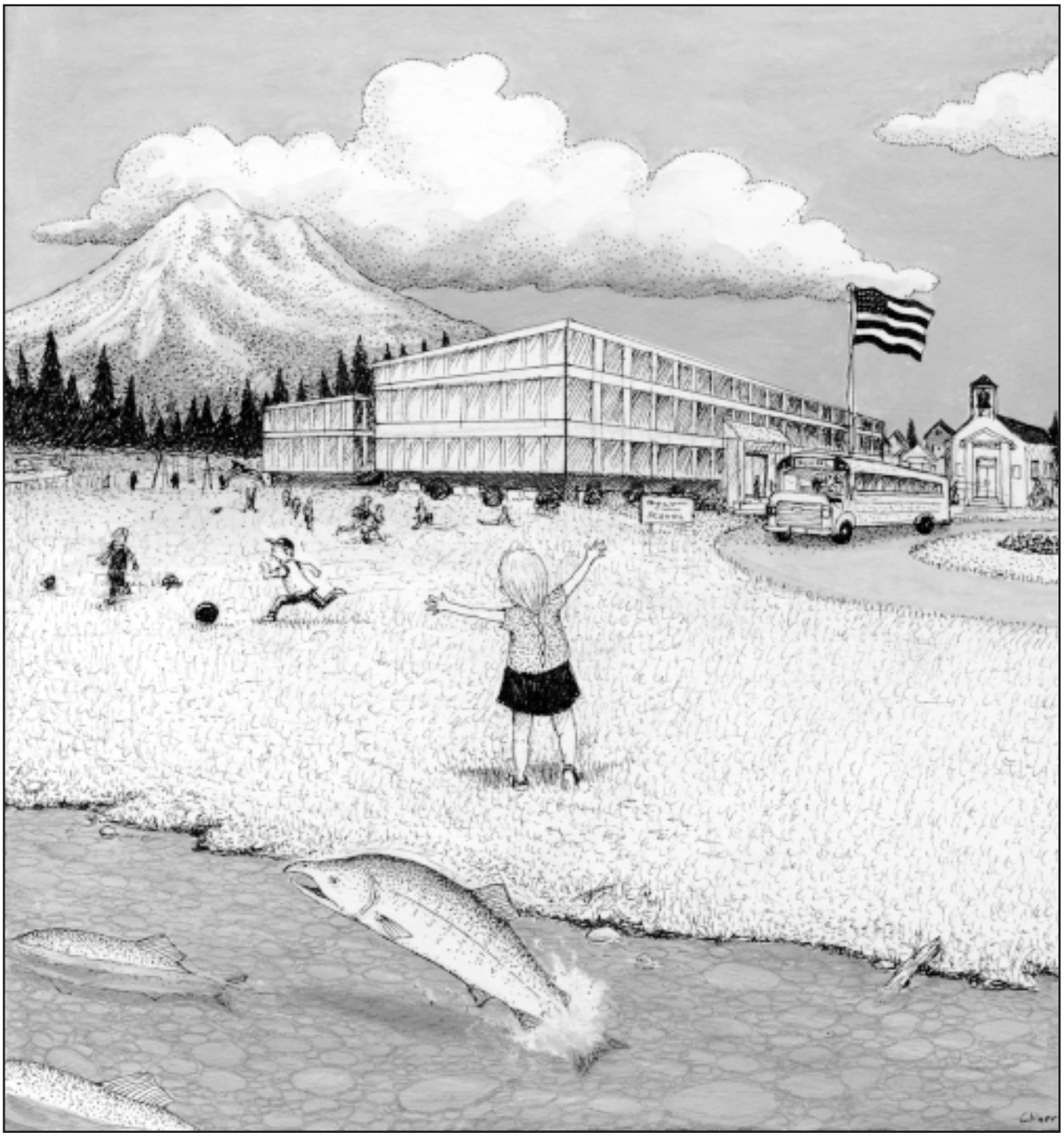
Volume 22, Number 1 Spring 2002

Pesticides and You

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



Streams to Schools: Finding Alternatives to Pesticides

Pesticides Threaten Salmon • Help Eliminate Dangerous Wood Preservatives • The Schooling of State Pesticide Laws – 2002 Update • Schools Save Money With Integrated Pest Management • Taking the Terror Out of Termites

Letter from Washington

All Hazardous Wood Preservatives Should Be Banned

Deal With Wood Preserving Industry A Good Start, But Not Good Enough

Chemical or pressure-treated wood, imbued with some of the most hazardous materials known to humankind, has become so commonplace that most people would never have imagined the risks it poses to human health and the environment. As the wood with its chemical constituents comes under increasing fire, EPA announced on February 12, 2002 that manufacturers will initiate a two-year voluntary phase-out of the residential uses of the wood preservative, chromated copper arsenic (CCA). This is certainly progress. But the risk and exposure data, accumulated over decades, supports a complete and immediate halt to the sale and use of all tainted wood and a clean-up and disposal program to prevent future harm. That is why over a dozen U.S.-based environmental and health organizations, led by Beyond Pesticides, citing safer alternatives, petitioned EPA in December to suspend immediately the most hazardous wood preservatives, including CCA, pentachlorophenol (penta) and creosote.

Wood Preservatives: Higher Volume Pesticides

It is estimated that the voluntary industry phase–out of residential CCA affects a small fraction, approximately 5 percent, of the highly toxic wood preservative market overall. That 5 percent treats most of the greenish looking pressure-treated wood available to consumers. All CCA use, including industrial uses such as utility poles, accounts for approximately 10 percent of the total wood preservative market. According to the American Wood Preservatives Institute's 1995 statistical report, 1.6 billion pounds of wood preservatives are used to treat wood, including 138 million pounds of CCA, 656 million pounds of penta and 825 million pounds of creosote. More recent data puts the volume of creosote at 1.1 billion pounds, mostly to treat railroad ties. The vast majority of wood preserving arsenic, penta and creosote, used in a broad array of products from utility poles to railroad ties, are not affected by the recent announcement.

You only need to glance across the rural, suburban or urban landscape to see this wood, used for playground equipment, utility poles, railroad ties, porches and decks, gardening beds and borders, and more. In 1978, EPA identified wood preservatives as effecting an extraordinarily high risk for cancer, genetic damage, birth defects, and fetotoxicity and put the chemicals into a "special review." While most non-wood and some wood uses were cancelled in the 1980's, wood preservatives remain on the market today because of a two-decade-old finding "of non-substitutability of the wood preservative compounds and the lack of acceptable non-wood or other chemical alternatives for many use situations . . ." That was 21 years ago. Despite the availability of alternative materials today, such as recycled plastic for lumber and recycled steel for utility poles, the regulatory agencies have been watching the toxic wood industry grow.

Healthy Risks Keep Mounting

Meanwhile, the data on exposure to serious health risks keep mounting. The U.S. National Research Council has determined that consuming arsenic at the previous U.S. drinking water standard of 100 micrograms per person per day creates a cancer risk of between one additional case in 100 and one in 1,000. University of Miami studies find that children receive doses of arsenic as high as 1,260 micrograms from hand to mouth contact with CCA-treated wood. An average five-year-old playing on an arsenic-treated play set for less than two weeks would "exceed the lifetime cancer risk acceptable under federal pesticide law," according to a 2001 report published in *Environmental Health Perspectives*. A 1992 report prepared for Health and Welfare Canada concludes, "on all sampling occasions, there was significant leaching of copper, chromium and arsenic," exceeding normal background levels by 24 times for arsenic and 16 times for chromium.

Similar data have been collected for penta-treated utility poles. Penta and its contaminant dioxins, hexachlorobenzene, and furans are classified by the United Nations Environment Programme (UNEP) as persistent organic pollutants (POPs) and slated for elimination. In fact, 26 countries have already banned penta. These chemicals are also known disruptors of the endocrine system, causing adverse effects to sexual development, infertility, and menstrual disorders. A preliminary risk assessment by EPA found that children exposed to the soil around utility poles treated with penta face a risk of contracting cancer 220 times higher than EPA's "acceptable" level. Environment Canada found highly elevated levels of penta in utility and railway ditches in two British Columbia studies.

EPA has a history of striking agreements with pesticide manufacturers and users that are narrow in scope and allow for long-phase-out periods without notices and warnings to the public about hazards during those time frames. This deal does not address the issue of disposal, as much of this wood comes out of service in the next decade and will end up in municipal landfills rather than lined toxic waste facilities, where it should be. As a result of the deal, EPA may discontinue its new risk assessment, making it more difficult for victims to sue. It is well passed time to act, and to act comprehensively.

***—Jay Feldman,* executive director of Beyond Pesticides/NCAMP**

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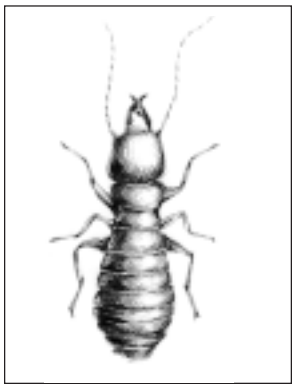

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Trouble with Mice

Dear Beyond Pesticides,
We have discovered field mice in our crawlspace and our attic. We are interested in getting rid of these mice using the safest, least-toxic method to both the environment and us. We are animal lovers, and hate to kill the mice but feel this is probably the only truly effective way to go. I have called several companies in our area. The "environmentally-friendly" ones all seem to use bait stations of bromadiolone encased in paraffin. They say it will not be dispersed in the air. Is this a safe and effective method? Can you offer any suggestions? We would really appreciate any information or help you can provide us! Thank you very much.

Suzy Schulman
Highland Park, IL

Dear Ms. Schulman:
Be wary of pest control companies claiming to be "environmentally friendly." Before you hire a company, be sure to ask about their pest management practices and what pesticides they will be using. Some companies may give you reasons why you shouldn't worry about the health effects of pesticides, and claim that conventional, toxic pesticides are more effective. Be persistent and don't give in. Advocate for use of non- and least-toxic alternatives.

There are some risks involved with using rodenticides. Although poisons in bait stations tend to be less volatile, they can still pose a risk. If you do use a bait station, it is imperative that it be a tamper-resistant container placed out of the reach of children and pets. According to EPA, bromadiolone is highly acutely toxic which is why it is effective for rodent control. EPA states that children are especially at risk to this chemical were it to be ingested. Beware of the likelihood that mice suffering the consequences of the poison will die unnoticed within the walls of your house, creating a foul smell. You must also be careful that pets do not find these mice and eat them, as they will ingest the rodenticide as well.

The use of traps is an effective alternative. If you purchase snap traps, be sure to find one with a sensitive trigger to increase success. Place them in your house without triggering them for a few days allowing the mice to get used to the traps in their environment. Mice tend to scurry along the base of walls. To catch them in their path, place traps at right angles to the wall, with the bait end toward the wall. While on the subject of baits, there are a number of different foods you can use to entice a mouse. A popular concoction is peanut butter mixed with rolled oats. You can also try gumdrops, cheese, meat, raisins or bread. In fact, by continuously alternating

the bait, you will keep the mice interested in visiting the trap. Glue traps are another choice, although many consider these to be cruel since they do not kill the mouse right away. Their advantage is their ability to catch small mice, which snap traps can miss. Place the bait in the middle of the glue traps to insure the mouse will establish full contact. Leave these traps out for at least five days. Since you are animal-lovers, you might have a hard time using these types of traps to manage your mouse problem. Fortunately, there are more humane choices. Consider utilizing "live" traps, meant to capture mice so that you can release them instead of killing them. They are usually metal mesh with doors at either end. When you release the mouse, make sure it is far enough away to prevent its return to your home. You can find this type of trap at your local hardware store.

Mice reproduce extremely fast, and they will return given the chance. Be sure to make the necessary structural repairs to keep them out of your home. First, block off all entry points they might use to access your home. Keep in mind that mice can fit through a hole the size of a dime. They tend to enter houses through cracks near pipelines or cables. Seal these cracks. Place weather stripping under doorways and thresholds. Keep all garbage and food in your home tightly sealed. Grains and cereals should be tightly contained in metal, glass or plastic. If you would like more extensive information regarding least-toxic mouse control, please contact Beyond Pesticides for an information packet ($4 ppd) or see our website www.beyondpesticides.org.

Check out Beyond Pesticides' Safety Source for Pest Management *on our website to find a pest management company that offers non-toxic or least-toxic alternatives to pesticides. If you find a company that uses such strategies that we do not have listed, please tell us about it! We are continually expanding the Safety Source so that more and more people will have access to safer pest management.*

Poisoned Play-Set

Dear Beyond Pesticides,
We recently dismantled and moved a wooden play-set from a friend's yard into our own yard. Luckily, we decided to do a little research on the set before we put it up and had our child play on it. We found that it had been treated with arsenic eight years ago.

We are not going to use the play-set, however, my concern is that my husband pressure washed the play-set in our backyard in preparation to assemble it. I am worried that arsenic is now all over the grass. Do you know how much arsenic would be left after eight years? If there is an accumulation in my back yard now, what should I do about it? Please help me!

Marisa
via email

Dear Marisa,
Your efforts and concerns to protect the health of your family are certainly warranted. EPA recently announced the phase-out of the wood preservative copper chromium arsenate (CCA)

for certain residential uses in recognition of the dangers this chemical poses. After January 2004, CCA can no longer be used to treat wood for decks and patios, picnic tables, playground equipment, walkways/boardwalks, landscaping timbers, or fencing. Arsenic, a highly toxic component of CCA, is a known human carcinogen. A study from Dartmouth Medical School published in the journal Environmental Health Perspectives *suggests that arsenic is an endocrine disruptor. Arsenic does leach from wood into soil. According to a study by the Connecticut Agricultural Experiment Station, CCA-treated decks can contaminate surrounding soil with arsenic levels 10 to 20 times the normal background level, where it remains a health threat. This is especially the case for children since they tend to frequently place their hands in their mouths, allowing arsenic to be ingested. Exposure can occur from contact with soil or touching the treated wood directly.*

If your play-set has not been sealed for some time, it is very possible the arsenic leached into the soil in your back yard. Consider testing your soil to find out the extent of the damage. You can contact a lab that conducts soil testing by checking the laboratory listings in your local yellow pages, or through the American Association of Lab Accreditation at 301-644-3248. Contact Beyond Pesticides for further resources regarding assessment and cleanup. We can also point you in the right direction if you'd like to test the soil yourself.

Aresnic isn't the only chemical to be concerned about in dealing with wooden structures. CCA additionally contains hexavalent chromium VI, also a known human carcinogen. Pentachlorophenol (penta) is another toxic wood preservative that is commonly found in utility poles and railroad ties. You may not associate a toxic utility pole with a child's health, but keep in mind these poles are ubiquitous across our country and many are readily accessible to the hands of children. EPA has calculated that children face an increased risk of cancer by 220 times from exposure to soil contaminated by penta-treated utility poles.

If you are planning on purchasing a new play-set, or considering building a wooden structure like a deck, there are several alternatives to using pressure-treated wood. A safe bet is to use a sustainably harvested and naturally pest and rot resistant wood, such as cedar or redwood. Another option is to use metal or recycled plastic composites. For more information concerning pressure-treated wood or for a fact sheet regarding steps to protect your health from CCA-treated wood, see www.beyondpesticides.org, or contact Beyond Pesticides for a copy.

Mom Wins Award for Activism

Dear Beyond Pesticides,

I wanted to thank you again for being there for me when I started my campaign for safer mosquito control in July 2000. I have good news to share. At my community's State of the City address last week, I received an award for my mosquito management/pesticide awareness work! I was thrilled, first to be recognized for my work, and second, that work to reduce pesticides in the community was given a bit more credibility by receiving kudos from a conservative city with a 36,000 plus population. The issue of pesticides in mosquito management got just a bit more publicity thanks to the award. Hopefully this will help others and me with any of our future efforts to reduce pesticide usage. This was a huge honor that gives me that much more momentum to continue my mission.

Future areas I plan on addressing are pesticides in local schools (I've already worked a bit on national legislation) and indoor and outdoor home pesticide usage. I have already addressed the City Council about eliminating pesticides from city parks and they have done so! A reporter is visiting my home tomorrow afternoon to interview me for a feature article in our local news. Another opportunity to get the word out! I've also written two articles that detail the work I have done that appeared in our local Sierra Club newsletter.

Thanks again for being there for concerned Moms like me. Keep up the good work!

Carol Allaire
Columbus, OH

Dear Ms. Allaire,

Thank you for everything you have done! Your work is admirable and inspiring. In addition to your contribution to your city, you are showing the way for others interested in ending the dangers posed by pesticides. Community action and individual experience has shown us that the risks associated with pesticide dependency are unnecessary risks.

Please do not hesitate to contact Beyond Pesticides for any support or assistance you may need in your future endeavors. Among other resources available from Beyond Pesticides, we can help you in your pursuit to create a safer school environment with our publication Expelling Pesticides From Schools ($15 ppd). *Beyond Pesticides offers a range of information for anyone interested in challenging the current state of pesticide usage. Let us know how we can help!*

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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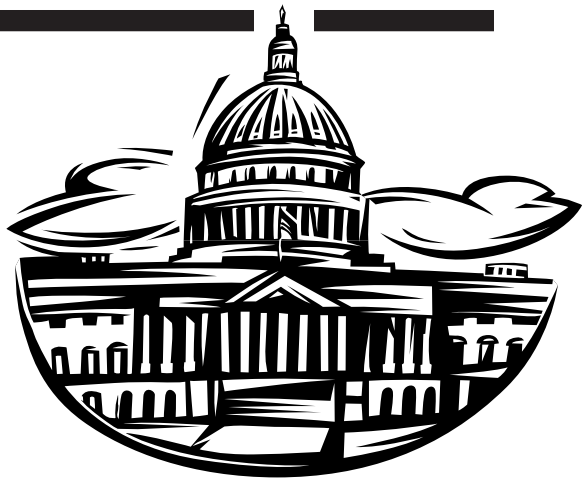


Groups Petition EPA to Ban Hazardous Wood Preservatives

Enough is enough. After years of delayed risk assessments and broken promises, environmentalists began the process to sue the Environmental Protection Agency (EPA) to ban three of the most commonly used wood preservatives. Citing government inaction to protect the nation's children from exposure to widely-used and highly toxic wood preservatives, Beyond Pesticides along with other environmental and public health groups petitioned EPA to immediately stop the continued use of the chromated copper arsenate (CCA), pentachlorophenol (penta) and creosote. Two petitions, which were filed on December 21, 2001 and a third filed on February 22, 2002, state that EPA has sufficient data on wood preservatives' health and environmental risks and the economically viable alternatives to initiate cancellation and suspension proceedings, rather than conduct further reviews. CCA and penta are linked to a large number of health problems including cancer, birth defects, kidney and liver damage, disruption of the endocrine system and death. In fact, two of the components of CCA, arsenic and chromium (VI), are classified as known human carcinogens. Penta, classified as a probable carcinogen and a known endocrine disruptor in its own right, is contaminated with dioxins. Other groups joining Beyond Pesticides on one or more of the petitions include the Agricultural Resources Center, Center of Health, Environment and Justice, Clean Water Action, Farmworker Justice Fund Inc., GreenCAPE, Greenpeace USA, Haverhill Environmental League, Healthy Building Network, Learning Disabilities Association of America, MCS: Health & Environment, Northwest Coalition For Alternatives to Pesticides, Ohio Network for the Chemically Injured, Pesticide Action Network North America, U.S. PIRG, Vermont PIRG, and Washington Toxics Coalition.

EPA Announces Wood Preservative Phase-out, Environmentalists Want a Full Ban

On February 12, 2002, EPA, pressured by the threat of lawsuits (see previous story) and intense media scrutiny, announced a voluntary action by the wood preservatives industry to "phase-out" use of wood treated with the popular arsenic-based wood preservative, chromated copper arsenate (CCA), which has been linked to cancer, nervous system damage and birth defects. While this is a major step forward, there is plenty of fine print. First of all, nothing has to happen until December 31, 2002. Even then, the agreement stops production of CCA-treated lumber for residential uses, but allows existing lumber stocks to be sold off. All existing structures, including decks, picnic tables and playground equipment, will remain untouched by the phase-out. The agreement also ignores the disposal issue. If a homeowner chooses to get rid of the arsenic laden patio in the back yard, the leaching chemicals could cause further contamination somewhere else. Industrial uses, like utility poles, are not covered in the voluntary action. The other major wood preservatives, pentachlorophenol and creosote, are not addressed in the agreement. While welcoming any action that reduces continued exposure to toxics, environmentalists say that there is no justification to allow continued public exposure because alternative materials are available. "Nothing short of a ban of all uses of the hazardous wood preservatives will protect the public from the chemical's short and long term adverse health effects," said Jay Feldman, Executive Director of Beyond Pesticides. "Since less toxic and non-toxic alternatives are available for all wood preservative uses, it is wrong and unnecessary to allow any use to continue." Many hardware stores across the country, including all Home Depot stores in the U.S. and Canada, say they have already begun to remove CCA-treated wood from their shelves or will sell off the wood by the end of this year.

SEPA Passes the Senate...Again

As promised by the leadership of the U.S. Senate, legislation to protect children from pesticides in schools is before Congress again, after passing the U.S. Senate. On February 13, 2002, the *School Environment Protection Act* (SEPA), which requires parental notification and schools to use integrated pest management (IPM), was passed as an amendment to the Senate version of the Farm Bill. SEPA, sponsored by Senator Robert Torricelli (D-NJ), was previously attached to the Senate Education Reauthorization Bill, but lost by one vote to Republicans in a joint House-Senate Education Conference Committee last November. "We hope that the Agriculture Conference Committee will now see the importance of embracing this piece of legislation.

Children, teachers and school staff deserve the basic health and safety protections that this measure would provide," said Kagan Owens, Program Director at Beyond Pesticides. Because SEPA was not included in the House version of the Farm Bill, its fate will be decided by a joint House-Senate Agriculture Conference Committee. *Beyond Pesticides urges you to contact your Senators and Member of Congress about SEPA. More information is available at* www.beyondpesticides.org.

United Nations Calls U.S. Exports of Banned Pesticides "Immoral"

The news organization *Ascribe* reports that at a meeting with environmental and human rights groups in December 2001, a United Nations (UN) investigator voiced severe criticism of United States' regulations concerning pesticide exports. Investigating for the UN Commission on Human Rights, Fatma Zora Ouchachi-Vesely studied U.S. practices of exporting pesticides and other toxics that have been banned for domestic use. "Just because something is not illegal, it may still be immoral. Allowing the export of products recognized to be harmful is immoral," Ms. Vesely said. The U.S. government cites international free-trade agreements that allow pesticides to be exported without regulation to countries that demand them, whether or not they are banned within the U.S. However, environmental and public health organizations believe this demand is a result of promotional campaigns funded by companies that profit from pesticide sales. Ms. Vesely concluded that the export of dangerous pesticides greatly affects human rights. "Even if something is marked 'poison' it tends to be shipped in large amounts, then transferred to smaller containers without proper labeling for local sale and use. And the people actually using the products often cannot read anyway." The organization, International Labor, reports that 65 to 90 percent of children working in Africa, Asia and Latin America work in the agriculture sector and are exposed to pesticides as they work, as well as through residential water supplies.

EPA Wonders If Pesticides Should Be Tested on Humans

While the right thing may seem obvious, EPA can't decide if it wants to let humans be used as guinea pigs for the pesticide industry. In November 2001, the *Los Angeles Times* reported that EPA plans to accept industry data gathered by intentionally exposing paid subjects to pesticides despite the agency's public rejection of human testing toward the end of the Clinton Administration. Then, in December, EPA announced that it was reconsidering its decision, and asked the National Academy of Sciences (NAS) for its recommendation of "whether to accept, consider or rely on research involving deliberate exposure of human subjects to toxicants." A spokesperson for EPA said it would not accept results from human tests on pesticides until the NAS completed its evaluation of the ethical and scientific issues. "Formulating a policy that appropriately reflects our competing concerns in this matter will not be easy, and I thank the National Academy of Sciences for agreeing to assist EPA in evaluating these complex issues," said EPA Administrator Christine Whitman. Environmentalists have argued that government acceptance of such studies from the pesticide industry is unethical and unscientific. Most human studies pay students and other people in need of money a few hundred dollars to be test subjects in experiments, if they sign a waiver giving up their right to sue for adverse effects. In many cases, the subjects are required to ingest pesticides over a number of weeks. The agricultural and pesticide industries argue that human testing yields more precise human tolerance measures than animal testing.

EPA No Longer Requires "Caution" for Class IV Pesticides

The clever marketing and packaging of pesticide products often make us forget that the spray bottles sitting next to our food in the grocery aisles are actually registered poisons. However, the signal words, "Caution," "Warning" and "Danger," on the product labels have always reminded consumers what they're really dealing with. In a move that disappointed environmentalists, on February 12, 2002, EPA allowed the deletion of the signal word "Caution" on toxicity category IV pesticide product labels. Pesticide Toxicity categories range from I to IV, I being the most toxic and bearing the signal word "Danger. " Toxicity category II products must bear the signal word "Warning," while "Caution" has been used to indicate both class III and IV pesticides. EPA officials say they made the decision to allow the removal of the signal word from class IV pesticides in order to eliminate confusion among consumers trying to gauge the risks associated with these pesticides and the more toxic ones bearing the same signal word. Fenoxycarb is an example of a class IV pesticide. Despite its low acute toxicity, EPA considers it a probable human carcinogen. Environmentalists are upset that pesticides like this no longer require the signal word "Caution." *For more information, contact Jean M. Frane, Field and External Affairs Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Ave., N.W., Washington DC 20460, (703) 305-5944,* frane.jean@epa.gov, *or contact Beyond Pesticides.*

Pesticides Linked to Chronic Fatigue Syndrome

Mohammed Abou-Donia, Ph.D., a professor at Duke University School of Medicine who has published several groundbreaking studies linking pesticides to neurological diseases over the last several years, announced at a conference in Sydney, Australia that chronic fatigue syndrome may be caused by exposure to common household pesticides, such as head lice treatments and insect repellents. Dr. Abou-Donia studied rats exposed to repellents and insecticides together. The rats suffered brain cell death that he says is consistent with "muscle weakness, joint pain and problems with the central nervous system." Dr. Abou-Donia stresses that more research is needed on multiple chemical exposures. He feels the government should strictly regulate household chemicals since little is known about their interaction with other chemicals to which humans are regularly exposed, including over-the-counter medicine. Dr. Abou-Donia explains that stress causes further susceptibility to chemical injury by breaking down the blood-brain barrier, allowing damaging chemicals easier access to the brain, resulting in chronic fatigue syndrome. In 1996, he studied the synergistic effects of the insecticide permethrin and the insect repellant DEET (*Journal of Toxicology and Environmenatal Health,* 48: 35-56, 1996). This work has serious implications for communities combating West Nile virus and other insect-borne diseases, or those spraying for nuisance control. *Professor Mohammed Abou-Donia will be speaking at the 20th National Pesticide Forum,* Streams to Schools: Finding Alternatives to Pesticides*, April 26-28 in Seattle, WA. His talk will address synergistic effects and the link between pesticides and neurological diseases. For more information or to register for the conference, visit www.beyondpesticides.org or call Beyond Pesticides (see back cover).*

Organic Farmers Fight Back

According to the Saskatchewan Organic Directorate (SOD), Canadian organic farmers faced with the risk of losing their most lucrative crop, filed a class-action lawsuit against Monsanto and Aventis, asking for millions in damages due to lost organic markets from the drift of genetically engineered (GE) canola. Determining the actual amount of damages will be an ongoing process as the suit continues, said lawyer Terry Sakreski, who is representing SOD. All 1,000 organic farmers in Saskatchewan are part of the suit, and organic farmers in other parts of Canada may opt in. Organic growers who comply with growing standards that include no GE varieties and no pesticides have argued for years that pollen from GE canola is contaminating fields across the prairies. Many organic farmers who have given up growing canola because they cannot assure customers the crops are GE-free, identify Roundup Ready and Liberty Link canola as the organic canola market destroyers. The lawsuit also requests that the court impose an injunction against the release of GE wheat, which could potentially cause even more damage than the GE canola. According to SOD president Arnold Taylor, the release of GE wheat would be devastating, since wheat is organic producers' largest export in Saskatchewan. The suit states that the genetic modifications amount to pollutants, which have damaged organic farming through being discharged into the environment, under the *Environmental Management Protection Act* of Saskatchewan. It also claims that farmers buying Roundup Ready or Liberty Link seed were not warned about the potential harm to neighboring crops and that farmers were not warned to provide buffer zones between GE and other crops. *For more information on organic agriculture, drift or the link between genetic engineering and pesticides, contact Beyond Pesticides.*

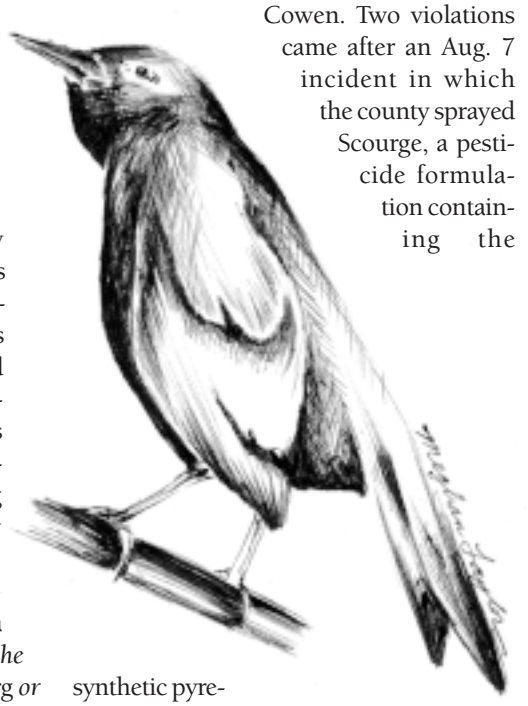
Environmental Groups Sue EPA for Bird Deaths

The American Bird Conservancy (ABC), Defenders of Wildlife and Biodi-versity Legal Foundation have joined forces on behalf of the birds. On January 28, 2002, the three organizations filed a notice of intent to sue the Environmental Protection Agency (EPA) for violations of the *Endangered Species Act, Migratory Bird Treaty Act,* and *Administrative Procedure Act* to ban the use of the organophosphate pesticide fenthion for adult mosquito control in Florida. Fenthion, which is toxic

to birds even in very low doses, was responsible for twelve recent kills that affected hundreds of birds from sixteen different species when it was sprayed at a rate of only 2/3 ounce per acre. In a separate instance, when used for adult mosquito control, it caused the death of 25,000 birds of 37 species. Fenthion is also responsible for the deaths of the endangered Piping Plover. The pesticide, often applied by a helicopter, remains in the air for long periods and can cause increased exposure to birds at deadly levels. Areas distant from the original application site are often contaminated by drift. In humans, fenthion can cause nausea, dizziness, confusion, and at very high exposures, respiratory paralysis and death. Fenthion has been identified as a carcinogen in mice. It is readily absorbed through the skin, and studies have found unacceptable levels of residue in areas where humans are likely to be exposed. Florida is currently the only state in the U.S. using fenthion for mosquito control. Its only other use is to control dragonfly larvae in contained ornamental fish production ponds in Arkansas, Florida and Missouri. *For more information on the lawsuit, see* http://www.banfenthion.org *or call ABC at 540-253-5780.*

Residents Concerned About West Nile Virus Pesticides Making Headway on Long Island

According to the Long Island, NY newspaper, *Newsday*, local environmentalists are getting closer to convincing Suffolk County officials to study the threat its mosquito control program, the largest in the Northeast, poses to area wildlife and residents. In the past, environmentalists have criticized the county for using outdated and non-germane studies to assess the impact of the pesticides. "We're saying Suffolk County has neglected to do any kind of monitoring or evaluation in terms of how these products are affecting the environment and the public's health," Adrienne Esposito of the Citizens Campaign for the Environment told *Newsday*. In the past two years, the New York State Department of Environmental Conservation (DEC) has issued the county 14 violations for misusing pesticides. "It raises concerns about the county's attention to detail," said DEC regional director Ray Cowen. Two violations came after an Aug. 7 incident in which the county sprayed Scourge, a pesticide formulation containing the synthetic pyrethroid resmethrin, which is lethal to fish, within 21 feet and 41 feet of water at two sites. Scourge's label requires a 150-foot radius. According to *Newsday*, hundreds of dead grass shrimp and baby flounder were found at one of those sites five days later. Suffolk County's Division of Vector Control plans to improve the safety of its mosquito control program by shifting from the use of more harmful pesticides that kill adult mosquitoes to using less toxic larvicides.



Idaho Farmers Living the Organic Life

Way to go Idaho! According to the U.S. Department of Agriculture, the number of organic farmers in Idaho has grown tenfold since 1990, from 11 to 123. Whether it is the lure of the better payoff for organic farmers or the need to feed people with healthy food, the lure is so strong that Idaho is now one of the top five states in the nation for organic acreage. Mary Jane Butters, a former wilderness ranger with the U.S. Forest Service and Utah native, has spent the last decade building her organic farm and company in Idaho. She told the *St. Louis Tribune* that she has gone from selling a few pounds of falafel out of her kitchen in 1990 to selling nearly $400,000 worth of organic products today, including salsas, soups, breads, salads and a line of backpacking foods labeled and distributed by REI (Recreational Equipment Incoporated). Organic foods, once viewed as food reserved for socially and environmentally conscious consumers, are finding their way into mainstream grocery stores. In 2000, organic food sales totaled $7.8 billion, helping organic farmers gain a foothold in a growing niche market. Turning today's consumers on to organic food has not been an easy task since organic foods do tend to be more expensive. Julie Pipal, spokeswoman for the Idaho Department of Agriculture, said that they typically receive several phone calls a week from farmers wanting to switch to organic farming methods and become state certified. Ms. Butters told the *St. Louis Tribune* that she hopes that one day organic food will dominate retail shelves. "I want to take back our language. I don't want to have to call it an organic carrot. I want to call it a carrot, and let them call it a chemical carrot."

Pesticide Found in "Organic" Flour From Australia, U.S. Flour OK

The Japan Offspring Fund, a Tokyo-based public interest organization, found post-harvest pesticides in Australian bread produced with organic flour. Pesticide residue was also found in the Australian organic flour, baked by the First Baking Co. Ltd., Tokyo. Unfortunately, even if flour

is produced organically, processors sometimes use pesticides to treat facilities and warehouses. The bread tested by the Japan Offspring Fund contained chlorpyrifos, a neurotoxic organophosphate insecticide, which is having many of its uses phased-out in the U.S. The detected amount was 5 parts per billion (ppb). The Japan Offspring Fund also tested five organic flours from three cities in the U.S., and one from Australia.Among the six organic flours, chlorpyrifos-methyl was detected at 240 ppb in the Australian flour. The Australian flour is certified by Biological Farmers of Australia, the same certification agency that fraudulently certified the flour of the First Baking, Co, Ltd. Organic produce does not necessarily mean there are no pesticide residues. Under U.S. law, if grown in accordance with organic standards and pesticide residues are less than 5% of the tolerance level decided for conventional products, it is legal. However, the use of synthetic post-harvest pesticides is not allowed for organic products. Since the chlorpyrifos is only used as a post harvest pesticide, detection of even a small amount of this pesticide means the product is illegal.

Genetically Modified Super-Weeds Invade Canada

Despite a 175-meter buffer zone that the Canadian government requires around fields planted with genetically modified (GM) crops, "super-weeds," or plants that have become resistant to several widely used herbicides due to drift of GM pollen, are invading the Canadian countryside. In effect, the biotech industry has created a monster, forcing farmers to resort to using older, more toxic herbicides to control the GM invaders. According to English Nature, the United Kingdom's government advisory body on conservation that is working to prevent a similar problem in England, an extensive study of GM herbicide tolerant oilseed rape crops in Canada has revealed that genes from separate GM varieties can accumulate (gene stacking) in plants. This happens because different varieties cross-pollinate, and their offspring may contain the accumulated genes from GM varieties with different genetic traits. Dr.

Brian Johnson, English Nature's biotechnology advisor said, "Our report shows that the [current industry] code is probably inadequate to prevent gene stacking happening in Britain, if these crops were commercialized. The consequences for farmers could be that volunteer crops would be harder to control and they might have to use different, and more environmentally damaging, herbicides to control them." English Nature is concerned that attempts to eliminate GM weeds with multiple herbicide tolerances could lead to more intensive herbicide use in field margins and uncropped habitats, which can be important refuges for wildlife. Environmentalists in the U.S. hope EPA will follow the UK's lead.

Fire Prevention Not Free Pass to Spray Herbicides, Says CA Judge

For years, herbicides have been sprayed to reduce underbrush as part of state and national fire prevention programs. As an added bonus for the timber industry that thrives on government subsidies, the removal of underbrush, which serves as habitat and food for many forest dwelling species, eliminates resource competition for lucrative hardwoods that fetch the largest price in the marketplace. Until recently, timber interests in California, one of the highest timber producers in the country, could spray without taking a second look at the negative consequences. Fed up with the lack of accountability, Californians for Alternatives to Toxics (CAT) and the Environmental Protection Information Center brought a lawsuit against the state and convinced the San Francisco superior court to strike down the Department of Forestry and Fire Protection (CDF) Vegetation Management Plan, because it failed to evaluate how the anticipated use of herbicides would impact the environment. "CDF had an obligation to evaluate and disclose the potential for significant environmental effects from the use of herbicides as an integral part in its statewide vegetation management program and as a reasonably foreseeable future activity of applicants for funds under Vegetation Management Plan," said Judge David Garcia in a January 6, 2002 opinion. CDF argues that the state pesticide registration process covers the regulations necessary for herbicide use. Environmentalists disagree. "The damage caused by herbicide use is likely to be very significant and must be evaluated to fully assess the effectiveness of CDF's program," said Patty Clary, executive director of CAT. The plan also fails to assess other affected areas of the environment, including habitat destruction, increased erosion and the spread of noxious weeds.

Pesticides Threaten Salmon

By Pollyanna Lind

The USGS has found concentrations of pesticides in Pacific rivers and streams at levels associated with negative impacts on fish growth, development, behavior, and reproduction.

Salmon are a cornerstone of the Western United States' cultural and environmental heritage. In order to thrive, salmon need clean water. The use of pesticides by people in both rural and urban areas pollutes our streams and rivers and poses a serious threat to the health of salmon populations and communities.

Designed to kill or damage living things, pesticides are "perhaps the only toxic substances that are purposefully applied to the environment."[1] Pesticides include insecticides, herbicides, fungicides, rodenticides, etc.[2] They are commonly used in schools, parks, homes and gardens, on farms and forests, in lakes and irrigation canals, along roads and railways, and in many other settings. Researchers, looking at where pesticides go in our environment, find that they often end up in our waterways.

PHOTO © BRETT COLE OF WILD NORTHWEST PHOTOGRAPHY, WWW.WILDNORTHWEST.ORG

More than ten years ago, the first Pacific salmon species was listed under the *Endangered Species Act*. Twenty-six different salmon species are now listed as threatened or endangered.[6]

Pesticides can and have killed salmon directly. Perhaps more commonly, pesticides cause subtle damages that reduce salmon's chance of survival. Many pesticides cause reproductive harm, reduce survival of young salmon as they transition to seawater, impair migration, or cause behavioral changes that limit survival. Some pesticides also affect salmon indirectly by changing the abundance of food, vegetative cover, or other conditions of the aquatic environment. (For more information on pesticides and salmon see: *Diminishing Returns: Pesticides and Salmon Decline*, available at http://www.pond.net/~fish1ifr/salpest.htm and *Lethal Lawns: Diazinon Use Threatens Salmon Survival*, available at http://www.pesticide.org/diazsalmon.pdf)

The best available data regarding pesticide contamination of water in river basins nationwide come from the U.S. Geological Survey (USGS). Nationally, **more than 95% of river and stream samples contained at least one pesticide**.[3] Over half of the streams sampled contained five or more pesticides.[4] Both urban and agricultural areas have pesticide-contaminated streams and rivers.[3,4]

Five major watersheds of the Western United States studied by the USGS that overlap salmon habitat are the Willamette River Basin in Oregon, Sacramento and San Joaquin-Tulare basins in California, Puget Sound basin in Washington, and the Central Columbia Plateau in Washington and Idaho. The USGS detected 35 or more pesticides in each of these watersheds. Sixteen pesticides in Oregon, Washington, California and Idaho's river basins were found at or above levels set to protect aquatic life.[5] This information exemplifies the very real risk of pesticide contamination levels in salmon habitat.

Obviously, current pesticide regulations are failing to protect the waters that salmon need to survive from harmful contamination levels. Examination of U.S. Environmental Protection Agency (EPA) pesticide registration documents reveal that approved, legal uses of at least 36 pesticides used in this region are expected to have a negative impact on salmon and their habitat. These documents found that legal uses of various pesticides will exceed EPA hazard levels for aquatic organisms yet the EPA has failed to take adequate regulatory steps to mitigate these risks.[9]

Pollyanna Lind is the Clean Water Campaign Coordinator at the Northwest Coalition for Alternatives to Pesticides in Eugene, Oregon.

More than ten years ago, the first Pacific salmon species was listed under the *Endangered Species Act*. Twenty-six different salmon species are now listed as threatened or endangered.[6] Since the first listing, over a decade ago, EPA has violated the *Endangered Species Act* by not consulting with the National Marine Fisheries Service as to whether the registration of pesticides is harmful to salmon. The Northwest Coalition for Alternatives to Pesticides, Washington Toxics Coalition, and Pacific Coast Federation of Fisher-man's Association Inc. filed a lawsuit January 2001 against the EPA to force the agency to take action to protect salmon from pesticides. Settlement negotiations in that suit broke down January 2002, and the parties in the suit, represented by EarthJustice Legal Defense Fund, are moving forward with the lawsuit.

Current practices are creating serious water pollution problems for salmon survival. Regulations are failing to keep pesticides out of surface water, resulting in contamination levels known to be hazardous to aquatic organisms.[9] With listed species of salmon in our waterways, pesticide contamination is no longer acceptable. There is precious little time left to restore the quality of the region's waters for salmon and the ecosystems and communities that depend upon them.

Salmon symbolize many aspects of life that we value: clean water, strength, endurance, beauty, and abundance. Cleaning up our waterways will take a sustained effort by government agencies, farmers, cities and counties, and individuals. For the health of the salmon and our way of life, we must take the following actions:

1. Phase out the use of pesticides that are hazardous to the health of salmon and their habitat.
2. Adopt measures to keep pesticides out of water needed for salmon survival.
3. Establish pesticide use reporting for tracking of pesticide use to aid in salmon recovery.
4. Promote salmon-friendly practices that reduce reliance on pesticides.

Current practices are creating serious water pollution problems for salmon survival. Regulations are failing to keep pesticides out of surface water, resulting in contamination levels known to be hazardous to aquatic organisms.[9]

Solutions and recommendations for meeting these challenges can be found in ***Poisoned Waters: Pesticide Contamination of Waters and Solutions to Protect Pacific Salmon*** by Pollyanna Lind. This report also compiles water quality testing results from the USGS and provides a first-time analysis of pesticide registration documents of the U.S. EPA.

For a copy see:http:www.pesticide.orgCleanWater Salmon.html. Or, to order a copy of the report for $8, contact info@pesticide.org or (541) 344-5044.

The *Clean Water for Salmon Campaign* is committed to comprehensively addressing pesticide contamination of surface waters in OR, WA, ID, & CA. A network of over 45 organizations throughout the region is in support of the Campaign's efforts. For information about the *Clean Water for Salmon Network* contact:

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Help Eliminate Dangerous Wood Preservatives

Chemical wood preservatives account for the single largest pesticide use in the United States and one of the greatest pesticide threats to public health and the environment. Wood preservatives—used to protect wood products from fungus, insects and decay—and their contaminants are found in over two thousand hazardous waste sites across the country, and are among the most hazardous chemicals known to humankind. They are subject to expensive government cleanup efforts at a rate of nearly one billion pounds a year.

The three heavy-duty wood preservatives used most widely include chromated copper arsenate (CCA), pentachlorophenol (penta), and creosote. The hazards associated with the use, storage and disposal of these three products are unnecessary, given that viable alternatives are available for all uses. Local, state and federal policy is urgently needed to protect public health and the environment from these unnecessary risks.

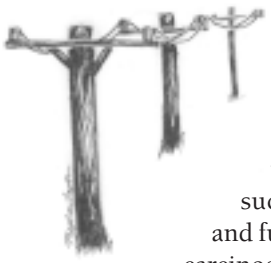
The U.S. Environmental Protection Agency (EPA) has pursued an inordinately slow review process, which began in the 1970s and has been extended year after year, ignoring much of the existing evidence that establishes these chemicals as imminent hazards. After a Special Review in the late 1970s and 1980s, EPA retained many uses of these chemicals because it could not identify viable alternatives. Recent information concerning exposure risks and available alternatives to CCA, penta, and creosote in the marketplace justify immediate action.

CCA: EPA's phase-out does not fully protect the public

The arsenic in CCA is a known human carcinogen and has been linked to nervous system damage and birth defects.[1] About 138 million pounds of CCA are used to treat wood each year.[2] Children are particularly vulnerable to the hazardous effects of CCA simply because of where they play. CCA-treated wood products are used in decks and patios, picnic tables, playground equipment, walkways/boardwalks, landscaping timbers, and fencing.

EPA recently announced a voluntary phase-out of CCA by the pressure-treated wood industry. After December 2003, wood for residential uses may no longer be treated with CCA. However, this wood can continue to be sold off until supplies are exhausted. While this phase-out is a positive first step, it does not adequately protect public health or the environment. The following CCA issues must still be addressed:

1) Phase-out is too long, allowing continued public exposure to arsenic, and should be technically feasible by the end of 2002;
2) Public awareness about how to test for and how to prevent arsenic leaching from existing structures;
3) Safe disposal methods; and,
4) The voluntary cancellation should include industrial uses of CCA, such as utility poles and marine pilings, as there are viable alternatives such as recycled steel poles and composite pilings.



Penta: More hazardous than CCA and should be immediately banned

The public health and environmental effects presented by penta are extraordinary because of contaminants such as hexachlor-obenzene, dioxins, and furans. Penta and its contaminants are carcinogens and endocrine disruptors, and several of its contaminants are persistent organic pollutants (POPs).[3] Approximately 656 million pounds of penta are used to treat wood each year.[2]

Nearly all non-wood and most wood uses of penta were banned in 1984 because of fetotoxicity and oncogenicity risks and the availability of viable substitutes. Today, over 95 percent of penta is used to treat utility poles. Despite its failure to totally ban penta in the 1980s, now there are less toxic, reliable, and affordable alternatives that readily exist in the marketplace, such as recycled steel, composite, and cement poles.

Creosote: A toxic concoction of 10,000 chemicals

Creosote is a complex mixture of many chemicals. About 300 chemicals have been identified in coal-tar creosote, but there could be as many as 10,000 chemicals present.[4] Three of the classes of chemicals found in coal-tar creosote that are known to cause harmful health effects are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols.[4] Creosote is made up of about 75-85 percent PAHs, and several of them are known to cause cancer.[5]

The American Wood Preserver's Institute estimates that approximately 1.1 billion pounds (124 million gallons) of creosote is used annually.[6] Coal tar creosote, coal tar, and coal tar pitch have been found in at least 59 of the current or former sites on the EPA Superfund National Priorities List.[6] Creosote is primarily used for railroad ties, but today there are viable alternatives such as recycled plastic and concrete.

What You Can Do

Educate the media and policy makers at the local, state, and federal levels about these issues. Use the model policy outlined below to introduce local or state policy. Using this, policy makers can take action to immediately suspend and ban all three wood preservatives, and to protect the public and the environment from existing structures and unsafe disposal practices.

For more background information, see copies of Beyond Pesticides/NCAMP's petitions to the EPA to suspend and ban CCA, penta, and creosote. These can be found on our website at www.beyondpesticides.org or contact our office for copies ($5.00 ppd; 58 pgs). You can also read our fact sheet entitled *Protecting Your Health from CCA-Treated Wood.*

Protection From Toxic Wood Preservatives Policy

(A Beyond Pesticides Model Policy)

WHEREAS, the inorganic arsenicals, such as Chromated Copper Arsenate (CCA), contains arsenic which has been classified by the U.S. EPA as a Group A, known human carcinogen;

WHEREAS, CCA also contains hexavalent chromium, which is classified by the U.S. EPA as a Group A, known human carcinogen of high carcinogenic hazard;[7]

WHEREAS, the U.S. EPA has classified pentachlorophenol (penta), as a Group B2, probable human carcinogen;

WHEREAS, the contaminants of penta, namely dioxins, furans, and hexachlorobenzene (HCB) which are classified as Persistent Organic Pollutants (POPs) and recognized as carcinogens, mutagens, teratogens, and endocrine disruptors;

WHEREAS, penta is already banned in several countries due to health or environmental risks; [8]

WHEREAS, the U.S. EPA has classified creosote, as a probable human carcinogen; [9]

WHEREAS, creosote contains carcinogenic polycyclic aromatic hydrocarbons, which are listed on the U.S. EPA's Priority list of hazardous substances;[10] and,

WHEREAS, at least 419 Superfund chemical waste sites in the United States have been contaminated with penta, 54 Superfund sites have been contaminated with creosote, and 1,656 Superfund sites are contaminated with arsenic.[11]

Section 1. Prohibition of Purchase by the *[State/City]* and its Agencies, of Wood Treated with Pentachlorophenol, Creosote, or Inorganic Arsenicals (Heavy-Duty Wood Preservatives)

(a) No *[Name of State/City]* funds shall be used by any *[State/City]* agency to purchase wood or wooden structures and other wood materials (including playground equipment, park benches, picnic tables, decks, utility poles, fencing, edging, mulch, etc.) that have been treated with any of the following heavy-duty wood preservatives:

(1) Pentachlorophenol;

(2) Creosote;

(3) Inorganic arsenicals, including arsenic, elemental arsenic, or arsenic copper combinations such as chromated copper arsenate (CCA).

(b) *[Name of State/City]* agencies shall not use any *[State/City]* funds for the retreatment of any wood structures treated with the heavy-duty wood preservatives that are prohibited from purchase pursuant to subsection (a) of this section unless the *[State/City]* agency treats the wooden structures with nontoxic and nonslippery sealers.

(c) After the date of enactment of this ordinance, all *[State/City]*-owned wood or wooden structures or materials, treated with any of the heavy-duty wood preservatives, having reached the end of their useful life, shall be replaced by either alternatives to wood, or wood that has not been treated with any of the heavy-duty wood preservatives.

Section 2. Removal of State-Owned Wood Treated with Heavy-Duty Wood Preservatives

The *[State/City[* shall conduct a monitoring program to determine the extent to which existing *[State/City]*-owned wood structures and materials treated with arsenical or penta wood preservatives present a health hazard to local citizens and therefore should be removed from use. The monitoring program shall measure the level of arsenic or penta (i) in the soil around the structure and (ii) dislodgeable residues on the surface of the wood. Where the *[State/City]* finds levels of arsenic or penta above the currently accepted standard for harmful exposure, the structures shall be removed and remediation initiated. Based on findings of these chemicals, *[State/City]* shall:

(a) require remediation of structure and/or soils to eliminate arsenic;

(b) require application of least-toxic sealants regularly, as needed (i.e., on a yearly basis, depending on local weather conditions), and that public awareness sheets be clearly posted in all public areas; or

(c) remove and dispose of (in accordance with Section 6) structures with arsenic or penta residues on wood surfaces or in surrounding soil.

Section 3. Mandatory Consumer Awareness Program

(a) *[Name of State/City]* shall immediately implement a comprehensive mandatory Consumer Awareness Program for non-industrial uses of CCA-treated wood, including all wood used in play-structures, decks, picnic tables, landscaping timbers, residential fencing, patios and walkways/boardwalks.

(b) The mandatory Consumer Awareness Program shall inform and require all public schools and recreational centers to conduct soil and surface leaching tests around all public structures made with CCA-treated wood products, including (but not limited to) public playgrounds, decks and picnic tables.

Section 4. Immediate Prohibition on Burning and Mulching of CCA-Treated Wood

A. *[Name of State/City]* shall immediately prohibit the burning of CCA-treated wood.

B. *[Name of State/City]* shall immediately prohibit the mulching of used wood products containing CCA, and the selling of mulch or similar products that contain CCA.

Section 5. Storage of State-Owned Wood Treated with Heavy-Duty Wood Preservatives

[Name of State/City] agencies responsible for storing wood treated with any of the heavy-duty wood preservatives shall store such treated wood under cover from all forms of precipitation. All run-off produced from treated wood in storage shall be collected and monitored for heavy-duty wood preservative leachate.

Section 6. Safe Disposal of Heavy-Duty Wood Preservatives

(a) *[State/City]* shall adopt policies that exceed the *Resource Conservation and Recovery Act* (RCRA), 40 CFR 261.4(b), by categorizing wood treated with heavy-duty preservatives as hazardous waste. 40 CFR 261.4(b) is quoted below:

"*Solid wastes which are not hazardous wastes.* The following solid wastes are not hazardous wastes: ... (9) Solid waste which consists of discarded arsenical-treated wood or wood products which fails the test for the Toxicity Characteristic for Hazardous Waste Codes D004 through D017 and which is not a hazardous waste for any other reason if the waste is generated by persons who utilize the arsenical-treated wood and wood product for these materials' intended end use."

(b) In the *[City/State]*, all CCA-treated wood products shall be disposed of in a lined landfill designed to handle hazardous waste, with a leachate system and groundwater monitoring system.

Section 7. This Act Shall Be Enforced Six Months After Its Enactment

This Act shall pertain to the use of the heavy-duty wood preservatives on wood structures on all lands with the political jurisdiction of the *[State/City]* beginning six months after its enactment.

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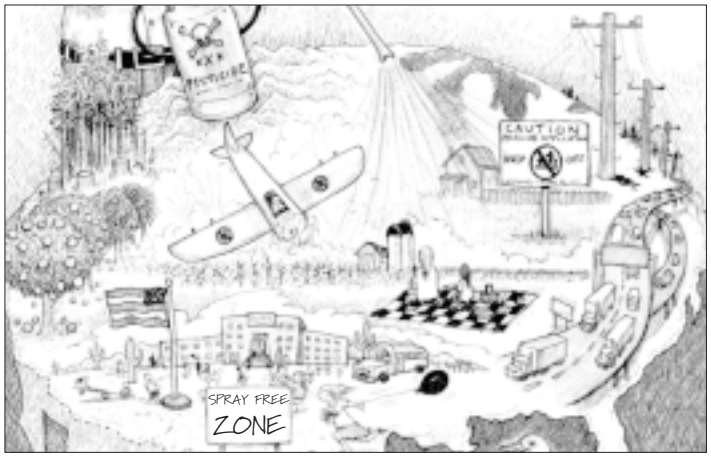
The Schooling of State Pesticide Laws – 2002 Update

A review of state pesticide laws regarding schools

By Kagan Owens and Jay Feldman

Beyond Pesticides surveyed state pesticide laws regarding pesticide use in schools in 1998 and 2000. Since the report's publication in 2000, five states[1] have passed laws that address one or more of the following five evaluation criteria: (i) restricted spray (buffer) zones to address chemicals drifting into school yards and school buildings; (ii) posting signs for indoor and outdoor pesticide applications; (iii) prior written notification for pesticide use; (iv) prohibiting when and where pesticides can be applied; and, (v) requirements for schools to adopt an integrated pest management (IPM) program. These five criteria are essential ingredients in a program to protect children from pesticides used in schools.



Although there continues to be growing movement on this issue, including pending federal legislation, the *School Environment Protection Act*, pesticide use policies and practices remain deficient in the protection of children. Without minimum federal standards, the protection provided children is uneven and inadequate across the country. Just two-thirds of the states, or 33 states, have adopted pesticide acts and regulations that address the protection of children by specifically focusing on pesticide use in, around or near schools. Of these, only 24 states address indoor use of pesticides.[2]

Beyond Pesticides' survey of state laws regarding pesticide use in schools shows that:

- 7 states recognize the importance of controlling drift by restricting pesticide applications in areas neighboring a school;
- 15 states require posting of signs for indoor school pesticide applications and 24 states require posting of signs for pesticide application made on school grounds;
- 21 states require prior written notification to students, parents, or staff before a pesticide application is made to schools;
- 10 states restrict when or what pesticide may be applied in schools; and
- 15 states recommend or require schools to use IPM.

These laws are instrumental in improving protections from school pesticide use. However, to the extent that these laws do not prohibit the use of toxic pesticides around children and do not treat pesticide exposure as a public health issue by providing universal prior notification of pesticide use, they all to some degree compromise the protection of children. Massachusetts is the only state in the nation to prohibit the use of the most dangerous pesticides in and around schools. Although the Massachusetts' law has some weaknesses, it should be considered, along with Maryland's state school pesticide law, a model for other states.

Restricted spray (buffer) zones around school property

Buffer zones can eliminate exposure from spray drift on to school property. In order to adequately protect against drift, buffer zones should, at a minimum, be established in a 2-mile radius around the school's property and be in effect at all times of the day. Aerial applications should have a larger buffer zone, at least 3 miles encircling the school. Seven states have recognized the importance of controlling drift by restricting pesticide applications in areas neighboring a school that range from 300 feet to 2 1/2 miles.

Posting notification signs for indoor and outdoor pesticide applications

Posted notification signs warn those at the school when and where pesticides have been or are being applied. It is important to post signs for indoor and outdoor pesticide applications because of the extensive period of time students and school employees spend at school. Signs posted days before, rather than simply at the time or just after a pesticide application, are more protective. Prior posting may enable people to take precautionary action. Because of the residues left behind after an application, signs should remain posted for 72 hours.

This report is the third edition of the report released in Pesticides and You, "The Schooling of State Pesticide Laws – 2000" (volume 20, no. 2, 2000) and "The Schooling of State Pesticide Laws" (volume 18, no. 3, 1998).

How States Around the Country Protect Children From Pesticide Exposure in Schools

State	Buffer Zones	Posting Signs[1]	Prior Notification[2]	IPM[3]	Prohibition of Use
Alaska		Indoor & outdoor, post sign, remain for 24 hours. When school out of session & open to public, post notification sign 24 hours prior to application.	Parent & staff registry or universal notification, school decision, 24 hour notice.		Children prohibited from entering treated area for 24 hours, or the reentry interval stated on the label.
Alabama	Aerial application, 400 feet.				
Arizona	Ground & aerial application, 1/4 mile, certain odoriferous & highly toxic pesticides.	Indoor & outdoor, school district establish posting requirements.	Parent & staff, universal 48 hour notice.		
California		Indoor & outdoor, post sign 24 hours prior to application, remain 72 hours.	Parent & staff registry, 72 hour notice.	Recommends.	
Connecticut		Outdoor, post sign, no specifics on time to remain posted.	Parents & staff registry, 24 hour notice.	Recommends.	Pesticide applications prohibited during operating hours.
Florida		Outdoor, post sign beginning of application, no specifics on time to remain posted.		Requires.	
Georgia		Indoor, prior posting, remain 24 hours. Outdoor, prior posting, remain until the following day.			
Illinois		Outdoor, post sign, remove following day.	Parent registry or universal notification, school decision, 48 hour notice.	Requires.[4]	
Kentucky		Outdoor, post sign immediately following application, remain until the following day.	Parent & staff registry, 24 hour notice.	Requires.	
Louisiana	Aerial application, 1000 feet, during school hours.		Parent registry, medical verification required, no time specified.	Requires.	Applications of restricted use pesticides, entry restricted for 8 hours after application.
Maine		Outdoor, post prior to application, remain 48 hours.	Parent & staff can request notification, outdoor applications.[5]	Recommends.	
Maryland		Indoor & outdoor, "in-school notification." Outdoor, post sign at time of application, remain 48 hours.	Parent & staff, elementary school, universal 24 hour notice, secondary school, registry, 24 hour notice.	Requires.	
Massachusetts	Aerial crop application, 150 feet.	Indoor, post prior to application. Outdoor, post sign 48 hours prior to application, remain 72 hours.	Parent & staff, universal notification, outdoor applications. Parent & staff registry, indoor application, no time specified.	Requires.	Pesticide use prohibited when children present. Outdoor, pesticides that are known, likely or probable carcinogens, contain a "List I" inert ingredient or for aesthetic reason alone are prohibited from use. Indoor, certain pesticides are prohibited.
Michigan		Indoor, post sign after application, remain 48 hours. Outdoor, post sign after application, remain 24 hours.	Parent registry, 24 hour notice.	Requires.[6]	Indoor, spray or aerosol insecticide, entry restricted for 4 hours after application. Outdoor, prohibits spray insecticide, 100 ft outside occupied area.

[1] Five states require posting notification signs for outdoor lawn applications: Colorado, Indiana, Iowa, Ohio, and Vermont. These states are not included because this is the only requirement the states have adopted regarding schools.
[2] Does not include provisions regarding universal notification of the school's pest management program at the start of the school year or provisions requiring schools to provide written notice after applications have taken place.
[3] Does not include states (like Hawaii, Indiana, Oklahoma, Pennsylvania, South Carolina, and Tennessee) that have developed materials on school IPM. The section only applies to the states that have adopted acts or regulations requiring or recommending schools adopt IPM.
[4] Illinois requires IPM for structural pest management only.
[5] Maine's law allows for individuals to request to be notified of an outdoor application by contacting the school directly and setting up an agreed upon prenotification time. Law does not require schools to establish a formal registry.
[6] Michigan requires IPM plans be developed for indoor pest management only.

How States Around the Country Protect Children From Pesticide Exposure in Schools

State	Buffer Zones	Posting Signs[1]	Prior Notification[2]	IPM[3]	Prohibition of Use
Minnesota			Parent registry, notification at "reasonable" time before application.	Requires.	
Montana		Indoor, post sign at time of application, remain "until dry."		Recommends.	
New Hampshire	Aerial application, during commuting hours & outdoor activity in sensitive areas.	Outdoor, post sign, remain 24 hours.			Pesticides cannot be applied "where exposure may have an adverse effect on human health."[7]
New Jersey	Ground & aerial gypsy moth application, during commuting hours, 2 miles grade school, 2 1/2 miles high school. Aerial application, 300 feet.	Indoor, permanent posting at central bulletin board, states next application. Outdoor, post sign at start of application, remain 24 hours.	Parent & staff registry, no time specified.		Pesticide application prohibited during normal school hours or when area will be occupied within time for product to dry.
New Mexico		Indoor & outdoor emergency applications only, no specifics on time.	Parent registry, no time specified. Parent and staff universal notification, child care center, 48 hour notice.		Prohibits use of certain pesticides when area occupied or will be for next 6 hours. Licensed childcare centers use of pesticides prohibited when children on premises.
New York		Indoor & outdoor, daycare center, post sign 48 hours prior to application. Outdoor, post sign, remain 24 hours.	Parent & staff registry, 48 hour notice.	Recommends.	
North Carolina	Aerial application, 300 feet, when school occupied.				
Pennsylvania			Parent & staff registry, medical verification required, school application & within 500 feet of school property, 12 to 72 hour notice.		No applications in "common access areas" during normal school hours or extracurricular activities, restricted entry 7 hours after application.
Rhode Island		Outdoor, post sign, remain 72 hours.	Parent & staff registry, 24 hour notice.		
Texas		Indoor, post sign 48 hours prior to application, no specifics on time to remain posted.	Parent registry, indoor & perimeter application, no time specified.	Requires.	Pesticides are grouped into lists. No indoor application of certain Green List when students in area. Other Green List & Yellow & Red Lists, restrict entry for 12 hours after application. Outdoor applications, Green List: students must be 10 feet away, Yellow List: 10 feet away, 12 hours restricted entry, Red list: 50 feet away, 12 hour restricted entry.
Washington		Indoor & outdoor, post sign at time of application, remain posted for 24 hours.	Parent & staff registry or universal notice, 48 hour notice.[8]		
West Virginia		Indoor, day care center, post sign 24 hours prior to application, no specifics on time to remain posted.	Day care employees, automatic 24 hour notice, level 3 or 4 pesticide. Parent registry, schools & day care centers, 24 hour notice of level 3 or 4 pesticide.	Requires.	Pesticides are grouped into levels. Students & employees restrict entry for 4 hours after level 3 pesticide & 8 hours after level 4 pesticide.
Wisconsin		Indoor & outdoor, post sign at time of application, remain 72 hours.			
Wyoming		Indoor & outdoor, post sign 12 hours prior to application, remain 72 hours.	Parent & staff, universal prior notice.[9]		

[7] Although this language is open to interpretation, it is a stronger safety standard than contained in the *Federal Insecticide, Insecticide, Fungicide and Rodenticide Act* (FIFRA), which protects for "unreasonable adverse effects."
[8] Washington law states that a school "as a minimum, notifies interested parents or guardians of students and employees at least 48 hours prior to a pesticide application."
[9] Wyoming school pesticide notification act requires the pesticide applicator provide 72 hour prior notice to the school district, which is required to "further notify students, teachers and staff."

Fifteen states require posting of signs for indoor school pesticide applications. New York and Texas, the two strongest states in this regard, require posting warning signs at least 48 hours in advance of the application. Three states, California, Wisconsin and Wyoming, require that signs remain posted for 72 hours, the longest time frame among the states.

Twenty-four states have posting requirements when pesticide applications are made on school grounds. Massachusetts and New York require sign posting 48 hours in advance of the pesticide application in school buildings and on school grounds. Five states require that signs remain posted for at least 72 hours. Twelve states require posting for both indoor and outdoor pesticide applications.

Prior written notification

Written notification prior to each pesticide use is a good way to make sure that *all* parents, children and staff are aware and warned. There are basically two types of notification – registries and universal, and modified systems that incorporates elements of both. Notification-based registries are a less effective means of notifying people and do not qualify as true right-to-know because of their limited scope. Requiring that individuals place themselves on registries affords only those who already know about toxic exposure the opportunity to be informed about pesticide use in the school. Registries also tend to be more costly and time consuming for the school because of the time associated with list management. Prior notification should be 72 hours in advance to make sure the information has been received, to get further information regarding the pesticide, and to make arrangements to avoid the exposure, if necessary.

Twenty-one states have requirements to notify parents or school staff in writing before a pesticide application is to occur. Of these, nine states have provisions for universal notification prior to each pesticide application.[3] Nineteen states have provisions that establish a registry, allowing individuals to sign up for prior notification.[4] The widest range of notification activities, requiring posting signs for indoor and outdoor applications and providing prior notification of a school pesticide application, are met by only ten states.

Prohibitions on use

Limiting when and what pesticides are applied in and around schools is important to the reduction of pesticide exposure. Pesticides should never be applied when students or staff are, or likely to be, in the area within 24 hours of the application. Ten states restrict the type and/or timing of pesticides that may be used in a school. In reality, certain types of pesticides, such as carcinogens, endocrine disruptors, reproductive toxins, developmental toxins, neurotoxins and pesticides listed by EPA as a toxicity category I or II pesticide should never be used around children. Massachusetts is the only state that bans the use of certain pesticides by schools. Alaska has the longest re-entry restrictions, requiring that the area treated with certain pesticides remain unoccupied for 24 hours after the application.

Integrated pest management

A good integrated pest management (IPM) program can eliminate the unnecessary application of synthetic, volatile pesticides in schools. The main elements of a good IPM program include: 1) monitoring to establish whether there is a pest problem, 2) identifying the causes of the pest problem, 3) addressing the cause by changing conditions to prevent problems, 4) utilizing pest suppression techniques, if necessary, that are based on mechanical and biological controls, and 5) only after non-toxic alternatives have been tried and exhausted, use the least toxic pesticide.

Fifteen states address IPM in their state laws, but only ten of those require that schools adopt an IPM program. Unfortunately, IPM is a term that is used loosely with many different definitions. More and more, we hear pest control programs inaccurately described as IPM. Of the fifteen states, California, Illinois, Maryland, Massachusetts and Minnesota, have comprehensive definitions of IPM, and allow only the least toxic pesticide to be used as a last resort. It is important to incorporate a strong IPM definition into policies and laws to achieve effective, least-hazardous pest management.

Conclusion

Raising the level of protection across the nation to meet the highest possible standard of protection for children is essential. Where a state offers protection not provided by your state, advocate for it. Where policies exist, make sure that they are enforced. Enforcement of existing pesticide laws is also critical and often the most difficult phase of community-based efforts. Both the adoption of laws and ensuring their enforcement once adopted, require vigilant monitoring and public pressure. Exemptions that waive notification requirements before or after pesticide use, such as during school vacations, undermine protection.

Parents and community members can help school districts improve their pest management practices by contacting district officials and encouraging them to implement an IPM and notification program. School administrators will be more conscious of their pest management policy if they know parents are concerned and tracking their program.

For information on state pesticide laws, school district policies, and tools on how to get such policies at the federal, state and local level adopted, please contact Beyond Pesticides or see www.beyond pesticides.org.

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1 The five states that have passed school pest management laws since "The Schooling of Pesticide Laws- 2000" include Alaska, Kentucky, Rhode Island, Wisconsin, and Wyoming.

2 States that "address" indoor use of pesticides are based on whether the state requires schools post notification signs for indoor pesticide applications, provide prior notification of an indoor pesticide applications prohibit the use of certain pesticides in school buildings or recommend or require integrated pest management.

3 This includes the three states that give the schools the choice of providing notice either via a registry or universal notice, the four states that have provisions for both registries and universal notice, and the two states that specifically require schools provide universal prior notification.

4 This includes the three states that give the schools the choice of providing notice either via a registry or universal notice, the four states that have provisions for both registries and universal notice, and the 12 states that specifically require schools maintain a registry.

Schools Save Money With Integrated Pest Management

A Beyond Pesticides Fact Sheet

Integrated Pest Management (IPM) is a program of prevention, monitoring and control which offers the opportunity to eliminate or drastically reduce pesticides in schools, and to minimize the toxicity of and exposure to any products which are used. Habitat modification, the cornerstone to any IPM program, is key to eliminating and preventing pest outbreaks.

Because IPM focuses on prevention of the pest problem, and proper monitoring to determine the extent of the pest problem, school IPM programs can decrease the amount of money a school will spend on pest control in the long-term. Chemical-intensive methods, a symptomatic approach to managing pest problems, may only prove to be less expensive in the short-term. The long-term health of our children is not worth some short-term economic savings that just do not add up over time.

According to the U.S. Environmental Protection Agency, "Schools across the nation that have adopted such programs report successful, cost-effective conversion to IPM. IPM can reduce the use of chemicals and provide economical and effective pest suppression … [P]reliminary indications from IPM programs … suggest that long term costs of IPM may be less than a conventional pest control program."[1]

In a report entitled, *Pesticide Use At New York Schools: Reducing the Risk*, the Attorney General of New York State, Eliot Spitzer, says the following:

> We often hear that implementation of integrated pest management...can be expensive. Because it is easy to envision costs associated with establishing new policies and practices, re-training personnel and educating building occupants, this can be a powerful argument to school administrators trying to squeeze the most out of admittedly tight budgets. While the argument might have some initial appeal, experience tells a different story. In case after case, schools and other institutions have reduced their pest control costs early in the transition, often in the first year.[2]

The Washington State Department of Ecology has done a careful analysis of the costs of pest control that considers some of the "hidden" costs, such as regulatory compliance, waste disposal, insurance, and liability for health effects, environmental damage and compliance violations.[3]

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. Whether the pest management services are contracted out, performed internally by school staff, or both may also affect the cost of implementing a school IPM program.

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.

Integrated Pest Management

a) eliminates or mitigates economic and health damage caused by pests;

b) minimizes the use of pesticides and the risk to human health and the environment associated with pesticide applications; and,

c) uses integrated methods, site or pest inspections, pest population monitoring, an evaluation of the need for pest control, and one or more pest control methods, including sanitation, structural repairs, mechanical and living biological controls, other non-chemical methods, and, if nontoxic options are unreasonable and have been exhausted, least toxic pesticides.

Monitoring is critical to reducing pest management costs because it helps pest managers determine if, when and where pest populations warrant action and therefore requires more precise and strategic pest management approaches. For example, instead of spraying the entire school building for a pest, monitoring may determine that the pest problem is concentrated in the food service area, thus decreasing the amount of resources needed to control the pest population. Without monitoring, conventional pest management spray programs tend to spend a lot of time spraying materials into all sites. Monitoring can also help determine if damage thought to be caused solely by pests is actually caused by other factors; like poor drainage or leaky pipes.

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. 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. In addition, certain facets of an IPM program could be implemented over time in order to keep costs down.

Pests can be managed effectively and economically without toxic chemicals through the implementation of a clearly defined IPM program. *For more information about IPM and school pest management, contact Beyond Pesticides.*

Examples of IPM as an Economical Approach to Pest Management

Across the country, schools and communities that are currently using IPM strategies indicate that a well-managed IPM program is saving them money. Following are just a few examples.

- A school board member in Illinois has stated that "most [of the] schools utilizing IPM strategies [in his school district state] that IPM does not cost more, it just costs differently. Thus, a school having a problem with mice might install door sweeps to deny access instead of continuously allocating funds for a pest control professional. Additionally, an IPM program need not be burdensome with regard to personnel. Typically, it will require some light training, and it then integrates seamlessly into existing roles and responsibilities."[4]
- The Boulder Valley School District in Colorado has saved thousands of dollars for pest management after hiring a company that has successfully controlled the schools' pest problems with the implementation of an IPM program that does not use any toxic pesticides.[5]
- Before Monroe County Schools in Bloomington, IN implemented an IPM program in 1995, it was spending about $34,000 on pest management. With the hiring of an IPM Coordinator in 1997, and spending less than $1,000 per year on products, the school district is saving around $13,600 a year in pest management.[6]
- A survey of 21 Pennsylvania school districts found that 81 percent were able to control pest problems using IPM with little or no change in costs.[7]
- At Vista de las Cruces School in Santa Barbara, California, pest management was contracted out with a pest control company for $1,740 per year for routine pesticide applications. After the school switched to an IPM program, their costs were reduced to a total of $270 over two years.[8]
- A school in Susquehanna, New York implemented an IPM program after students were poisoned from a pesticide misapplication. The school engineer states that they have cut costs by more than $1,000 per year "and the turf looks better than ever."[9]
- Mt. Lebanon School District in Pittsburgh, Pennsylvania's IPM program is "manageable and no more expensive than using pesticides." The school district has implemented their IPM program since 2000 "at a relatively low cost with improved playing surfaces."[10]
- A well-known example of school IPM is the Montgomery County, Maryland public schools. The IPM program in Montgomery County covers 200 sites used by over 110,000 students and 12,000 employees. Although German cockroaches are the biggest problem the county faces, they also manage rodents, termites, and stored food pests. The county successfully reduced pesticide use from 5,000 applications in 1985 to none four years later, saving the school district $1,800 per school and $30,000 at the food service warehouse.[11]
- In another county in Maryland, the Anne Arundel School District reduced its pest control budget from $46,000 to $14,000 after its first year of IPM implementation.[12]
- An IPM program at the University of Rochester resulted in a 50 percent reduction in material costs and a substantial reduction in personnel costs.[13]
- The City of Santa Monica, California's IPM program for the city's public buildings and grounds reduced the cost of pest control services by 30 percent.[14]
- Albert Greene, Ph.D., National IPM Coordinator for the U.S. General Services Administration, has implemented IPM in 30 million square feet, approximately 7,000 federal buildings, in the U.S. capital area without spraying toxic insecticides. Dr. Greene states that IPM, "can be pragmatic, economical and effective on a massive scale."[15]

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Taking the Terror Out of Termites

By Becky Crouse

Termites. There's a word that will cure your hiccups. Spasms of fear snake up your spine. Distant gnawing noises are detectable in the depths of your walls. You feel a draft. Is that sawdust on the floor???

Termites. In the U.S., they cause an estimated $5 billion in structural damage per year. There is good reason to be concerned, but no need to panic. There are methods to prevent the little buggers, whether you're building or happily settled in your home. Too late for prevention, you say? Still no need for panic – damage progresses very slowly. You have plenty of time to review your control options, find a friendly pest control company and evict your wood-munching squatters without soaking your home in poisons.

Which is which

The three main types of termites are subterranean, dampwood, and drywood. All are key beneficial insects in the natural environment, recycling dead wood into reusable nutrients, but become pests when they start recycling your home.

Don't invite them over

You wouldn't invite dinner guests and expect them to forgo the main course, but you may teach uninvited guests a lesson by cooking something they despise. Do the same with termites.

Structural fitness

Traditional soil treatments pump 300-500 gallons of pesticides into the ground under and around your home. That's six to ten average-sized bathtubs filled with poison and dumped into your soil. Following is a list of safer alternatives and preventive building methods to avoid creating your own little Superfund site.

Pre-construction

SITE PREPARATION

■ Remove all tree roots and stumps from the building site before starting construction.

■ Remove grade stakes, form boards and wood scraps from soil before filling and backfilling.

■ Do not bury wood in the backfill, under porches, steps or patios.

FOUNDATION

■ Slab-on-ground foundations are most susceptible to termite attack. Termites can enter wood by going over the edge of the slab, through expansion joints, openings around plumbing and cracks in the slab. Monolithic type slab is the best, followed by a supported slab, and then floating types.

■ A poured, reinforced, crack-free concrete foundation hinders the passage of termites. Termites can go through a crack as small as 1/32 inch.

■ Hollow-block or brick foundations should be capped with a minimum of 4 inches of concrete.

■ Make certain there are 12 inches of clean concrete foundation between soil surface and structural wood.

■ Sand grain barriers are effective. When grains are 1.6 to 2.5 mm, they are too heavy for termites to move out of the way, and the spaces separating the grains are too small to fit between. A 4" layer of sand is required under a concrete floor slab. With crawl spaces, there should be a 4-inch layer of sand around the interior of the foundation wall and around any piers. All possible paths between the soil and the wood framing must have a sand barrier.

■ Termimesh™, a finely woven, stainless steel mesh designed as a barrier for under and around foundations, prevents termites from entering a building. *Pest Control* magazine (February 1999) reported that after five years of testing, stainless steel mesh remained 100 percent successful as a barrier to subterranean termites.

■ Steel termite shields prevent termites from entering through the interior cracks of masonry walls or foundation blocks. A good metal shield placed on top of foundation and piers may prevent mud tubes from reaching the wood above them, but will more likely cause termites to build around the shield, making their mud tubes easily detected and destroyed.

VENTILATION

■ Create ventilated spaces between the ground and any wood structure.

■ Cover earthen crawl space floors with a vapor barrier – sheets of polyethylene (available at any home supply store) that cover all exposed areas, keeping moisture and dampness at the ground level instead of infiltrating the crawl space. The plastic is usually covered with sand or fine gravel to protect it from punctures when it is walked upon. It should be sealed around the perimeter to the foundation wall, and at any seams, with long-lasting caulking or mastic.

■ If you vent your crawl space, be sure it has two, if not four, ventilation openings within 10 feet of the corners to provide for cross-ventilation. Vents should be opened in the winter and closed in the summer to prevent moisture problems.

BUILDING

■ Build with termite-resistant materials, such as concrete and steel.

■ Unfinished wood can be protected from termite attack by treatment with boric acid (Bora-Care®, Jecta®). Applied as a water solution by dipping or spraying the wood, it will penetrate deep into the wood, and act as an alternative to the afore mentioned barriers.

■ Do not place basement partitions, posts, or stair stringers until the concrete floor has been poured.

	Dampwood	Drywood	Subterranean
HOMETOWNS	The Pacific coast from Baja, to British Colombia; in parts of Idaho, Montana, western Nevada, and western Oregon; and in the cold, dry, high elevations of the Sierra Nevada, Coast Range, Cascade and Rocky Mountains.	From North Carolina, across the southern border of the U.S., along the California Coast as far north as the San Francisco Bay area, and in Hawaii.	Found throughout the United States.
PERSONAL STATISTICS	**Reproductives:** Can exceed one inch in length, including wings. Cream to dark brown. **Workers:** About 1 inch long. White to cream. **Soldiers** About 1 inch long. Head and jaws make a third of their length. Large, reddish brown to blackish head. Cream colored body.	**Reproductives:** About 1 inch long. Fully developed wings. Usually dark brown. **Workers:** Less than 1 inch long. Wingless.White. **Soldiers:** About 5/16 inch long. Massive brown head. Large mandibles. Light colored bodies.	**Reproductives:** About 3/8 inch long, including wings. Long, light grey, translucent wings. Dark brown to black cylindrical bodies. **Workers:** Up to 1 inch long. White to grey. **Soldiers:** About 1 inch long. Enlarged, cream head. Prominent black mandibles. Greyish white body.
FECAL FACTS	Pellets are about 1 mm (1/25 inch) long. Slightly hexagonal. Expelled in sawdust-like piles from exits in galleries.	Tiny, hard, straw-colored pellets. Six distinct concave surfaces.	No fecal pellets.
HOUSING	Damp, decaying wood.	Dry sites.	Ground dwelling in moist sites.
BAD HABITS	Thrive in wood with high moisture content. Soil-wood contact often leads to infestation. Once established, activities can expand into sound wood and relatively dry wood. Tend to work upwards, from the foundation to the roof rafters.	Live entirely in wood. Begin new colonies in pre-existing openings in wood. Excavate small nesting area or gallery and plug the hole for protection from predators.	Colony is located in the ground. Forage for food in aboveg round wood. Create mud tubes to travel from under-ground tunnels to food sources. Prefer moist wood and cork. Most active and eat the most in summer. Winged reproductives fly off to create new colonies in late spring.

■ No wood should ever extend into or through concrete.

■ Avoid using styrofoam insulation in the soil adjacent to foundation and basement.

SOIL GRADING

■ The finished grade outside the building should slope away from the foundation for good water drainage. In the final grading, allow a minimum of 4-6 inches of clearance between the top of the ground and the bottom edge of the veneer.

Post-construction

■ Fill cracks or voids in concrete or masonry with expanding grout or high-grade caulk, and also caulk around sinks and bathtubs.

■ Install fan-powered kitchen and bathroom vents to control moisture.

■ Eliminate dampness - remove or fix sources of water, such as leaky pipes and plumbing, leaky irrigation systems, and improper guttering and siding, and repair leaky roofs.

■ Replace rotten or damaged wood using naturally insect resistant wood.

■ Cover exposed wood with paint or sealant.

■ Screen windows, doors and vents with 20-grade mesh screen.

■ Ensure good drainage away from the house – point downspouts or gutters away from the structure, into storm sewers or a drainage well.

Cultural practices

■ Eliminate all earth-to-wood contact, including mulch, scrap wood, lumber, fence posts, trellises, shrubbery, tree branches or stumps, and firewood that come in contact with the house.

■ Trim or eliminate shrubbery that blocks airflow through foundation vents.

■ Move any soil or compost piled up next to the house at least 10 feet away from the structure.

■ Keep planter boxes built on the ground at least four inches from the house.

Spy games

Monitoring for termites is absolutely essential to any effective control program. What you are looking for varies with the termite type. However, if every so often you break out your Dick Tracy overcoat, your Inspector Gadget tools and your magnifying glass, you can nip any new infestation in the bud and make repairs to prevent an impending onslaught.

Dampwood

Dampwood termites hide themselves to prevent moisture loss, and are hard to spot. The most obvious sign of termite activity is swarms coming from the home, usually on warm evenings in late summer or fall, especially after rain. (Carpenter ants usually swarm in late spring.)

A thorough visual inspection of your house may reveal an infestation in the works. Look around and under the house for damp or damaged wood with holes or tunnels and wood that sounds hollow or soft when tapped. Use a screwdriver or pick to pry into suspicious areas and open up holes. Keep your eyes open for piles of sawdust and dead insects and any conditions that may be promoting moisture or wood decay.

Drywood

Drywood termites can be difficult to detect, as they live almost entirely inside wood. Look for discarded wings left behind after swarming, fecal pellets, and blistered, hollow-sounding wood.

They are distinguishable from their look-alike ant friends because ants have elbowed antennae, a narrow "waist" and a dark spot on their wings.

Subterranean

Clues in your case against the subterranean termites may include piles or droppings of sawdust, dead or alive termites, swarms (usually in the spring, beginning in mid-March and through May, after a rain has softened the ground), discarded wings, mud tubes or mounds, and wood damage. Your screwdriver or pick may come in handy to detect damaged wood and confirm your suspicions.

Regularly inspected solid wood or corked hollow stakes in your yard can alert you to activity that may require attention.

If you are not sure that you have an active termite infestation, arrange for a thorough professional inspection, including a written report noting the location of damaged areas...

In all cases

Specially trained dogs can sniff and listen for termite infestations, even in hard to reach areas. Also, fiber-optic scopes can provide views or hard to inspect areas, such as behind drywall and paneling.

If you are not sure that you have an active termite infestation, arrange for a thorough professional inspection, including a written report noting the location of damaged areas, a diagram of the structure indicating the location of the damaged areas, a description of where and how many treatments will be made, and an estimated total cost of control and labor. Don't be afraid to ask questions and get a second opinion, but let each firm know that other firms were contacted and the information you already know.

Eviction notice

There they are, slowly eating at your woodwork, quickly eating at you. Now what? You know you have time; they're slow munchers. You know you have options, but you need to figure out which will be best for you. Where do you even begin?

Your decision will depend on your type of termite. Remember, when you hire a pest management company, question their methods of treatment carefully and find out exactly what they intend to use for control. See the Safety Source at www.beyondpesticides.org to find a company in your area. The more educated you are, the more questions you can ask, and the better your chance for choosing an effective, least-toxic option.

Dampwood and Drywood

NON-TOXIC

■ **Removal** of the infested wood or furniture is the quickest and easiest way to handle a localized infestation. Small pieces of wood containing live termites can be soaked in soapy water to kill the insects. Larger pieces can be taken to a landfill or natural area where the decomposing abilities of the termites are helpful.

Drywood

NON-TOXIC

■ **Cold treatment** is a temperature-altering system that utilizes liquid nitrogen to eliminate drywood termites. It is reported to have a 95-99 percent elimination rate and is a good method for inaccessible areas (*Journal Econ. Entomol.*, 89(4): 922-934). Small holes are drilled into the walls and liquid nitrogen is injected into the infested area, lowering the temperature enough to kill the termite colonies. Small items infested with drywood termites can be placed in a freezer or outside for several days during cold weather.

■ **The Electrogun™** is a device that kills drywood termites using a high frequency, high voltage and low amperage electrical current. It should not be used if infestations are widespread, and is not effective next to metal, concrete, or ground because the current is diverted from the termites. It kills approximately 95 percent of the termites when used properly.

■ **Microwaves** are effective as a spot treatment or localized infestations. An unshielded microwave device is used to raise the infested area's temperature to 190°, killing the termites. Your microwave oven will not be effective for small, infested items.

LEAST-TOXIC

■ **Desiccating dusts**, such as diatomaceous earth and silica aerogel can be used during new construction or in existing buildings to prevent drywood termite infestations. Choose a desiccating dust that it is not combined with a pyrethrin. Diatomaceous earth must be garden/food grade, as swimming pool grade is associated with lung disease and ineffective at controlling insects. Desiccating dusts abrade the outer shell of the termites, causing them to dry out and die. They are also inorganic and not subject to decomposition, and should protect wood against termites for the life of the building. Avoid breathing in desiccating dusts, as they can cause lung irritation, and always wear a mask and goggles when applying.

Subterranean

NON-TOXIC

■ **Dig out the colony and break open the mud tubes.** Openings will allow natural predators of the termites, especially ants, to invade the colony and kill them. Ants compete with termites and may kill them and limit their foraging.

LEAST-TOXIC

■ **Baiting Systems** are the newest innovation in subterranean termite control. They control termites in and around a structure using carefully placed bait stations, which contain a toxicant that is brought back to the colony by the foraging termites. Baits greatly limit the amount of a pesticide used as opposed to the traditional liquid termiticide soil barrier method of control, and decrease chances of exposure to the chemical because the baits are well contained. They are, however, still poisons and should be used with utmost care and only as a last resort.

Stations are installed below the ground in the yard, positioned within the structure in the vicinity of active termite mud tubes or feeding sites, or above ground in known areas of termite activity, typically in the direct path of active termite tunnels after the mud tubes have been broken.

Baits consist of cardboard, paper or other acceptable termite food that will compete with the surrounding tree roots, stumps, wood piles and structural wood. The toxicant must be slow acting to enhance the transmission of the poison to other termites, including those not feeding on the bait, and to avoid the build up of dead or sick termites in the vicinity of the bait station, which would cause other termites to avoid the area.

The least-toxic bait station is Termitrol™, containing boric acid. More toxic baits include Firstline™ (sulfluramid), Terminate™ (sulfluramid), Sentricon™ (hexaflumuron), Exterra™ (diflubenzuron), and Subterfuge™ (hydramethylnon).

In all cases

NON-TOXIC

■ The termiticide **Bio-Blast™** contains *Metarhizium anisoplae*, a common soil-borne fungus, as the active ingredient. The spores from the fungus penetrate and begin to grow inside the termite within 4 to 14 days. Bio-Blast™ powder is mixed with water and injected into active termite galleries.

■ **Nematodes**, mixed in a water solution and injected into the wood or soil near termite colonies, seek out the termites and destroy them. They will live up to two years. Applicators have reported effectiveness ranging from 50 to 95 percent.

■ **Heat treatment** consists of covering the structure and raising the temperature above the temperature at which most termites cannot survive. Heat will only be effective for subterranean termites if they are above ground. The process consists of tenting the structure and setting up propane burners that blow hot air through ducts to the infected area inside. When the core of the wood reaches 130° for 35 minutes, most termites are killed. A Berkeley study found that 90-99 percent of termites were killed by heat treatment (*Journal Econ. Entomol.*, 89(4): 922-934).

LEAST-TOXIC

■ **Boric Acid** is an effective, least-toxic termiticide. It acts as an effective bait at concentrations of 0.15 percent, an antifeedant at concentrations greater than 0.25 percent, and kills by direct contact with concentrations greater than 0.5 percent.

Structural lumber used in new house construction and treated with boric acid is termite resistant; older houses may be made more termite resistant with remedial treatment with borate sprays or by injection into wood already in place. Termites in their galleries are killed when they come in contact with injected borates, and then groom themselves, ingesting the poison. Boric acid kills by inhibiting digestive enzymes and causing termites to starve to death.

Bora-Care® and Jecta® are effective products for pre-and post-construction treatments to prevent and control termite infestations; Tim-bor® is an effect post-construction treatment.

Escape clause

In real estate dealings, generally the seller must provide the lender with certification from an exterminator proving the structure is termite free or has been treated for termites. If evidence of termite damage exists, you as the buyer should know if it is a current infestation and if the building has ever been treated for termites. If so, it is wise to have the structure tested to determine possible contamination levels *prior to purchase*. Sales contracts can provide for an escape clause if air testing finds dangerous levels of pesticides in the building.

You must maintain control over the pest management strategy used. Write a clause into the contract/offer to buy stating, "If termites are found in the home, control measures must be agreed upon to the satisfaction to the buyer. If not resolved to the buyer's satisfaction, this contract is cancelled." Insist that the seller find a reliable pest control company that uses non-chemical approaches wherever possible (*see the Safety Source at www.beyondpesticides.org*).

Conclusion

I hope you are breathing a sigh of relief. Termites aren't the end of the world or your home, but keeping them that way requires effort. You have to do everything you can to prevent them, and monitor regularly to ensure that they are not becoming a problem. It can be a lot of work, but keeping your front porch actually attached to your house may just be worth it.

Resources

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Kemple, Megan. 2001. "Dampwood Termite Solutions." Journal of Pesticide Reform 17(1): 22-23. NCAP, Eugene, OR.

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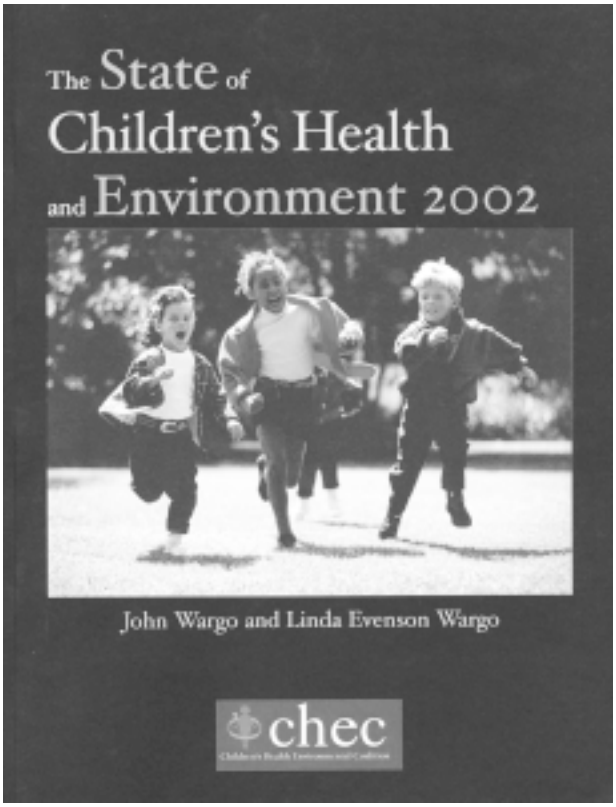

The State of Children's Health and Environment 2002: Common Sense Solutions for Parents and Policymakers

John Wargo, Ph.D. and Linda Evenson Wargo, M.E.S. (Children's Health Environmental Coalition, February 2002). Children now face bigger chemical challenges to their health than ever before. They are constantly exposed to mixtures of chemicals in water, food, air, soil, and consumer products. For example, about 70,000 chemicals are traded internationally, and nearly 500 man-made chemicals are detectable in human tissues, according to the authors. Pesticide residues were recently found in the urine of almost every child examined in studies conducted in Minnesota and Washington. Yet, children's exposure to these chemicals are not monitored or regulated by the government. Moreover, most EPA regulations of chemicals result from the study of single chemicals, but we are often exposed to mixtures of chemicals. Even after health risks are recognized, exposures persist for decades as scientists and lawyers search for stronger evidence and debate about what should be done. Arsenic, lead, and DDT are clear examples of delayed regulation. The authors provide common sense solutions to these problems. They recommend that parents keep all risky substances away from where children live, learn, play, and travel. After reading this report, parents and caregivers will learn to recognize and avoid many environmental hazards. The authors also recommend that governments become more strategic. Specifically, government agencies should focus on "the most potent chemicals, the most concentrated exposures, the chemicals children are most likely to encounter, and mixtures that could combine to produce additive or synergistic effects." Additionally, the government should control chemicals that persist and accumulate in the environment and our bodies. They should also help determine what is hazardous. Trade secrets, confidential business information, and privacy are protected by law and inhibit our understanding of children's health risks. The authors contend that the public has a right-to-know about these hazards, and that this should be the guiding principle for government and corporate policies. *John Wargo is Professor of Risk Analysis and Environmental Policy at Yale University. Linda Evenson Wargo specializes in children's exposure to hazardous substances. A copy of this report is available at www.checnet.org.*

DEET and Permethrin: A Dangerous Combination

"Subchronic Dermal Application of *N,N*-Diethyl *m*-Toluamide (DEET) and Permethrin to Adult Rats, Alone or in Combination, Causes Diffuse Neuronal Cell Death and Cytoskeletal Abnormalities in the Cerebral Cortex and the Hippocampus, and Purkinje Neuron Loss in the Cerebellum." Ali Abdel-Rahman, Ashok K. Shetty, and Mohamed B. Abou-Donia (Experimental Neurology, Volume 172, November 2001). The combined use of a popular repellent and mosquito spray can lead to motor deficits and learning and memory dysfunction, according to researchers at Duke University. This study is timely because DEET, which is an insect repellent, and permethrin, which is a mosquito spray, are now commonly recommended throughout the U.S. to combat mosquito-borne diseases like West Nile virus. In this study, researchers sought to determine the effects of these two chemicals on Persian Gulf War (PGW) veterans because they were used extensively in that war. Many PGW veterans complain of chronic symptoms, including headache, loss of memory, fatigue, muscle and joint pain, and ataxia, which causes an inability to coordinate muscular movements. The authors found that exposure to both DEET and permethrin experienced by service personnel in the PGW has played an important role in causing these illnesses. It is important to note that the animals in this study received the same routes of exposure and doses of DEET and permethrin as the PGW veterans. When used alone, DEET can result in human and animal poisoning including death. Permethrin toxicity can cause tremors, hyperactivity, ataxia, convulsions and paralysis. Other studies conducted by these authors suggest that exposure to DEET and permethrin causes significant sensorimotor deficits and disruption of the blood-brain barrier. This is a groundbreaking study about the synergistic effects of two commonly used chemicals. When registering a product, the EPA does not evaluate the possible synergistic effects that may be caused by chemical interactions. This type of research is sorely needed in the pesticide field. *A copy of this article is available at www.idealibrary.com.*

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

❑ "Pollution Prevention Is the Cure." full color graphic on 100% natural organic cotton Beneficial-T's by Patagonia™ T-shirt. Sizes S-XL. $10 each; 2 for $15.

❑ "Speak to the Earth, and It Shall Teach Thee." In green and blue on 100% natural organic cotton. $10 each; 2 for $15.

❑ "Freedom from Pesticides is Every Body's Right." Black letters with teal, purple and yellow accents, 100% natural organic cotton. Size S only. $10, 2 for $15.

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

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❑ Pesticides in Our Homes and Schools

Testimony

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

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❑ Expelling Pesticides from Schools: Adopting School IPM $20.00

❑ 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

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❑ 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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Salmon Sex-Change?

A 2001 study (*Environmental Health Perspectives*, Vol. 109, No. 1) says that 84% of female wild chinook salmon spawned in the Columbia River were sex-reversed, possibly due to pesticides. Learn about this and other pesticide issues at:

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