short-term "reference exposure levels" (RELs) for both children and adults. RELs are the concentrations of pesticides in air below which the U.S. Environmental Protection Agency (EPA) or California's Department of Pesticide Regulation considers adverse health effects unlikely. The report finds that near-field concentrations of chlorpyrifos and diazinon, both neurotoxic insecticides being phased out by EPA for most home uses because of the hazards they pose to children, exceeded the short-term child REL by 184 and 39 times, respectively. For the highly acutely toxic fumigant metam sodium, concentrations over 450 feet from the tested field exceeded the "acceptable" short-term child and adult REL by 60 times. Over the long term, lifetime cancer risks from exposure to average concentrations of the fumigant Telone (1,3-dichoropropene) in Kern County, CA measured up to 56 per million, far in excess of the cancer risk of one in one million that agencies generally consider the threshold for concern. More than 90% of pesticides used in California are prone to drifting from their application site, and 34% of the 188 million pounds of pesticides used in 2000 were highly toxic to



humans, capable of triggering asthma and causing immediate poisoning, other respiratory illnesses, cancer, birth defects, sterility, neurotoxicity and/or damage to the developing child. Aside from pointing out health risks of pesticide drift, *Secondhand Pesticides* also points out that the current drift regulations are ambiguous, and enforcement is difficult, weak and largely ineffective. *To obtain a copy of Secondhand Pesticides, call Californians for Pesticide Reform at 1-888-CPR-4880 or download from www.panna.org or www.pesticide reform.org.*



How Groundhog's Garden Grew

Lynne Cherry *(The Blue Sky Press, New York, NY, 2003)*. Little Groundhog loves to eat his neighbor's vegetables until he makes a friend who teaches him the joy of planting a garden of his own. As squirrel introduces Little Groundhog to the cycle of an entire gardening year, children will learn about gathering seeds in fall, storing them in winter, planting in spring, weeding and watering in summer, and a delicious, bountiful harvest at Thanksgiving time. With intricately drawn illustrations and plenty of helpful harvesting tips, this book is a great introduction to crop growing for young gardening hopefuls. A special author's note is also included on the merits of composting, pollinating insects and environmentally friendly farming practices. Best-selling author and naturalist Lynne Cherry explains that she wrote the children's book *How Groundhog's Garden Grew* to introduce gardening to children, parents and teachers, because few things in your life will be as important to your health as the food you eat. This book also mentions other fascinating aspects of gardening such as pollination and the importance of insects. On the insect page, the praying mantis asks Little Groundhog to refrain from using bug spray or pesticides, which would harm or kill them. In return, the praying mantis promises that the birds and other insects will help the garden by eating insects harmful to the plants. According to the author, "Probably the best thing you can do to insure your good health is not to use pesticides or herbicides. The suffix 'cide' means 'kill.' Some of these harmful chemicals can give you cancer many years from now." Lynne Cherry has authored several books including *Making a Difference in the World* and *The Shaman's Apprentice: A Tale of the Amazon Rain Forest. To order a copy of* How Groundhog's Garden Grew, *visit www.beyondpesticides.org/infoservices/publications.htm#recommend.*

Pesticides and Public Health: A Kit for Health Care Providers

(Maryland Pesticide Network, Annapolis, MD, 2003). Physicians and all health care providers need to better informed about the specific pesticides used in their areas and to improve their skills in the recognition, management and prevention of health effects from pesticide exposures and poisoning. "Medical problems caused by pesticide exposure are often overlooked or misdiagnosed by health care providers," explains Lynn Goldman, M.D., former Assistant Administrator of EPA's Office of Prevention, Pesticides and Toxic Substances and

public health policy advisor for the kit. To address this concern, the Maryland Pesticide Network has developed *Pesticides and Public Health*, a kit for physicians and other health care providers on pesticides and public health. While the kit focuses on assisting and educating Maryland health care providers, this information should be in every doctor's office, hospital and clinic around the country. It includes basic guidelines to assist in the diagnosis of pesticide poisoning, including a fold-out chart of pesticides, acute symptoms, physiological targets, diagnosis and treatment. *Pesticides and Public Health* also includes information on pesticides and respiratory disease, pesticides and the immune system, neurological and behavioral effects of pesticides, reproductive and developmental effects of pesticides, pesticides and cancer, tips for reducing your exposure, and Maryland pesticide laws and resources. To help better assess the impact of pesticide exposure on public health in Maryland, the kit directs health care providers to report suspected injuries on the Maryland Pesticide Network website at www.medpestnet.org/pesticide injury report.htm. *To order a copy of* Pesticides and Public Health, *call the Maryland Pesticide Network at 410-849-3909 or email info@mdpestnet.org.*

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RESOURCES

T-Shirts

❑ "Pollution Prevention Is the Cure." full color graphic on 100% natural organic cotton Patagonia™ T-shirt. Sizes S, L, XL, XXL. $10 each; 2 for $15.

❑ Beyond Pesticides' Praying Mantis T-shirt. Printed on slate blue, 100% organic cotton with soy ink. Sizes S-XL. $15 each; 2 for $25.

Books

❑ *A Failure to Protect.* Landmark study of federal government pesticide use and pest management practices. $23.00. *Summary and Overview* $5.00.

❑ *Unnecessary Risks: The Benefit Side of the Risk-Benefit Equation.* Explains how the EPA's Risk-Benefit Analyses falsely assume the need for high-risk pesticides, 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 and why current laws offer inadequate protection. $11.00

❑ *Voices for Pesticide Reform: The Case for Safe Practices and Sound Policy.* A study documenting stories of tragic pesticide poisoning and contamination, and successfully used alternatives that avoid toxic chemicals. $20.00 *Summary: Voices for Pesticide Reform $5.00*

❑ *Poison Poles: Their Toxic Trail and the Safer Alternatives.* A study on the largest group of pesticides – wood preservatives, the contamination associated with treated wood utility poles and the available alternatives. $20.00

❑ *Pole Pollution.* Deals specifically with the wood preservative pentachlorophenol, and the EPA's shocking findings about its toxicity. $7.00.

Back Issues

❑ Back issues of *Pesticides and You* $2.00 each

❑ Back issues of *Technical Reports* $1.00 each

Brochures ($2.00 each; bulk discounts available)

❑ Least Toxic Control of Lawn Pests

❑ Agriculture: Soil Erosion, Pesticides, Sustainability

❑ Estrogenic Pesticides

❑ Pesticides and Your Fruits and Vegetables

❑ Pesticides – Warning: These Products May Be Hazardous to Your Health

❑ Pesticides in Our Homes and Schools

Testimony

❑ Lawn Care Chemicals, 3/28/90 or 5/9/91, $4.00

❑ Federal Insecticide, Fungicide, Rodenticide Act (FIFRA), 4/23/91 or 6/8/93, $4.00

❑ Food Safety, 10/19/89, 8/2/93, or 6/7/95, $4.00

❑ School Environmental Protection Act (SEPA) 7/18/01, $4.00

❑ School IPM, 6/20/91, 3/19/97, or 3/30/99, $5.00

❑ New York City's Response to the Encephalitis Outbreak, 10/12/99 $4.00

❑ Parents: Right-to-Know-Schools, 3/19/97 $3.00

Publications

❑ Building Blocks for School IPM $15.00

❑ Expelling Pesticides from Schools: Adopting School IPM $15.00

❑ Beyond Pesticides' West Nile Virus Organizing Manual $15.00

❑ Beyond Pesticides'ChemWatch Factsheets: individual: $2.00, compilation: $20.00

❑ Getting Pesticides Out of Food and Food Production $5.00

❑ Least-Toxic Control of Pests $6.00

❑ Community Organizing Toolkit $12.00

❑ Model Pesticide Ordinance, Model School Pest Management Policy, Model State School Pesticide Law $5.00 each

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Safer Schools: Achieving a healthy learning environment through Integrated Pest Management

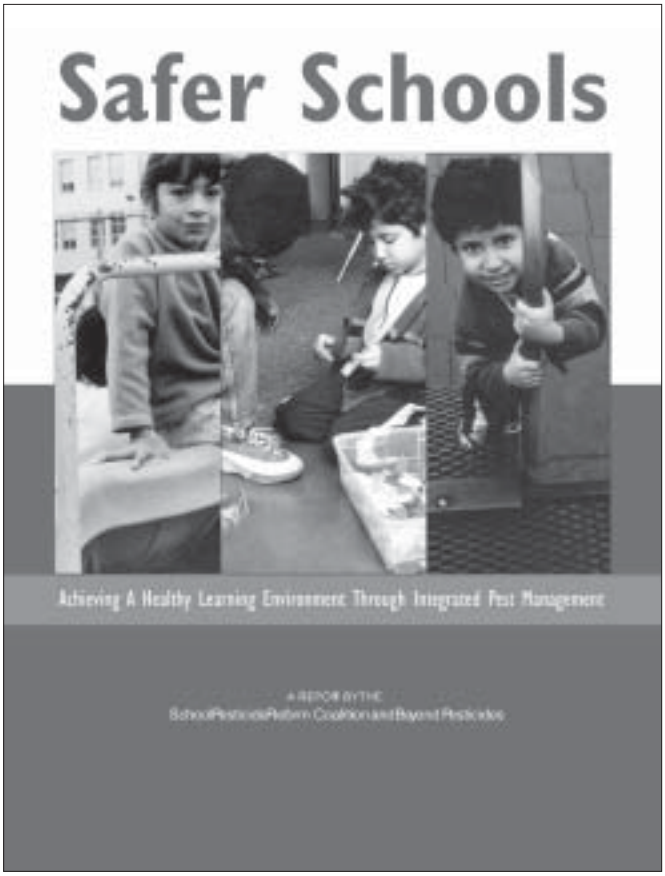
New Report Documents Safer Pest Management Strategies in 27 School Districts and Schools Nationwide.

Safer Schools describes a growing commitment to adopt practices that respond to mounting evidence that pesticides pose a public health hazard while non-toxic, economically feasible pest management options are available, by:

- explaining what an IPM program is and why it is necessary;
- highlighting 27 school districts and individual school IPM policies and programs; and,
- outlining the basic steps to getting a school IPM program adopted.

The report also includes a list of contacts that can provide information on adopting a school IPM policy and its implementation; a list of states and schools that have an IPM/pesticide policy; and, a pest prevention strategies checklist. Excerpts of the report are included in this issue of *Pesticides and You*.

Hard copies of the report are available by contacting Beyond Pesticides. It can also be downloaded for free at www.beyondpesticides.org/schools.



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