

Pesticides and You

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



The Fight for Fair (and Safe) Trade

- The Truth About West Nile Virus • Ecological Pest Management •
- Chromated Copper Arsenate (CCA) Treated Wood • When Mold Attacks •

Letter from Washington

Globalization, Democracy and Chemical Weapons

As our attention is drawn daily to the international stage with events in Iraq, Afghanistan, the Middle East and concerns about terrorism, we are constantly reminded of the effect that global politics has on our lives. We live in a global village. In this context, we hear a lot about democracy and weapons of mass destruction, including chemical weapons. We are reminded of the promise and opportunities that democratic institutions offer to solve problems and address injustices. We support democracy and we oppose the weapons of mass destruction. We believe that our democratic values can be put to work for the protection of people and the environment and against such horrors as chemical weapons. Yes, but. . .

Fighting for Democracy and the Environment

In reading the globalization piece in this issue (see page 13), "The Fight for Fair (and Safe) Trade," (which reprints parts of a report entitled *Civilizing Globalization* by Michelle Swenarchuk of the Canadian Environmental Law Association), you can't get very far without coming to the conclusion that the 140 governments around the world, including the U.S., have signed on to a multilateral trading system, governed by the World Trade Organization (WTO), that thwarts the democratic process. WTO, the main international forum for preventing barriers to international trade, is an un-elected body that is heavily influenced by corporate interests and unwilling to allow public involvement in its decision making process. Democratic, it is not.

As a member of WTO, the U.S. therefore is supporting an institution that runs contrary to the principles of democracy, the same principles we as a nation support and at least rhetorically promote around the world. That means the democratic institutions and policy making bodies that we utilize in the U.S. to develop health and environmental protection are undermined by WTO, as is the health and safety of the public. The British newspaper, The Observer, said it: "*The World Trade Organization [WTO] has plans to replace that outmoded political idea: democracy.*" The former Speaker Pro Tem of the California Assembly and California legislators, faced with a lawsuit for phasing out the gas additive MTBE (methyl tertiary butyl), said:

We find it disconcerting that our democratic decision making regarding this important public health issue is being second-guessed in a distant forum by un-elected officials. . . . Secondly, we as California legislators, find it problematic to be told by remote and un-elected trade officials what paradigms or standards we must apply in writing environmental and public health laws for the people of our state. We further believe that since decisions about the level of risk to which a populace shall be exposed are ultimately a matter of values, such decisions are best made by elected officials in accessible and democratic fora.

WTO policy as currently structured inherently rejects the precautionary principle of avoiding harmful products/processes

when there are scientific uncertainties regarding their risk or cause and effect. And yet, in a world of epidemic cancer rates and skyrocketing asthma rates, to name two, precaution is exactly what should be embraced as a matter of policy.

Chemical Weaponry at Home

That brings us to chemical weapons. We know they have no place in a humane world. We believe that they do not even have a place in war. In 1997, the U.S. Senate ratified a global chemical weapons ban along with 80 other nations. Yet, when you look at what these chemicals are, you find that we are using a form of them to the tune of 5 billion pounds a year here in the U.S. We are using them as pest control weapons, and their low-level ubiquitous levels in the environment are contributing to long-term adverse health effects ranging from neurological disorders to cancer. Most of the chemical weapons in the form of blister agents, nerve agents, choking agents and blood agents either have commercial pesticidal uses or are precursor chemicals to pesticide products. Tabun, an organophosphate like many pesticides, is considered among the easiest of nerve gases to manufacture, even in the non-industrialized world. At press time, it was reported that researchers at the Salk Institute for Biological Studies in La Jolla, California have demonstrated that organophosphate pesticides and related chemical weaponry cause a genetic effect that is linked to neurological disorders. The finding, published in the March 17, 2003 online version of *Nature Genetics*, identifies a gene that scientists had not previously studied in connection with these chemicals and diseases such as attention deficit hyperactivity disorder (ADHD) and the Gulf War syndrome.

The March for Solutions

It is clear that we have some work to do; that we must make our voices heard. We must continue to support our right to incorporate values that respect health and the environment into our laws and protect children and other vulnerable population groups, even at the expense of trade profits. As a part of that process, we must continue with local and state efforts that stop the daily pesticide assault or what amounts to chemical weaponry in our communities for farming, mosquito management or lawn maintenance. We must build up democratic institutions and processes and tear down those that reject democratic principles. This issue of PAY, like others, gives us the tools in engage at the community level in efforts that move us away from pesticide use and exposure and toward safer alternatives.

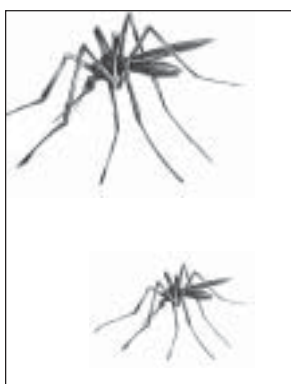


—Jay Feldman is executive director of Beyond Pesticides.

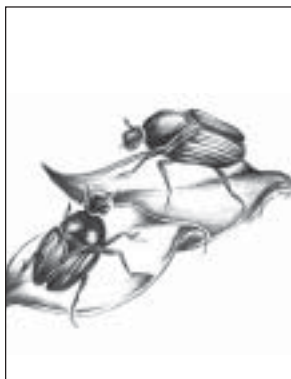
Contents



page 6



page 9



page 11



Printed with soy-based inks on EcoPrint Offset, and cover on Quest™, both 100% post-consumer waste and processed chlorine free.

2 Mail

Questioning Organic Safety; Chemical Sensitivity Continues to Be Ignored; Further Explanation on the USDA Organic Label; Are Schools Living Up to Their IPM Claims?

4 Washington, DC

EPA Publishes Proposed Changes to Weaken the *Endangered Species Act*; Bush Administration Pushing for Exemption from Methyl Bromide Phase Out; Environmentalists Say EPA Cancer Guidelines Must Be Broader To Protect Children; EPA Approves Genetically Engineered Corn for Human Consumption; Georgia Representative's Favor to Hometown Poultry Producer Weakens Organic Standards

6 Around the Country

First National Guidelines Released to Train Health Care Providers to Recognize and Treat Pesticide Poisonings; Pesticides Linked to Panda Deaths at the National Zoo; Is Your Body a Chemical Dumping Ground?; New Biotechnology Fails at Preventing Genetic Pollution; Lobster Die-Off Linked to West Nile Virus Pesticides; Legislation to Ban Toxic Wood Preservatives; School Pesticide Use Violations in Georgia

9 The Truth About West Nile Virus

Bad information and fear lead to dangerous responses

11 Ecological Pest Management

Embracing the organic approach to landscape management
By Stephen J. Restmeyer

13 The Fight for Fair (and Safe) Trade

A critique of international trade agreements' impact on health and the environment
By Michelle Swenarchuk

18 Chromated Copper Arsenate (CCA) Treated Wood

22 When Mold Attacks

Strategies to prevent, detect and control mold in your home
By Meghan Taylor

24 Resources

Organic More Nutritious; Organic Food Safer

Pesticides and You © 2003 (ISSN 0896-7253) is published 4 times a year by Beyond Pesticides. Beyond Pesticides, founded in 1981 as the National Coalition Against the Misuse of Pesticides (NCAMP), is a voice for pesticide safety and alternatives and is a non-profit, tax-exempt membership organization; donations are tax-deductible.

National Headquarters:

701 E Street, SE,
Washington DC 20003
ph: 202-543-5450 fx: 202-543-4791
email: info@beyondpesticides.org
website: www.beyondpesticides.org
Printed on recycled paper with soy ink

Articles in this newsletter may be reproduced without Beyond Pesticides' permission unless otherwise noted. Please credit Beyond Pesticides for reproduced material.

BEYOND PESTICIDES STAFF

Jay Feldman, *Executive Director*
Kagan Owens, *Program Director*
John Kepner, *Program Associate*
Meghan Taylor, *Public Education Associate*
Jessica Lunsford, *Program Associate*
Cortney Piper, *Intern*
Terry Shistar, Ph.D., *Science Consultant*

PESTICIDES AND YOU

Jay Feldman, *Publisher, Editor*
Kagan Owens and John Kepner, *Editors*
Meghan Taylor, *Illustrator*
Free Hand Press, *Typesetting*
Jay Feldman, John Kepner, Jessica Lunsford, Stephen J. Restmeyer, Michelle Swenarchuk, Meghan Taylor, *Contributors*

BEYOND PESTICIDES

BOARD OF DIRECTORS

Ruth Berlin, LCSW-C, Maryland Pesticide Network, Annapolis, MD
Laura Caballero, Lideres Campesinas en California, Greenfield, CA
Alan Cohen, Bio-Logical Pest Management, Washington, DC
Shelley Davis, Farmworker Justice Fund, Washington, DC
Lorna Donaldson-McMahon, Donaldson-McMahon Family Farm, Tiptonville, TN
Jay Feldman, Beyond Pesticides, Washington, DC
Tessa Hill, Kids for Saving Earth Worldwide, Plymouth, MN
Lani Lamming, Ecological Services, Alpine, WY
Nina Powers, Sarasota County Public Works, Sarasota, FL
Paul Repetto, Horizon Organic Dairy Boulder, CO
Terry Shistar, Ph.D., Kansas Chapter, Sierra Club, Lawrence, KS
Gregg Small, Washington Toxics Coalition, Seattle, WA
Allen Spalt, Agricultural Resources Center, Carrboro, NC
Audrey Thier, Albany, NY

Affiliations shown for informational purposes only

Questioning Organic Safety

Dear Beyond Pesticides,
The headline on your *Daily News* story, "Study Finds Organic Food Is Safer for Children," on your website, represents an inappropriate extrapolation of the information from the original scientific article by Curl et al. (2003). The article did not evaluate the safety of organic food consumption in children. Rather, it focused on the differences in pesticide metabolite residues in children who consume primarily organic food vs. children who consume non-organic food. The findings support the rather commonsense hypothesis that children who consume organic food are exposed to fewer pesticide residues in their diet than children who consume non-organic food. The article does not represent a risk comparison between organic food and non-organic food. Indeed, the risks from organic food are not addressed in the study. Although the findings suggest that the mathematical risks from pesticide exposure are lower for children who consume organic food vs. non-organic food, both risks may, in reality, be negligible based on more detailed investigations using the risk assessment paradigm.

I encourage you to be as vigilant about the misuse of information as you seem to be about the misuse of pesticides.

Bob Peterson, Ph.D.,
Montana State University, Bozeman, MT

Dear Dr. Peterson:

Thank you for your note. It is incredibly important to dialogue on these issues so that we can all be better informed about the hazards of pesticides and viability of efforts that are underway to reduce the hazards or risks associated with conventional, chemical-intensive or IPM agriculture. To the extent that organic contributes to hazards and risks, they too should be discussed. We appreciate your pointing out what you feel is a misleading headline or a misuse of information by *Beyond Pesticides*. The headline is derived from the findings of the study cited (see below), which specifically finds that, given various diets and various organophosphate use and subsequent exposure

to their metabolites, children with conventional diets are getting exposures in excess of the RfD (reference dose, or daily exposure below which EPA believes "appreciable" risk is unlikely) set by EPA in some cases. The point is, given the different possible aggregate exposures and the fact that the RfD is exceeded in some cases, while organic comes in consistently well below the EPA level, these particular data point to a diet that can reduce risk and uncertainty, which translates into (relatively) safer. We can choose to ignore this research or downplay it, but the findings seem pretty clear.

"Dose estimation. Very different conclusions regarding risk can be drawn depending on the pesticide to which the dose is attributed. If a more toxic pesticide is chosen, such as oxydemeton-methyl, nearly all of the estimated daily doses are above the U.S. EPA chronic reference dose. Alternatively, if a less toxic pesticide is chosen, such as phosmet or



malathion, none of the daily doses are above the RfD. However, if all exposure is attributed to a relatively toxic and commonly applied pesticide, azinphosmethyl, consumption of organic produce and juice can shift most of the doses from above the RfD to below it. It is unlikely that these doses stemmed from azinphosmethyl exposure alone, but this analysis demonstrates that consumption of organic produce and juice may be able to shift children's exposure from a range of uncertain risk to a range of negligible risk within the context of the U.S. EPA's current risk framework." (Organophosphorus Pesticide Exposure of Urban and Suburban Preschool Children with Organic and Conventional Diets, *Environmental Health Perspectives*, Volume 111, Number 3, March 2003, p 381).—JF

Chemical Sensitivity Continues to Be Ignored

Dear Beyond Pesticides,
When I read in *Pesticides and You* (Vol 18, No. 4, Winter 1998-1999) about the landmark Sally Atkinson case (*Sally Atkinson and the PHRC v. Lincoln Property Management, Inc.*), I was thrilled to learn that multiple chemical sensitivity (MCS) was considered a disability according to the Department of Housing and Urban Development (HUD) and the Pennsylvania Human Relations Commission (PHRC). I thought that I could get an accommodation as well since I have MCS. I asked for a chemical free zone at the property where I rented, Treetops. Ironically, Lincoln Property Management, the same company involved in the Atkinson case, was now managing Treetops. Much to my surprise, the PHRC did not provide me with much support. The assistant to the director of housing, instead of a regular investigator, was assigned to my case. He came out to Treetops to view the grass in late October. He was mainly concerned about the appearance of the grass, and if the sprayed grass next door looked better than the non-sprayed Treetops grass.

Even though I had stellar medical documentation from my immunologist, the PHRC gave little assistance, seemingly more concerned about the grass than my health. While landmark cases like Sally Atkinson's may sound good, they will not be useful until others can benefit from them.

John Sutton
Valley Forge, PA

Dear Mr. Sutton:

We are very sorry to hear about your situation. Thank you for keeping *Beyond Pesticides* updated. It is very important to understand the problems that people with chemical sensitivities face each day. *Beyond Pesticides* is working hard to take toxic pesticides out of stores and homes, and lessen the risks of acquiring and aggravating chemical sensitivity.

Unfortunately, cases like yours often require legal action that relies on the precedent set in the Atkinson case. Beyond Pesticides can provide a listing of resources, organizations, attorneys and doctors that may be able to assist the chemically injured in various situations. Please contact us for a copy.

Further Explanation on the USDA Organic Label

Beyond Pesticides was recently contacted regarding the article "What Does the USDA Organic Seal Mean For You? A National Organic Standards Fact Sheet," which appeared in the Fall 2002 issue of Pesticides and You (volume 22, number 3). The National Organic Standard has many facets, which taken all together may seem overwhelming. One reader questions whether the process of ultra-pasteurization, used on some milk labeled organic, is comparable to irradiation, and if it is, should it still qualify as organic?

Irradiation is not allowed under the National Organic Standard, and is not the same as ultra-pasteurization. Horizon Organic explains ultra-pasteurization as the process of heating the milk at an ultra-high temperature, greater than 280 degrees Fahrenheit, for two to three seconds. This pasteurization process coupled with the aseptic packaging extends the shelf life of the milk and allows it to be stored at room temperature without using preservatives.

To reiterate from the Fall 2002 issue of Pesticides and You, the National Organic Standard provides an established definition of what "organic" means, and provides a labeling system that allows consumers to judge more exactly the organic content of food. Detailed information and history about the organic label can be found on the Beyond Pesticides website or by contacting us.

Are Schools Living Up to Their IPM Claims?

Dear Beyond Pesticides, I receive your bimonthly newsletter, *School Pesticide Monitor*, and appreciate all of the work you do. I am concerned that school integrated pest management

(IPM) programs are not effective since schools are not held accountable. Who knows if they are truly following the guidelines? Our children are still being exposed to pesticides unnecessarily.

As stated in the Beyond Pesticides press release, "Study Finds Over One-Quarter of U.S. School Districts Adopt Plans to Restrict Children's Exposure to Pesticides" from January 6, 2003, the majority of schools in Indiana have committed to this program. As residents in Indiana, my neighbors, friends, and teaching colleagues have never heard of this program. They represent at least one school in the following incorporated areas: Lawrence Twp, IPS, Noblesville, Hamilton Southeastern, Washington Twp., Lebanon, Monrovia, Avon, Decatur Twp., Mt. Vernon, Plainfield. Schools have probably published the IPM information in student handbooks or on their websites, but the parents I spoke with said they do not read that information unless the change is pointed out to them. Too much paperwork is sent home that requires their attention.

A more specific example: a small town school corporation is currently being investigated for possible pesticide misuse under the IPM program. Part of the problem was applying pesticides once a month even if there were no pests seen, along with missing, incomplete and/or illegible invoices from the applicator. During a school day, pesticides were applied to kill fleas in one of the elementary schools. That same day, a little girl began vomiting while she was in school. I am concerned about how many other corporations have committed on paper to IPM guidelines, but, in reality, are not?

Sandra Wampler
McCordsville, IN

Dear Ms. Wampler:
Pesticides in schools, as you know, pose great risks for children, especially since children take

in more pesticides relative to body weight than adults and have developing organ systems that are more vulnerable and less able to detoxify toxic chemicals. Beyond Pesticides' recent report, *Are Schools Making the Grade?*, shows that 59% of 17,000 school districts surveyed nationwide have at least some policies that require safer school pest management practices. (See *PAY*, Vol. 22, No. 3, Fall 2002.) However, Indiana has a completely voluntary program, which leaves children and school staff protection open to wide variability. Since most state policies lack an enforcement mechanism, it takes parents, school staff and community members to make sure they are implemented, which is part of the reason for compiling such a report. It is a lot easier to implement these programs if you can point to a policy that has already been passed. Please work with your school district to see that the policy is implemented. Contact local organizations and activists for support. Beyond Pesticides can help you find the right people to work with; contact us for information.

Letting officials know your concerns about pesticide use helps direct policy and enforcement, and goes a long way in protecting children from harmful pesticides in the school environment.



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:

Beyond Pesticides
701 E Street, SE
Washington, DC 20003
fax: 202-543-4791
email: info@beyondpesticides.org
www.beyondpesticides.org

EPA Publishes Proposed Changes to Weaken the Endangered Species Act

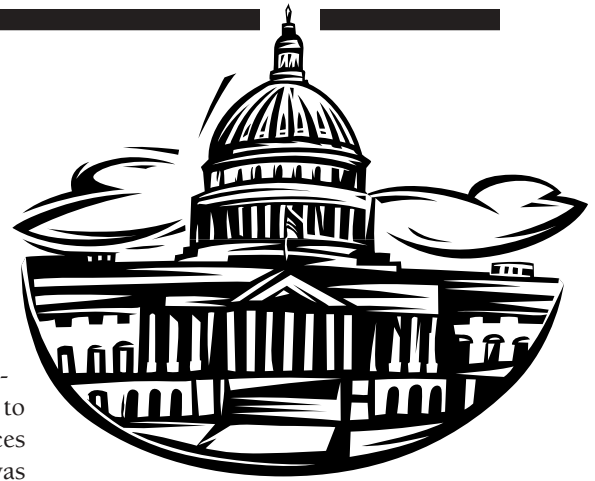
The Bush Administration has recently announced yet another way to undermine the *Endangered Species Act* (ESA), one of the country's landmark pieces of environmental legislation. On January 24, the Environmental Protection Agency (EPA) published proposed language changes to ESA regulations in the Federal Register (68 FR 3785). EPA claims that the proposed language changes are meant to "simplify" the consultation process used to evaluate the effect that an action on pesticides (a registration, new use, new formulation, etc.) has on endangered species. Environmentalists say the move weakens pesticide regulations under ESA and hurts vital environmental policy. The Federal Register notice states that the purpose of the rulemaking is to bring in line the intent of ESA, to protect endangered species under a zero-risk standard, with the intent of the *Federal Insecticide Fungicide Rodenticide Act* (FIFRA), to register pesticides using controversial risk-benefit analyses. It was been widely recognized that the underlying standard of safety in ESA is far more protective than FIFRA. According to Defenders of Wildlife, EPA's proposal will dramatically affect one of the bedrock provisions of ESA that requires all federal agencies to consult with either the U.S. Fish and Wildlife Service or National Marine Fisheries Service (collectively the "Services") to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species. Under the proposal, EPA will unilaterally decide whether use or registration of a pesticide is likely to adversely affect listed species and whether a con-



sultation is required. A second change will require the Services to defer to EPA in evaluating the effects of pesticide on listed species. Therefore, if the Services find an effect of a pesticide on a species and EPA does not, the EPA opinion would overrule that of the Services. Environmentalists say these changes set a dangerous precedent for other agencies to circumvent the authority of the Services to enforce ESA. At press time EPA was considering public comments.

EPA Approves Genetically Engineered Corn for Human Consumption

Next time you sit down to eat some corn, instead of corn kernels you may actually be eating PIPs. That's PIPs, short for EPA's euphemistic "plant-incorporated protectants" or the proteins incorporated into genetically engineered (GE) corn. Without once mentioning the words "genetically engineered" or "genetically modified," EPA announced on February 25 that it had approved the use of YieldGard Rootworm corn to be grown for both human and animal consumption. Similar to corn previously approved only for animal consumption, the new GE corn developed by Monsanto produces its own insecticide derived from *Bacillus thuringiensis* (Bt), a naturally occurring soil bacterium, within the cells of the plant. The Bt protein controls corn rootworm, a highly destructive pest that thrives in the large monoculture fields associated with conventional chemical-intensive agriculture. When applied traditionally as a spray in agriculture, Bt has been proven to be relatively safe and effective. Organic farmers who rely on Bt are concerned that its over-use, which is



inevitable when Bt is genetically engineered into every cell of a plant, will lead to insect resistance and leave many farmers without an important tool in organic agriculture. To limit resistance, EPA will require Monsanto to ensure that 20 percent of the planted acreage be set aside for non-Bt corn to serve as a "refuge." However, leading scientists believe that 50 percent is required to effectively reduce the chance of resistance. The theory goes that these refuge areas will support populations of corn rootworm not exposed to the Bt bacterium. If all goes well, the insect populations in the refuges will help prevent resistance development when they crossbreed with insects in the Bt fields. This resistance management strategy was developed as a condition of Monsanto's registration.

Bush Administration Pushing for Exemption from Methyl Bromide Phase Out

The Bush Administration isn't stopping its anti-environmental bulldozer with the proposed gutting of the *Endangered Species Act* (see previous story). EPA recently announced plans to roll back protections for the earth's ozone layer as well. On January 2, 2003, the agency published in the Federal Register its proposal to allow the continued use of the pesticide methyl bromide despite an earlier agreement to phase out the can-

cer-causing and ozone-depleting pesticide by 2005. In the notice, the Bush Administration requested 54 exemptions from the methyl bromide phaseout required by the Montreal Protocol, the international treaty to protect the ozone layer adopted in 1989. The requested exemptions total 39 percent of the baseline production level, even though the Montreal protocol allows exemptions of no more than 30 percent. Therefore, the U.S. request is a violation of the treaty. Under the Protocol, the U.S. began an orderly phaseout of methyl bromide a decade



ago and production is to end by January 1, 2005, except for "critical uses." Many European nations have already banned the pesticide, and alternative practices and products have been found effective for 90% of methyl bromide uses worldwide. Methyl bromide depletes the ozone layer 50 times faster than now-banned CFCs. It is used primarily on grapes, strawberries and tomatoes, and in grain storage and structural pest control, mostly in California and Florida. It has been found to cause birth defects and brain damage in laboratory animals.

Environmentalists Say EPA Cancer Guidelines Must Be Broader To Protect Children

Two steps forward, one step back. When EPA announced its "Draft Final Guidelines for Carcinogen Risk Assessment," which can change the way the agency determines acceptable pesticide exposure to children, on March 3, the environmental community saw it as a good first step, but believes the agency must go further to adequately protect children's health. The Guidelines, which were originally published in 1986 and revised several times since, set forth principles and procedures to guide EPA scientists in assessing the cancer risks from chemicals or other agents in the environment and to inform the public about these procedures. According to the agency, which says children get 50% of their lifetime cancer risks in the first two years of life, the latest revisions to the Guidelines are intended to make greater use of the increasing scientific understanding of the mechanisms that underlie the carcinogenic process. Environmentalists support the notion that children, being more sensitive to toxic exposure than adults, require a special analytical framework and extra precautionary standards. To the extent that the guidelines recognize this, environmental advocates see this as a step forward. However, EPA is proposing a standard that applies a ten-fold extra margin of safety for children two years and under, while it has been shown that in some cases chemicals may be as much as 65 times more potent to children under the age of two. The guidelines also focus only on mutagenic (damage to DNA) cancer risk, while there are other mechanisms of cancer that must be considered.



Georgia Representative's Favor to Hometown Poultry Producer Weakens Organic Standards

Members of Congress rally to repeal anti-organic rider

On February 13, 2003, Congress passed the \$397 billion Omnibus appropriations bill, a massive combination of 12 spending bills filled with hundreds of special interest riders, including one that exempts the requirement that organic livestock be fed 100% organic feed. The language, which was tacked on to the spending bill by Rep. Nathan Deal (R - GA) as a favor to Georgia poultry producer Fieldale Farms, allows farmers to feed livestock conventional feed if organic feed is more than twice as expensive and still label the meat as organic. Senator Patrick Leahy (D-VT), author of the 1990 *Organic Foods Production Act*, quickly introduced legislation (S. 457) to repeal the anti-organic rider. At last count, over 60 Senators and 46 Representatives had signed on. Rep. Sam Farr (D-CA) is the sponsor in the House (HR. 955). Environmentalists consider the rider a very devious move, considering that no Member of Congress could have read the entire bill, rumored to contain 32 pounds of paper, in the short period of time before a vote was taken. "We strongly oppose this exemption, which would undermine the integrity of the organic meat and egg industry and taint the rest of the organic market, which has been growing at 20% per year," said Kathy Lawrence, Executive Director of the National Campaign for Sustainable Agriculture. Farmers who put in the extra effort to grow organic have been rewarded with a price premium for their products in the marketplace. Organic advocates believe that the rider will serve as a disincentive for growers to produce organic grains for feed. While the current premium for organic grains is three times that of conventional, organic livestock farmers believe that high demand and competition will bring the price down if the system is not corrupted. See www.beyondpesticides.org for detailed information.



First National Guidelines Released to Train Health Care Providers to Recognize and Treat Pesticide Poisonings

According to the American Association of Poison Control Centers, about 90,000 potentially harmful pesticide exposures occur each year, and physicians treat about 20,000 of those exposures. Yet U.S. medical schools provide little to no training on pesticide poisonings. EPA calls pesticide poisoning a “commonly under-diagnosed illness in the U.S.” In an effort to correct this problem and prepare the nation’s primary health care providers to recognize and effectively treat pesticide poisonings, the National Environmental Education and Training Foundation (NEETF) released national pesticide competency and practice skills guidelines for physicians and nurses. The companion documents, *National Pesticide Competency Guidelines for*

Medical & Nursing Education and National Pesticide Practice Skills Guidelines for Medical & Nursing Practice, were developed specifically for everyday, front-line health care professionals as part of the Foundation’s Pesticides Initiative. “Environmental health risks are a leading cause of illness due, in part, to the widespread use of pesticides, yet most physicians today receive minimal training

in environmental health as part of their education and ongoing practice,” said Andrea Lindell, Dean of the College of Nursing, University of Cincinnati and one of two project coordinators for the National Guidelines. “These new tools will be the foundation from which front-line health care professionals will gain the core knowledge and practice skills they need to deal with pesticides-related illness.” Congress chartered NEETF in 1990 to develop and support environmental learning programs to meet social goals, such as improved health, better education, and greener, more profitable business. See www.beyondpesticides.org or contact Beyond Pesticides.



Is Your Body a Chemical Dumping Ground?

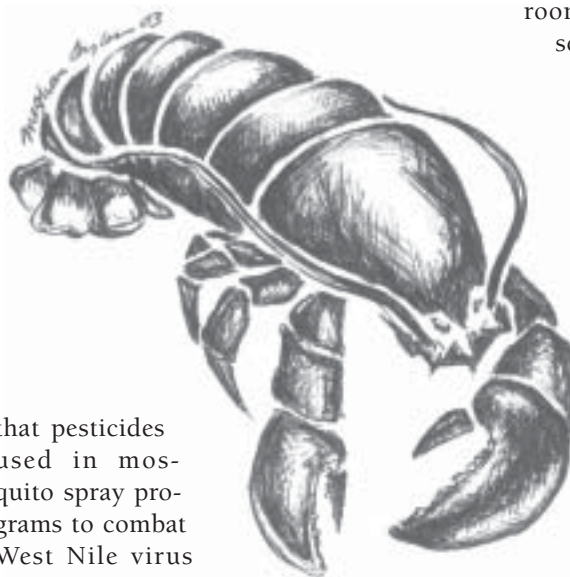
As humans, we’ve come a long way in the last 50,000 years, but the recent addition of pesticides and other chemical pollutants in the last century has left our bodies unable to adequately rid ourselves of these synthetic intruders. Two new reports, one by the Centers for Disease Control and Prevention (CDC) and one by the Mount Sinai School of Medicine, show an average of 90 pesticides and other pollutants in the blood and urine of volunteers sampled in the studies. CDC, which released its second *National Report on Human Exposure to Environmental Chemicals*, finds positive results for 89 chemicals including PCBs, dioxins, phthalates, selected organophosphate pesticides, herbicides, pest repellents and disinfectants in the blood and urine of the 2,500 volunteers tested. “This report is by far the most extensive assessment ever of exposure of the U.S. population to environmental chemicals,” says CDC Director Julie Gerberding, “This kind of exposure information is essential, it helps us to lay the critical groundwork for future research in ensuring that exposures to chemicals in our environment are not at levels that affect our health.” The CDC plans to update the report every two years, expanding the number of chemicals covered. The Mt. Sinai study, *Body Burden: The Pollution In People*, done in collaboration with the Environmental Working Group and Commonweal, finds similar results to the CDC study. Published in the peer-reviewed journal *Public Health Reports*, the study examines nine individuals whose bodies were tested for 210 chemicals. While the sample size of volunteers was much smaller, this is the largest suite of industrial chemicals ever surveyed. The researchers found an average of 91 chemicals in the blood and urine of its volunteers, with a total of 167 chemicals found in the group. Of the 167 chemicals, 76 cause cancer in humans or animals, 94 are toxic to the brain and nervous system, and 79 cause birth defects or abnormal development.

New Biotechnology Fails at Preventing Genetic Pollution

The biotechnology industry has invested a lot of money in genetically engineered (GE) crops, but they've hit a few stumbling blocks on their road to a big return. Aside from butterfly kills, pest resistance and a public that is not willing to serve as guinea pigs for testing the safety of Frankenfoods, one of the greatest problems the biotechnology industry has faced is the issue of genetic pollution, the unintentional spread of genetic material usually through pollen. Recently, scientists thought they had developed a new technology to stop genetic pollution. However, a new study, "Direct measurement of the transfer rate of chloroplast DNA into the nucleus," published in the online edition of the journal *Nature*, documents the failure of the technology. Currently, GE crops contain the modified material in their cell nuclei, where the potential for drift through pollen is a serious dilemma. Scientists thought they could solve the problem by isolating the modified genes in the chloroplast, the self-contained energy center of the cell, where they believed the genes would be forced to stay put. The study, conducted at the University of Adelaide in Australia, shows that genes can still move from a plant cell chloroplast into its pollen grains and therefore into the environment at large. Although the technology fails only 1 in 16,000 times, scientists believe the number is significant, having predicted that the likelihood would have been tens or hundreds of times smaller. Drift of GE material is a huge problem to both organic and conventional farmers. If organic farmers' crops become polluted with genetically engineered pollen, they may lose their organic certification and experience great financial losses. Even conventional farmers have been sued after GE pollen drifted from a neighboring farm contaminated their crops.

Lobster Die-Off Linked to West Nile Virus Pesticides

For decades, science has shown that many pesticides are harmful to aquatic life, but new scientific data released March 7, 2003 shows it is even worse than we thought. According to researchers at the University of Connecticut, it takes far less methoprene, an insect growth regulating insecticide, than previously thought to kill adult lobsters. Connecticut and New York lobstermen say these data provide concrete evidence



that pesticides used in mosquito spray programs to combat West Nile virus caused the massive 1999 lobster die-off in Long Island Sound. "It really doesn't take much to kill lobsters," University of Connecticut pathobiologist Sylvain DeGuise told attendees at the Long Island Sound Health Symposium. Her research team found a mere 33 parts-per-billion of methoprene killed off half the lobsters in a 20-gallon tank. "That's [equivalent] to one drop in a billion, or one person in China," Dr. DeGuise said. Methoprene is an insect growth regulator, which is applied to many home and community pest control problems as a general use, slow-acting insecticide. This chemical has been used to control a number of pests, including mosquitoes. Pathobiologists want to continue

their studies by analyzing the impact of other pesticides such as resmethrin and malathion in both juvenile and adult lobster mortality.

School Pesticide Use Violations in Georgia

On February 20, 2003, the Georgia Department of Agriculture cited the Allatoona Exterminating Company of Cartersville for multiple violations of Georgia's *Structural Pest Control Act* for pesticide applications made in the Cobb and Bartow county school systems. The violation involves more than 120 classroom buildings as well as other school system buildings. "We have discovered numerous violations, including spraying in classrooms while children were present, unregistered employees performing treatments, incomplete records and failure to notify the schools regarding what pesticides were used," said Commissioner of Agriculture Tommy Irvin.

"These are serious and disturbing allegations that need to be addressed." The Georgia Department of Agriculture may revoke the company's license or simply fine the company, according to the *Associated Press* (AP). An anonymous tip to the Department sparked the investigation into the company's practices at the schools. According to the AP, Chris Mason, Allatoona's owner, told a local television station that they have "always taken pride in putting children's safety first" and denies the allegations, stating that the company only uses bait products in schools when the application area is unoccupied by students. This incident in Georgia is not the first time children's health has been put in danger from the use of hazardous school pesticide use, whether from a pesticide



toxic fumes when it combines with ground water, is known to be highly acutely toxic when ingested or inhaled. Symptoms of mild to moderate acute exposure include nausea, abdominal pain, tightness in chest, excitement, restlessness, agitation and chills. Symptoms of more se-

vere exposure include diarrhea, cyanosis, difficulty breathing, pulmonary edema, respiratory failure, tachycardia (rapid pulse) and hypotension (low blood pressure), dizziness and/or death. Zoo employees suffered symptoms consistent with aluminum phosphide poisoning. They were released after treatment at a local hospital. *For more information about the toxicity of aluminum phosphide, please contact Beyond Pesticides or visit www.beyondpesticides.org/pesticides/factsheets/rodenticides.pdf.*

misapplication or one made according to the pesticide label directions. Many schools routinely apply pesticides in classrooms, gyms, playgrounds, cafeterias and offices and most schools do not have pesticide policies. Pest management is unlikely to be a large part of a school's budget, so many administrators do not focus on it and are likely to be uninformed. *For more information about school IPM, school pesticide exposure incidents, and local, state and pending federal laws, see Beyond Pesticides' Children and Schools program page at www.beyondpesticides.org/schools, or contact Kagan Owens, program director at Beyond Pesticides.*

Pesticides Linked to Panda Deaths at the National Zoo

On January 11, 2003, a spokesperson from the National Zoo in Washington, DC announced that two red pandas died after the rat poison aluminum phosphide was buried in their enclosure. Zoo director Lucy Spelman told the press that this was the first time the zoo used the pesticide in an animal exhibit, but the zoo had used it in the past in non-exhibit areas. According to *The Washington Post*, the employee who buried the pellets in the panda enclosure was not a licensed applicator, as required by federal law. Aluminum phosphide, which produces

Legislation to Ban Toxic Wood Preservatives

On February 13, 2003, California State Senator Gloria Romero (D-Los Angeles) introduced legislation to ban the use and production of the three heavy-duty wood preservatives, chromated copper arsenate (CCA), pentachlorophenol (penta), and creosote. The bill, SB 202, represents the first legislative effort to remove these dangerous chemicals from everyday use. The chemicals are used to treat wood for the prevention of rot, mildew, and insect infestation. According to the Environmental Protection Agency (EPA), 801 million pounds of the wood preservatives, considered a low estimate, are used annually, representing nearly one third of all pesticides used in the U.S. each year. The Romeo bill prohibits all use and manufacturing after January 1, 2005 and repeals the current exemption from hazardous waste law that treated wood enjoys. Citing carcinogenicity, mutagenicity, endocrine disrupting potential and fetotoxic effects, as well as the prevalence of these chemicals in national Superfund sites, the legislation points to the manufacture and use of these chemicals as creating enormous and unreasonable environmental and public health hazards. The bill also recognizes the international movement to ban and restrict these chemicals in countries around the world. In December 2002, Beyond Pesticides, the Communication Workers of America, Center for Environmental Health and a poisoned family in Florida, as a part of a campaign to stop these chemical uses, filed a lawsuit in federal district court in Washington, D.C. The lawsuit cites EPA's failure to act to protect the public's health, cites the availability of alternative materials and practices, and asks the court to intervene.

Take Action: *Other states can also consider introducing this model legislation. As background, a model state wood preservatives legislation kit is now posted on the Beyond Pesticides website at www.beyondpesticides.org/wood. It includes a memo on the California legislation, a factsheet on wood preservatives, and a copy of the SB 202. Access is provided to numerous other documents that describe the long history of federal inaction on toxic wood preservatives. Updates of all court documents, as well as a full text of the Romero bill, can also be viewed on the Beyond Pesticides website. For more information, contact Jessica Lunsford, project coordinator at Beyond Pesticides.*

The Truth About West Nile Virus

Bad information and fear lead to dangerous responses

By Jessica Lunsford

Mosquito season is almost upon us and all the experts say that West Nile virus will be back along with those pesky bugs. Last year concerns over this disease stuck fear in the hearts of Americans everywhere and caused a deluge of pesticide applications throughout the country. As of the end of mosquito season 2002 the virus had reached 42 states and the District of Columbia.¹ But what are the real risks from the disease and the chemical response to it? Here are some facts to fend off the fear.

Facts on disease risks of WNV

While the Harvard School of Public Health surveyed Americans in mosquito infested areas and found 33% think that they or a member of their family is very or somewhat likely to get sick from the West Nile virus this coming season,² the true incident numbers, even in heavily affected areas, fall far below this percentage. According to the Centers for Disease Control (CDC), in Mississippi in 2002, one of the hardest hit states, the attack rate was 1.7 per 100,000 people statewide and 8 per 100,000 in the hardest hit county.³ That works out to be only 0.0017% statewide and 0.008% in the highest county that actually tested for the disease. A door-to-door survey conducted in the fall of 1999 in an extremely hard hit area of New York City found that less than 30% of people who tested positive with the disease had reported symptoms, most of which were characterized as mild. Of those surveyed, 10% that did not have the disease reported WNV-like (or flu-like) symptoms. Moreover, a person who has been infected with West Nile virus is likely to have life-long immunity to the disease whether or not they showed symptoms.⁴ The survey also found that over half of those surveyed in high-mosquito areas mistakenly believe that West Nile can be contracted through drinking infected water.⁵



Facts on chemical repellents

On the main CDC West Nile web page, the primary prevention strategy is the use of insect repellents containing the pesticide N,N-diethyl-m-toluamide or DEET. Yet, this pesticide has been found to cause neurological effects in rats and has been associated with the physical symptoms of the

“Gulf War Syndrome,” especially when combined with permethrin,⁶ a CDC recommended mosquito insecticide. According to the CDC Insect Repellent Use and Safety Fact Sheet, DEET is touted as safe and suggests its use in lower concentration for children over the age of two.⁷ This recommendation is given even though in 1998 EPA rejected “child-safety” claims of all DEET products. According to EPA, “child-safety claims must be removed from all end-use prod-

Prevention Over Poison in the West Nile Virus Fight

Ft. Worth, Texas issues a mandate not to spray

Don't mess with Ft. Worth! In a state known for its fierce independence with fiery pride, the City of Ft. Worth has chosen to fight West Nile virus with prevention, not poison. Meanwhile, Dallas and Houston have called out the spray trucks in a massive campaign, one that gives people a false sense of security, according to a Ft. Worth official.

Why Is Fort Worth Not Spraying?

Fort Worth is a medium sized city located in central Texas about 30 miles from Dallas. The Health Authority there has taken what some see as a rather controversial stand on how to best protect its citizens from the threat of this emerging disease. Behind that stand is Brian Rogers D.O., MPH, City of Fort Worth Health Authority. In fact, Fort Worth has not sprayed for mosquitoes since 1991 and continues to prefer prevention over poison.

Referring to Houston's mosquito control program, which extensively utilized sprayed adulticides and has been unable to prevent the many cases of West Nile virus, Rogers expresses his doubts about spraying in a letter to the people of Fort Worth, posted on the Fort Worth Health Authority website:

Spraying sure sounds [like] the city is doing something, but the reality is, unless the spray has direct contact [with mosquitoes] you accomplish little...In my humble opinion, all they will do is give people the false sense of security that the problem has been handled. The only thing

continued on the following page

spraying will accomplish, I am afraid, is cause an onset of symptoms for those with respiratory problems.

The Fort Worth area has a high rate of Asthma Chronic Obstructive Pulmonary Disease (COPD) and other respiratory disorders, and Dr. Rogers believes, “Spraying for mosquitoes would harm more people than it would help.” He adds that,

Spraying a mosquito population that is less than 1% infected with a rare virus that infects humans 1% of the time, does not seem to validate the risks involved with massive spraying. As the City Health Authority of Fort Worth, I am sure that spraying will result in risks to citizens far in excess of 1%. Those with respiratory disease will certainly have to change their lives or risk a flare-up of their disease.

Dr. Rogers uses humor to put in perspective the actual threat the West Nile virus. “An individual has a better chance of winning the lottery or getting struck by lightning than contracting West Nile virus.” For Dr. Rogers and the citizens of Fort Worth, when all of these facts are considered together, it seems the decision not to spray practically made itself.

Beyond Pesticides has many resources to help your community create a safer mosquito control strategy, including our Public Health Mosquito Management Strategy (free on our website www.beyondpesticides.org) and Beyond Pesticides Mosquito Organizing Manual (\$10.00 ppd). For copies, please contact Beyond Pesticides.

uct labels in order to be reregistered. Child-safety claims are misleading and irreconcilable with the intended use and pesticidal ingredients of DEET products.” This restriction includes DEET containing products with labels such as “For Kids” or “Safe for Children.” In addition to the contradiction of EPA removing all “child-safety” claims while CDC touts DEET as safe for children, EPA states that there is evidence that the concentration of DEET within a product does not affect its safety.⁸ This directly contradicts CDC and the American Academy of Pediatrics claims that “a cautious approach is to use products with a low concentration of DEET, 10% or less.”

What is lacking in the CDC’s information arsenal is safety information about the pesticides it promotes. According to the New York State Department of Health, during or after widespread aerial or ground spraying of adulticides, adverse health outcomes might include acute asthma attacks, other respiratory problems, or dermatological problems.⁹

What to do if spraying starts

If it is not possible to influence your local government not to conduct community-wide spraying for adult mosquitoes, there are steps you should take to protect yourself and your family. Find out when spraying in your area will take place. It is imperative to stay indoors, close all doors and windows, turn off air conditioners, bring in pets and children’s toys. When you go back outside, wash all toys, furniture, and animal dishes that may have been sprayed.

The hysteria about WNV must be balanced with the truth about the disease and the various approaches to prevent it. Prevention of West Nile virus is best achieved by eliminating or reducing mosquito breeding areas, staying inside during peak mosquito times, and using botanical-based repellents that do not contain DEET.

For more information about West Nile virus, alternative control methods, and how to organize your community, please contact Beyond Pesticides or our website: www.beyondpesticides.org.

Notes

- ¹ Centers for Disease Control, Vector-Born Infectious Diseases, West Nile Virus Case Information, <http://www.cdc.gov/ncidod/dvbid/westnile/index.htm#case>.
- ² Blendon, R. et al., West Nile Virus Survey, Project on Biological Security and the Public Harvard School of Public Health, November, 2002, <http://www.hsph.harvard.edu/press/releases/press01132003.html>.
- ³ Centers for Disease Control, Morbidity and Mortality Weekly Report, West Nile Virus Activity—United States, August 8—14, 2002, and Mississippi, July 1—August 14, 2002, <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5132a4.htm>.
- ⁴ West Nile Virus Questions and Answers on Serosurvey, New York City Department of Health, March 21, 2000, <http://www.ci.nyc.ny.us/html/doh/html/wnv/wnvqa.html>.
- ⁵ Blendon, R. et al., West Nile Virus Survey, Project on Biological Security and the Public Harvard School of Public Health, November, 2002, <http://www.hsph.harvard.edu/press/releases/press01132003.html>.
- ⁶ Abou-Donia, Mohamed, et al. 2001. “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.” *Experimental Neurology* 172:153-171.
- ⁷ http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm.
- ⁸ EPA R.E.D. Facts: DEET, U.S. Environmental Protection Agency Prevention, Pesticides and Toxic Substances, EPA-738-F-95-010, April 1998.
- ⁹ New York State Department of Health, West Nile Virus Response Plan, APPENDIX B Surveillance of Possible Health Effects from Pesticide Exposure, <http://www.health.state.ny.us/nysdoh/westnile/final/appendixb.htm>, May 2000.



Ecological Pest Management

Embracing the organic approach to landscape management

By Stephen J. Restmeyer

With an increase in public concern over possible adverse health effects of pesticides, more consumers are taking a stand against the use of all pesticides. After all, consumers, farmers and pesticide applicators were told that DDT, chlordane and dieldrin were safe as long as they were used according to the directions. These chemicals have since been banned due to their adverse health effects and their inability to break down in the environment. Unfortunately, they were not banned before they killed millions of birds, some almost to the point of extinction, countless pets, and contaminated soil and water. In fact, DDT is still found in human tissue today. What the last 50 years of chemical use have taught us is that if it is a poison, then we can be poisoned by it.

What scientists have also proven is that the use of non-target sprays that are applied as a blanket application do more harm than good by creating an imbalance in the ecosystem. The term “pesticide induced infestation” refers to the condition created when good bugs are killed. In the absence of beneficial insects, pest insects flourish unchecked, creating an infestation that is often more severe than the original one and a “need” for another spray to control it. Unless, that is, you adopt an Ecological Pest Management (EPM) program.

The good news (what a relief!) is that there are safe and very effective alternatives to poisons for pest control. How-

ever, a more wholistic approach is necessary for a comprehensive EPM program to be successful. The three major components of a well-engineered EPM program are:

① **Proper soil nutrition and pH** is essential for plants to stay healthy. Soil requirements for different types of plants vary largely according to the plant’s origin. Did it originate in the forest? Or a prairie? Or mountain ranges? Designing gardens with ecosystems in mind will help to simplify the process.

Prairie soils are very deep and when preparing a garden for this type of plant the soil should be worked deeply. Add ash or lime to simulate the neutralizing property of ash from annual prairie fires.

Forest soils are shallow. Therefore, when planting trees do not work compost into the deepest part of the planting hole. Lack of sufficient air exchange in the deeper part of the soil will cause excessive organic matter to break down through an anaerobic process, causing stress to root tissue and encouraging pathogenic microorganisms to thrive. Plants like birch and mountain laurel, which evolved in mountainous ecosystems, may require more mineral content.

In almost every situation, adding compost or earthworm castings, colloidal minerals, and soil inoculants will help build a healthy soil structure. In newer homes, or where construction vehicles have damaged soil, deep root feed-

Simply put, healthy soil grows healthy
plants, and healthy plants are
less likely to get sick.

ing with compost tea may restore soil structure. The microbes in the compost improve soil structure and thus improve water absorption and air exchange. Think of how adding yeast to dough makes bread spongy, as opposed to non-leavened bread, which is hard and brittle. This is how microbial inoculants work to develop soil structure. Simply put, healthy soil grows healthy plants, and healthy plants are less likely to get sick.

② By releasing beneficial insects and providing them with breeding habitat,

you will add to the diversity and ecological balance and thus control most pests before they reach infestation levels.

Many beneficial insects are available through garden centers.

The most available are ladybugs, preying mantises, trichogramma for gypsy moth control, lacewings, insect parasitic nematodes, and fly parasites for control of breeding flies in stables and kennels. Some of the less common but still available insects include predatory mites to control mite pests, aphid midge for woolly adelgid control, leaf miner parasites and so many more that there is not enough room here to mention them all. Ask your garden center manager if they can get what you want since many beneficial insects have a short shelf life and must be ordered when needed.

③ Bird nesting sites provided by plantings and by birdhouses properly placed

will keep the birds where you want them when they're hunting for insects to feed their young. Nesting birds will help to keep insect populations down in the early part of the growing season and leave fewer adults to breed later in the season so that the next generation of insect pests will start out with a smaller population. A nesting pair of chickadees will require over 2000 insects per day to feed their family. Nesting boxes also provide daytime shelter for nocturnal mammals such as flying squirrels and bats, voracious mosquito eaters. I have seen

Little Brown Bats claim a Bluebird house while a bat house 50 yards away remained unoccupied. Proper placement is essential. Use common sense when selecting a location. Never place a birdhouse in the sun unless it's a Purple Martin house. Avoid windy locations. Don't overcrowd any area with too many birdhouses. An unoccupied birdhouse may need to be repositioned in the landscape. Also keep in mind that different species nest at different heights so place birdhouses accordingly.



Plant diversity supports a diversity of beneficial insects and birds that will patrol your garden for insect pests all day every day.

Biodiversity is the key.

Plant diversity supports a diversity of beneficial insects and birds that will patrol your garden for insect pests all day every day. Look for a landscape maintenance program that keeps pests in check with only minor annual adjustments and regular monitoring.

EPM brings together the traditions of the past with the innovations of modern science. When we adopt these practices, we cease battling nature and instead strive for balance in the garden, returning to the concept of gardens as peaceful, sacred places where chemical warfare just doesn't fit in.

Stephen J. Restmeyer is owner of Eco-Logical Organic Landscaping and President of Long Island Organic Horticulture Association (LIOHA) in New York. In addition, he is host of Organic Land Care, a video to teach homeowners how they can convert from a chemical to an organic program to maintain their lawn, trees and shrubs. He has worked with breast cancer and environmental groups to educate

the public on non-toxic alternatives. He has also rewritten the lawn care specification for the Suffolk County Water Authority and provided lawn care for ten of their properties. Mr. Restmeyer can be reached at P.O. Box 9, Yapank, NY 11980, (516) 345-6040. His video is available for \$25 ppd. Visit www.ecologicalandscaping.com.

The Fight for Fair (and Safe) Trade

A critique of international trade agreements' impact on health and the environment

By Michelle Swenarchuk

Editor's note: This article is a reprint of portions of a report that has contributed to the globalization debate and public understanding of the underlying issues: Civilizing Globalization: Trade and Environment, Thirteen Years On, by Michelle Swenarchuk, Counsel, Director of International Programmes, Canadian Environmental Law Association, March 7, 2001. The full text of the report can be found at <http://www.cela.ca/international/399global.pdf>.

A headline in the British newspaper, *The Observer*, exclaimed, "The World Trade Organization [WTO] has plans to replace that outmoded political idea: democracy." Democracy is at the root of any discussion of globalization and international trade agreements. It is an abuse of the democratic process for elected governments to relinquish to an un-elected international body like the WTO their sovereign duty to protect health and the environment, over economic trade interests if necessary. To do so is especially repugnant when the decision making process of the WTO is heavily influenced by corporate interests and conducted under a veil of secrecy without public oversight. The public must engage on these issues as the protections and choices we are increasingly winning in our communities risk being threatened by current institutions of globalization. Understanding how and why is our reason for reprinting the globalization piece that follows. —JF



The fundamental goal of the current internal trade regime is to promote deregulated trade in goods, services, and investment through the removal of "barriers" to trade, both tariffs and "non-tariff barriers." Standards and regulation for all sectors of public protection, including environmental ones (regarding pesticides, food and water safety, resource management) are frequently seen as non-tariff barriers to trade. Trade negotiators deliberately established "disciplines" on countries' scope in establishing domestic standards. In both the World Trade Organization¹ (WTO) and the North American Free Trade Agreement² (NAFTA), standard-setting is limited by the provisions of two chapters: Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary Standards (SPS).

Technical barriers to trade (TBT)

The TBT agreement provides an entire scheme for the setting of domestic regulations and standards. It requires that countries' regulations do not have the effect of creating unnecessary obstacles to international trade, although they are permitted in order to meet legitimate objectives including "protection of human health or safety, animal or plant life or health, or the environment." With an emphasis on international harmonization of measures, the TBT chapter requires that domestic regulations be based on science and comply with international standards, where such exist. Further, domestic standardizing bodies, both governmental and non-governmental, are to comply with the TBT and the related Code of Good Practice. (TBT 4) The TBT recognizes the International Organization for Standardization (ISO) as an international standard-setter. This is an international organization of national standardization bodies that has established standards for many goods, facilitating commerce through certifying goods. Its standards are voluntary, and participating countries obtain certification that their products comply with the standards established. The ISO does not monitor or accredit certification bodies.

Sanitary and phytosanitary standards (SPS)

The SPS agreement establishes a comprehensive set of rules to govern countries' domestic setting of measures that concern plant and animal health, such as food safety and pesticide regulations. The chapter also names international bodies, including the Codex Alimentarius, a Rome-based UN agency with heavy corporate involvement, as the international standard-setters. Environmentalists are concerned about the problems inherent in the requirements for risk assessment in these chapters, the power of corporate lobbyists over government regulators, and the limitations of so-called science-based standard-

setting. They also emphasize the loss of potential influence for local public interest groups seeking to improve local and national standards, given the dominance of trade law in domestic discussions, and the removal of standard-setting to remote, international standard-setting bodies, including the International Standardization Organization (ISO) and the Codex Alimentarius Commission. They also note the undermining of environmental and health standards by an increased willingness to rely on corporate “voluntary initiatives” for environmental protection, a trend also discernable internationally in promotion of “Codes of Conduct” for corporations, and the movement of the ISO into public policy areas where it has not previously worked, and for which it is ill equipped.

The need to align domestic standards with international ones raises many problems including the fact that international standards will either be inappropriate to many specific ecosystems or will be drafted in such general terms that they are not applicable in a meaningful, rigorous way on the ground. This is particularly true if they are drafted with trade as the primary interest.

Trade related intellectual property rights (TRIPS)

This chapter of the WTO Agreements is an exception to the general liberalization tenets of the trade regime, since it imposes a positive duty on countries, requiring that a U.S.-style intellectual property law be implemented globally, including strict enforcement mechanisms to ensure compliance. Environmental and health concerns are focused on the patent requirements in the Agreement and their relation to the role of biotechnological products and the costs of patented pharmaceuticals. The current TRIPS Agreement permits countries to exempt animals and plants from patentability, but requires that they provide either patents or another property protection system for plant varieties.

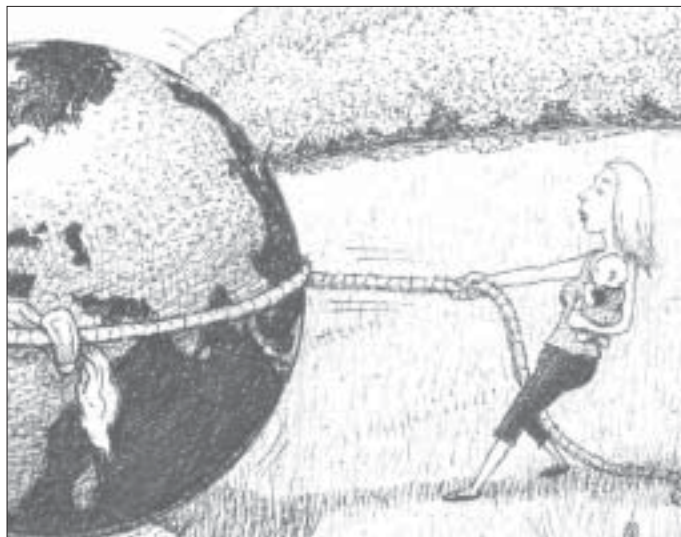
The U.S. is a world leader in allowing patents on living animals and plants, without even the slight possibility of ethical review of these decisions now possible under European law. The expansion of U.S.-style patenting through the WTO Agreement, together with the aggressive marketing of drugs and genetically-modified crops by U.S. corporations, has spawned a global controversy regarding environmental, social, agricultural, and economic impacts. As the base of pharmaceutical giants, the U.S. also actively intervenes to protect its dominance of world drug markets. This is causing growing conflicts regarding the costs of patented drugs as essential medicines remain unattainable in many developing countries.³

WTO cases on environment and health: the necessity test

It is instructive to consider the WTO’s treatment of two areas of public interest standards, those pertaining to environmental protection and health, since an “environmental and health clause” has existed in the General Agreement on Tariffs and Trade (GATT) since 1948 and could have been the basis of reconciling environmental, health, and sovereignty concerns.

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) provides in Article 2.1 that members have the right to take sanitary and phytosanitary measures necessary for the protection of human, animal or plant life or health, provided that such measures are not inconsistent with the provisions of the SPS.

The Agreement on Technical Barriers to Trade provides that technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective, including national security requirements, the prevention of deceptive practices, protection of human health and safety, animal or plant life or health, or the environment. GATT Article XX provides that countries may take measures necessary to protect public morals (XX a), human, animal or plant life or health (XX b), relating to conservation



of exhaustible natural resources (if domestic restrictions are applied) (XX g), but they must be non-discriminatory, and not a disguised restriction on international trade. These tests have been applied in numerous cases, both under the GATT (pre-1994) and the WTO, when “necessity” was raised as a defense or justification by a country whose measure had been challenged. In every case except the 2000 *asbestos* case, the defense of necessity, (however defined) has been rejected.

Of eleven cases, ten held that the challenged measure could not be maintained. It appears to turn on the existence of international standards for asbestos, rather than affirming the right of France and the European Community (E.C.) to legislate for public health. Further, in holding that products containing asbestos are “like products” to alternatives selected because they are less carcinogenic, the Panel has set back moves to clean technologies and set the stage for further challenges against measures to phase out environmentally-damaging products.

This jurisprudence demonstrates that it is virtually impossible for a country to justify a challenged measure as “necessary,” even one that concerns health or the environment, which

Case Studies: The Necessity Test

1996: UNITED STATES. Regulations under the *Clean Air Act* regarding composition of gasoline auto emissions designed to reduce air pollution were found contrary to GATT III by both the Panel and Appellate Body. The Panel found the regulations could not be justified under GATT XX (b), (d) or (g). The Appellate Body held that the regulations fell under XX (g) but did not satisfy the chapeau of the article (the introductory wording) prohibiting “disguised restriction(s) on trade.”

2000: EUROPEAN COMMUNITY. In the only case to uphold a defense based on the necessity test, the Panel found that a French directive banning chrysotile asbestos, challenged by Canada, is justifiable under GATT XX(b) and the chapeau of the article. However, the Panel also found that asbestos products are “like” products to those substitutes that are less carcinogenic. The decision, appealed to the Appellate Body, was upheld.

are “legitimate objectives” in the TBT, SPS and in the “General Exception” (GATT XX). The existence of one panel decision in favor of a challenged measure, a decision disputed by the Canadian government, does not detract from the necessary conclusion that “necessity” tests cannot be a reliable basis of defense for important standards for public protection.

General Agreement on Trade in Services (GATS): negotiations concerning domestic regulations under GATS Article VI(4)

In the negotiations on services (part of the “built-in” agenda at the WTO), governments are developing positions regarding GATS Article VI(4) which requires the development of “disciplines” on countries’ domestic regulations over services. Specifically, the article seeks to prevent “unnecessary barriers to trade” in regulations regarding “qualification requirements and procedures, technical standards and licensing requirements” and to ensure that regulations are “not more burdensome than necessary to ensure the quality of the service.”

The GATS term “not more burdensome than necessary” is so vague and inappropriate, as a criterion of measurement of public protections, that it invites biased decision-making in favor of strictly economic interests. There is no articulated standard for measuring “burdensome.” Does it include measures that add mere inconvenience to potential exporters, or must it entail significant costs or even serious disadvantage?

The concept of regulations being burdensome conflicts with

the increasing relevance of precaution in regulation-making for environment and human health. Application of a precautionary principle or approach involves taking steps to prevent or minimize harm when a risk has become apparent, even though scientific uncertainty exists regarding some elements of the risk and the cause-effect relationships that produce it. Technical standards implemented on a precautionary basis are likely to be particularly vulnerable to a finding that they are unnecessarily burdensome.

NAFTA Chapter 11—investor-state cases

The most notorious source of conflict between environmental laws and trade and investment agreements has resulted from NAFTA Chapter 11, the investment chapter, whose potential effects were not foreseen by environmentalists when NAFTA was implemented in 1994.

The chapter significantly reduces the authority of governments to attach conditions of local benefit to foreign investment. It prohibits governments from imposing “performance requirements”⁴ such as conditions requiring that foreign investors include domestic content and purchasing, that levels of imports and exports and local sales relate to foreign exchange flows, and that investors transfer technology, production processes or other business knowledge to the receiving country.

The chapter also allows investors to sue national governments directly for virtually any action which decreases its expected profits, alleging expropriation or “measures tantamount” to expropriation.⁵ Countries are permitted to take such measures for public purposes, on a non-discriminatory basis, after due process of law, but only if they pay compensation to the foreign investor.

At the time of the negotiations for the Multilateral Agreement on Investment (MAI), only one case had been commenced, the Ethyl Corporation case against Canada, and its existence constituted a potent argument against the similarly-worded MAI.⁶ As Jan Huner, secretary to the chair of the MAI negotiations, later reported:

[A] meeting with NGO’s was called on 27 October 1997. This would prove to be a memorable and decisive event, for a variety of reasons. Memorable, because some 50 NGO participants took part, representing a wide range of interests and a wide range of intensity of opposition to the MAI.

Decisive, because some of the points raised by environmental groups convinced many NG (Negotiating Group) members that a few draft provisions, particularly those on expropriation and on performance requirements, could be interpreted in unexpected ways. The dispute between the Ethyl Corporation of the U.S. and the Canadian Government illustrated that the MAI negotiators should think twice before copying the expropriation provisions of the NAFTA. Ethyl considered that the

Canadian ban on a certain additive for petrol amounted to an expropriation, mainly because it was the only producer of this additive. Canada eventually went for a settlement which reportedly involved the sum of \$13 million. This surprised not a few observers, because Canada was expected to win the dispute. This settlement was invoked by NGOs to demonstrate the need for clarity in the MAI as to what expropriation really

means. Above all, they insisted that the MAI should clearly state that the expropriation clause can never be interpreted to prevent governments from adopting rules and regulations on environmental protection.

There are 12 investment cases, based on arguments that would not give rise to expropriation claims in Canadian domestic law,⁷ six of which concern environmental measures. Since they are conducted in confidential arbitral processes, inaccessible to public scrutiny and participation (in contrast to proceedings in domestic courts which are open), information on ongoing cases is sketchy. However, the available information is summarized in *The Methanex* case at left (*See box*). Information on cases like these remains sketchy since the rules of NAFTA preclude significant disclosure of the proceedings.

Case Study

Environment vs. Trade

Methanex Corporation

In June 1999, this Vancouver-based company announced that it will sue the U.S. government for \$970 million due to a California order to phase out use of the chemical MTBE (methyl tertiary butyl) a methanol-based gas additive by late 2002. The California governor called MTBE “a significant risk to California’s environment” due to concerns that it is polluting water. Other U.S. states, including Maine, were considering phasing it out. Methanex claims its share price and potential revenues have been drastically affected by the controversy, amounting to an expropriation of its future profits due to lower sales, lower product prices and higher costs.

MTBE was introduced in fuel in the mid-1990s to increase the efficiency of fuel burning and decrease pollution, but there were concerns that leaking underground storage tanks would contaminate groundwater. Studies have shown that it is leaking into as many as 10,000 groundwater sites, costing as much as \$1 million per site to clean up. In a letter of January 31, 2001 to U.S. Trade Representative Robert Zoellick, fourteen California Assembly Members and Senators expressed concern regarding the Methanex case, noting that both Houses had passed resolutions in which California legislators of both parties communicated their misgivings about this challenge:

We find it disconcerting that our democratic decision making regarding this important public health issue is being second-guessed in a distant forum by un-elected officials.... Secondly, we as California legislators, find it problematic to be told by remote and un-elected trade officials what paradigms or standards we must apply in writing environmental and public health laws for the people of our state. We further believe that since decisions about the level of risk to which a populace shall be exposed are ultimately a matter of values, such decisions are best made by elected officials in accessible and democratic fora.⁸

Textual analysis and access to negotiations

Both NAFTA and MAI were leaked late in the negotiation process. The “porous” quality of the U.S. government provided many unique sources of trade policy information in the 1990s, and now the number and variety of negotiations occurring globally make “leakage” almost inevitable. Groups around the world now demand release of negotiating texts earlier, as a matter of democratic participation and accountability, to enable citizens’ interventions in individual countries and internationally before governments make key decisions.

Citizens also want a presence at negotiation sessions. The system of negotiations for United Nations conventions offers an alternative approach to international treaty making, which makes the secrecy of trade negotiations appear less and less credible. Typical of the UN approach was the development of the *Cartagena Protocol on Biosafety*, concluded in Montreal in January 2000 under the *Convention on Biological Diversity*. The Protocol is explicitly both a trade and environmental treaty, being concerned with the use and transboundary movements of living genetically-modified organisms. Trade interests played a prominent role in the negotiations. Nevertheless, in keeping with UN processes, the negotiations were conducted in open sessions, which NGOs could attend, full access to negotiating texts in six languages was provided, and NGO representatives could speak in plenary sessions.⁹ No windows were broken, no security costs were incurred, and a treaty was successfully concluded.

Access to dispute settlement processes

NGOs have attempted to intervene in NAFTA investment dispute processes, both at the tribunal and domestic court levels, without success. Similarly, NGOs have filed *amicus* (friend of the court) briefs in WTO dispute panels since the WTO Appellate Body decided in 1998 that dispute panels could consider such submissions, but then limited them to parties (the countries in which the trade dispute is occurring) and

additional countries which demonstrate a substantive trade interest in the dispute.

Restraining the trade regime through new international law

As the impacts of the Uruguay Round (GATT negotiations that originally set up WTO and effected a major expansion of GATT into new issues such as services, “intellectual property rights” and investment issues) of trade negotiations filter down to countries and communities, both some governments and citizens’ organizations recognize a need to restrain their effects on numerous sectors of human values, broadly grouped as issues of environmental protection, human rights, health, and labor policy. Given the near impossibility of amending the WTO agreements, which would require the consensus of 140 countries, initiatives to build other international law multiply together with attempts to achieve primacy over WTO agreements by existing laws.

Regarding the relationship of trade law and human rights law, it has been argued that in the event of a conflict between a universally recognized human right and a commitment ensuing from international treaty law, such as a trade agreement, the latter must be interpreted to be consistent with the former. When properly interpreted and applied, the trade regime recognizes that human rights are fundamental and a priority to free trade itself.¹⁰

In negotiating both the *Cartagena Protocol Biosafety and the Convention on Persistent Organic Pollutants* (POPs) in 2000, officials were faced with positions from leading WTO trading countries that, in the event of disputes under the agreements, WTO primacy would be preserved through wording specifying that the rights and obligations of parties, under any other international agreements to which they were parties, would not be affected by these treaties. In both cases, this extreme position was rejected.

The final *Biosafety Protocol* does not include any trade language in the body of the convention; in the final midnight

hours of negotiation, it was moved into the Preamble. In the POPs Convention, the trade language also appears only in the Preamble: “Mindful of the precautionary approach as set forth in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Convention is to protect human health and the environment from persistent organic pollutants.”¹¹

The *Biosafety Protocol* also includes a possible strategy for protection of domestic decision-making from trade challenges, since the regime it envisages for regulation of genetically-modified organisms is complex, and will permit countries to continue to regulate this trade under current domestic regimes. Both Canada and the E.C. can be expected to do so. If decisions under these regimes are challenged at the WTO (a realistic possibility given continuing disputes between the E.C. and the U.S.), the E.C. may invoke the *Biosafety Protocol* as a “safety blanket” or shield in international law, supporting its decisions vis a vis the WTO. In short, the multiple approaches of the Protocol offer ideas for constraining the WTO’s incursions into national laws, passed in the normal democratic process.

Conclusion

Although discussions of trade and environment issues grind on in the Committee on Trade and Environment at the WTO and at the NAFTA Commission on Environmental Cooperation, these institutions have delivered no concrete solutions to the accelerating global environmental decline. Few citizens now expect to see solutions to these issues in high-level policy discussions mandated by trade organizations. Rather, they have turned instead to strategies of intervention in the fora and venues where there is scope for creativity not constrained by the rigidities and non-democratic values of the trade regime, in particular, through building UN law and institutions. With all their faults, they continue to offer many of the best options for civilizing globalization.

Endnotes

- ¹ The World Trade Organization (WTO) came into being in 1995. With 140 member nations and one of the youngest of the international organizations, the WTO is the successor to the General Agreement on Tariffs and Trade (GATT), established in the wake of the Second World War. Characterized as a multilateral trading system, it was developed through a series of trade negotiations, or rounds, held under GATT. The first rounds dealt mainly with tariff reductions, but later negotiations included other areas such as anti-dumping and non-tariff measures. The last round—the 1986-94 Uruguay Round—led to the WTO’s creation.
- ² The North American Free Trade Agreement (NAFTA) is a trade alliance, adopted by Congress in 1993, between the United States, Canada and Mexico.
- ³ See, for example, the Statement from Medecins Sans Frontieres, Campaign for Access to Essential Medicines at the Health Issues Group Director General Trade, Brussels, June 26, 2000, file://A:\msfdrugprices.htm.
- ⁴ NAFTA 1106.
- ⁵ NAFTA 1110.
- ⁶ Jan Huner, “Trade, Investment and the Environment,” Royal Institute for Internal Affairs, Chatham House, October 27-30, 1998.
- ⁷ Richard Lindgren and Karen Clark, “Property Rights vs. Land Use Regulation: Debunking the Myth of “Expropriation Without Compensation,” Canadian Environmental Law Association, February, 1994.
- ⁸ Letter of January 31, 2001 to Mr. Robert Zoellick, U.S. Trade Representative, from California Speaker Fred Keeley (D) and others.
- ⁹ Tewolde Berhan G. Egziabher, Civil Society and the Cartagena Protocol on Biosafety, prepared for Forum 2000, (Oct.1-3, 2000) Montreal.
- ¹⁰ Robert Howse and Makau Mutua, Protecting Human Rights in a Global Economy: Challenges for the World Trade Organization, International Centre for Human Rights and Democratic Development, Montreal, 2000, p.5.
- ¹¹ Draft Stockholm Convention on Persistent Organic Pollutants, Clause B.

Chromated Copper Arsenate (CCA) Treated Wood

Chromated copper arsenate (CCA) is an inorganic arsenical (composed of arsenic, chromium and copper) that is used as a wood preservative. In February 2002, the U.S. Environmental Protection Agency (EPA) announced a voluntary phase-out by industry of most residential uses of this arsenic-based wood preservative. The agreement states that beginning in January 2004, CCA-treated wood can no longer be manufactured for decks and patios, picnic tables, playground equipment, walkways/boardwalks, landscaping timbers, or fencing. However, already existing residential CCA-treated wood and structures may continue to be sold and used.

In 1988, when EPA decided to cancel most non-wood uses of the inorganic arsenicals, the agency stated its concern about oncogenicity (cancer), mutagenicity (genetic damage), teratogenicity (birth defects) and acute toxicity. EPA noted that its Office of Health and Environmental Assessment (OHEA) had prepared a report reviewing the existing scientific literature, including "Human epidemiology studies ... [which] provided the most persuasive evidence linking exposure to inorganic arsenic to an increase in cancer in humans."¹ When EPA finally canceled the last non-wood use of the inorganic arsenicals in 1993, it determined it would not modify its earlier risk/benefit assessment.

Since then, intensive involvement by advocacy groups has led to investigations, hearings and even lawsuits. In December of 2002, Beyond Pesticides filed suit in the District of Columbia District Court to ban all use and production of three major wood preservatives, including CCA (See *Pushing to End The Horror of Hazardous Wood Preservatives, Pesticides and You*, Winter 2002-2003).² In 2003, the Consumer Product Safety Commission (CPSC) responded to a petition, filed by the Environmental Working Group and the Healthy Buildings Network, to cancel CCA for use on playground equipment. By assessing the results of a series of tests wiping surface residues from CCA treated wood, and the amount of time children spend on playground equipment, the Commission found a 2 to 100 per million increased risk of lung or bladder cancer.³ US Consumer Product Safety Commission, Briefing Package: Petition to Ban Chromated Copper Arsenate (CCA)-Treated Wood in Playground Equipment (Petition HP 01-3), February 2003.

Routes of exposure

One of the most important factors in determining the hazard of a toxic chemical is an evaluation of actual exposure to the chemical. In the case of CCA, chances of exposure are heightened since the chemical's use as a wood preservative is so widespread. Exposure through ingestion and inhalation, and to a lesser extent skin absorption, pose risks to both human health and the environment.⁴

Children face especially high risks from exposure since they take in more pesticides relative to body weight than adults. In addition, children have developing organ systems that are more vulnerable and less able to detoxify toxic chemicals.⁵ The Minnesota Arsenic Study (MARS), conducted by the Minnesota Department of Health (MDH), finds that children accumulate arsenic at a higher rate than adults.⁶ Furthermore, the probability of an effect such as cancer, which requires a period of time to develop after exposure, is enhanced if exposure occurs early in life.⁷ Exposure to CCA is heightened by hand-to-mouth behavior, which is well-documented among children. According to the October, 2001 EPA Scientific Advisory Panel (SAP) recommendation, children have an average of 9.5 hand-to-mouth activities per hour for an average of 1-3 hours of play activity.⁸ This number has the potential to grossly underestimate the true exposure to active children and to high-risk groups predisposed to increased rates of hand-to-mouth behavior, such as children with Down syndrome (DS).

Exposure through direct contact with wood: The arsenic in CCA-treated wood can be dislodged so that direct contact with wood can lead to exposure. The amount dislodged depends on age and use of the wood, according to the Connecticut Agricultural Experiment Station. Wipe tests done on the horizontal surfaces of three municipal play structures found an average of 8.8 µg/100 cm² arsenic dislodged from the wood. This was less than the average from new wood (40 µg/100 cm²).⁹ Tests done on the vertical support beams found higher levels of arsenic compared to the horizontal surfaces and the new samples, showing levels as high as 632 µg/100 cm² and averaging 105 µg/100 cm². A study conducted by the Environmental Working Group examined samples wiped from CCA-treated wood surfaces, collected from an area about size of a four-year old child's hands. In one quarter of the samples, the amount of arsenic wiped off the surface was at least three times the 10-microgram EPA drinking water limit. Some samples showed up to 250 micrograms of arsenic.¹⁰ This arsenic can be ingested into the bodies of children participating in typical hand-to-mouth behavior or eating. Exposure to arsenic can dramatically increase with normal contact to decks, play sets and other wood treated with CCA.

Exposure through contaminated soil: Leaching of CCA from wood into surrounding soil is well-documented. Arsenic and chromium (VI) have been found to leach in substantial quantities from CCA treated wood. Carcinogenic hexavalent chromium (Cr VI) is known to account for up to 50% of the total chromium in CCA. This chromium is known to leach out of CCA treated wood. A 1997 report by Stilwell and Gorny found that soil around CCA-treated wood structures, ranging in age

continued on page 20

Protecting The Public's Health From CCA-Treated Wood

Watch out for that greenish-looking wood. Despite a February 2002 agreement between industry and EPA to phase out manufacturing of chromated copper arsenate (CCA) treated wood by the end of 2003, existing stocks of CCA-treated wood, and structures made with it, can continue to be sold and used until supplies are exhausted. CCA is highly toxic to human health and the environment. The arsenic, which migrates to the wood's surface, and leaches out, contaminating surrounding soil, is a known human carcinogen and has been linked to nervous system damage and birth defects. Chromium VI, also a known carcinogen, can, like arsenic, leach out of the wood, contaminating wood surfaces and surrounding soil. Take precautions to limit exposure to the dangers this wood preservative poses.

Identifying CCA

- Look for a green tint to the wood.
- Look for labels on new wood and wooden structures warning of the presence of arsenic.
- Purchase arsenic testing kits to see if structures and surrounding soil are contaminated. Testing kits are available from Environmental Working Group (www.ewg.org) and The Healthy Building Network (www.healthybuilding.net).
- Contact Beyond Pesticides for further resources concerning assessment.

Limiting Arsenic Exposure

- Do not let children play underneath wooden decks. Also do not store toys or tools that people will touch underneath a deck.
- Always wash hands after handling treated wood.
- Use a tablecloth on a pressure-treated table.
- Seal pressure-treated wood to prevent arsenic from leaching into the environment and contacting people. Water-based latex paint is the safest sealant and should be reapplied every year, depending on local climate.
- Oil-based stains and paints are more durable but also more toxic than water-based.
- Try to avoid paints and sealants that contain volatile organic compounds (VOCs). If you must, choose products with low levels of VOCs.

- Other ingredients to avoid in your sealant include formaldehyde, fungicide, heavy metals, preservatives and mildicide.
- Some least-toxic products to try include Bioshield, Miller Paint, and AFM Safe Coat paints.
- Do not treat CCA wood with acid deck wash or brighteners, or cleaners containing bleach, which will hasten the release of arsenic and chromium VI.
- If you think you are experiencing poisoning due to CCA exposure, see a physician or contact the Poison Control Center.

Safe Disposal of CCA

- Currently there is no standard for safely disposing of CCA-treated wood. While studies have shown that new CCA-treated wood routinely leaches enough arsenic to qualify as hazardous waste, it continues to be disposed of in unlined landfills where arsenic could leach into groundwater.
- Contact appropriate local or state agencies for disposal designations in your area.
- Never burn CCA-treated wood. The release of arsenic into the air is highly toxic.
- Do not buy or use CCA-treated wood as mulch. In shredded form it is more likely to leach into the environment and contaminate your property.

Less Toxic Alternative Materials

- If you can, replace CCA-treated structures with a less toxic alternative.
- Your safest bet is naturally pest and rot resistant wood that has been sustainably harvested, such as cedar or redwood.
- Composite lumber made with recycled plastic provides another option. Make sure the plastic is recycled and does not contain PVCs. Trex Co. (www.trex.com) and AERT Inc (www.choicedek.com) manufacture these products.
- Other alternatives include recycled steel, recycled plastic marine pilings, fiberglass and concrete.

Contact Beyond Pesticides for more information, 701 E Street, SE, Washington, DC 20003, 202-543-5450, info@beyondpesticides.org.

from four months to 15 years, contained an overall average chromium concentration of 43 mg/kg (ppm), compared to 20 mg/kg (ppm) for the control soils. The same study found that the overall average arsenic concentration underneath treated decks was 76 mg/kg, compared to only 3.7 mg/kg for the control samples.¹¹ In addition, a community group in Ithaca, NY found soil samples under a CCA-treated playset with levels of arsenic up to 101 parts per million (ppm), over ten times the New York state clean-up standard of 7.5 ppm.¹² The Connecticut Agricultural Experiment Station reported arsenic levels averaging 76 ppm under CCA treated decks, compared to an average level of 3.7 ppm of arsenic in control soils.¹³

The *Federal Insecticide, Fungicide and Rodenticide Act's* (FIFRA) Scientific Advisory Panel (SAP), in October 2002, used a 25% availability factor for arsenic of consumed soils.¹⁴ This factor does not take into account differing soil types. Testing for additional risks of contaminated soil with differing organic matter and pH levels is inadequate.

Exposure through incomplete fixation: Pressure treated wood frequently fails to be fully dried before leaving production facilities. This can cause the CCA preservative to not fully fix to the wood. Workers have been exposed to massive quantities of arsenic, chromium and copper, causing skin irritation, and increasing risk of chronic health effects.

Exposure through food grown in contaminated soil: Further exposure to CCA can occur by eating food raised in a garden containing CCA-treated wood. Research that examined lettuce in gardens with CCA-treated woodblocks showed the lettuce's arsenic uptake was more than 1.7 parts per million (ppm) of arsenic by dry weight.¹⁵ These levels alone may not cause acute poisoning, but when considered as an additive to other exposures, they are far from negligible.

Exposure through inhalation: Dust on a CCA-treated structure, or from the soil below, may be contaminated and contribute to total exposure to CCA if inhaled. In dry climates, dust is easily kicked up and inhaled. Even wet climates can have significant dust and may have higher contaminated levels in the soil due to past leaching. Most troubling is the possibility of inhaling sawdust or fly ash. Although these risks may not be present in normal use, its occurrence can have acutely toxic effects and dramatically increase any long-term CCA (or its constituents) body burden. Children's increased respiration rates can dramatically exacerbate these exposures.

Acute health effects

Toxic effects of CCA can come from any of the chemical constituents, but most of the focus has been on arsenic. Most acute effects can be seen after inhalation or ingestion of arsenic or arsenic contaminated substrates. Symptoms of acute arsenic toxicity include pain, eye irritation, nausea, vomiting, and diarrhea, characteristic skin lesions, decreased production of red and white blood cells, abnormal heart func-

tion, blood vessel damage, liver and/or kidney damage, and impaired nerve function causing a "pins-and-needles" feeling.¹⁶ In cases of extreme exposure, arsenic is fatal; a lethal dose can be as little as one to 25 mg arsenic per kg of body weight.¹⁷ Symptoms of acute poisoning from chromium (IV) include severe redness and swelling of the skin.¹⁸

Chronic health effects

Chronic effects of arsenic exposure have been seen in many body systems. Although some health effects are exposure specific, most are systemic and can result from any route. Arsenic poisoning damages mucus membranes, and it produces peripheral nervous system disturbances and degeneration and hearing loss.¹⁹ In addition, research links exposure with immune system suppression, leaving victims more vulnerable to other ailments.²⁰ Studies on rats show increased fetal mortality, cleft palate and increased ratio of male to female offspring.²¹

Children face particular risk from exposure to arsenic. A Thailand Health Research Institute study showed an inverse relationship between the levels of arsenic found in children's hair and their height. This relationship was significant for both high and low arsenic accumulations. This study represents defining data on low-level arsenic exposure's effect on the growth of children.²²

Chromium also poses long-term health threats. Studies of chromium (VI) from industrial emissions have found it to be highly toxic due to strong oxidation characteristics and ready membrane permeability.²³ Cr (VI) has been known to cause damage to kidneys and liver. Skin contact with certain chromium (VI) compounds can cause skin ulcers. In addition, birth defects have been observed in animals exposed to chromium (VI).²⁴

Carcinogenic effects

EPA's Carcinogen Assessment Group classified inorganic arsenic as a Group A carcinogen. Arsenic ingestion and inhalation has been reported to increase the risk of cancer, especially in the liver, bladder, kidney and lung.²⁵ The form of chromium (hexavalent) found in CCA has also been found by EPA to be a known human carcinogen. An EPA "Product Matrix" on "Wood Preservatives" states that "inorganic arsenic compounds have been shown to cause cancer in humans."²⁶

Neurological effects

Low dose neurological effects are well-documented with arsenic exposure. Although past studies have concluded that neurological function was not impaired below 1000 ppb, a recent EPA study found that vibrotactile and pin-prick sensitivity were affected at levels as low as 300 ppb in drinking water.²⁷ EPA states, "There is a large body of epidemiology studies and case reports which describe neurotoxicity in humans after both acute and chronic exposures..."²⁸

Ecological effects

In addition to human health effects, the arsenicals found in CCA pose grave ecological threats. Many aquatic organisms are extremely sensitive to arsenic exposure, which can result in serious health effects and even death at relatively low levels. Arsenic bioconcentrates in aquatic organisms - in fresh water organisms up to 17 times background levels, and in marine oysters 350 times background levels.²⁹ Because of bioaccumulation, low levels of arsenic pose devastating threats to larger animals including top predators that eat organisms exposed to arsenic. Studies have shown that quantities of arsenic that can leach from CCA-treated wood are

high enough to bioaccumulate. This is especially true in soils and water with slightly acidic pH.³⁰

The copper in CCA can be toxic to aquatic life as well. The LC50 for aquatic invertebrates and fish ranges from 5 micrograms (μg) per liter to 100,000 $\mu\text{g}/\text{l}$.³¹ Effects on aquatic invertebrates include decreased feeding and egg production and impairment of certain behaviors, such as the ability of clams to burrow.³² In addition, fish growth, spawning and survival are all affected by the presence of copper. Salmon have been known to head back downstream without spawning due to high copper concentration. Gill lesions, kidney damage, and diabetes-like symptoms in a variety of fish species were also observed in association with copper concentrations.³³

Endnotes

- ¹ Environmental Protection Agency, June 30, 1988. Federal Register 24787-89, vol. 53.
- ² *Beyond Pesticides and Communications Workers of America v. EPA*, US District Court for the District of Columbia, December 10, 2002.
- ³ US Consumer Product Safety Commission, Briefing Package: Petition to Ban Chromated Copper Arsenate (CCA)-Treated Wood in Playground Equipment (Petition HP 01-3), February 2003.
- ⁴ ATSDR, 1989. "Arsenic Public Health Statement March 1989." Url: <http://atsdr1.atsdr.cdc.gov:8080/ToxProfiles/phs8802.html>.
- ⁵ US EPA, Office of the Administrator. September 1996. "Environmental Health Threats to Children." EPA 175-F-96-001.
- ⁶ Minnesota Department of Health (MDH), 2001. "The Minnesota Arsenic Study (MARS)" Url: <http://www.health.state.mn.us/divs/eh/hazardous/arsenicstudy.pdf>.
- ⁷ Vasselinovitch, S., et al., 1979. "Neoplastic Response of Mouse Tissues During Perinatal Age Periods and Its Significance in Chemical Carcinogenesis," *Perinatal Carcinogenesis, National Cancer Institute Monograph 51*. AnalyticalChemistry/fsAC001f.htm.
- ⁸ FIFRA Scientific Advisory Panel. 2001. "Final Expo Document October 23-25," http://www.epa.gov/scipoly/sap/2001/october/final_expo_doc_927.pdf, p. 15.
- ⁹ Stilwell, David E., 1998. "Environmental Issues On The Use Of CCA Treated Wood." Department of Analytical Chemistry, The Connecticut Agricultural Experiment Station, <http://www.caes.state.ct.us/FactSheetFiles/AnalyticalChemistry/fsAC001f.htm>.
- ¹⁰ Gray, Sean and Jane Houlihan, August 2002. "All Hands on Deck." Environmental Working Group, <http://www.ewg.org/reports/allhandsondeck/AllHandsOnDeck.pdf>.
- ¹¹ Stillwell, D., and K. Gorny, 1997. "Contamination of soils with copper, chromium, and arsenic under decks built from pressure treated wood." *Bulletin of Environmental Contamination Toxicology*, 58(22-29).
- ¹² Steingraber, S, "Arsenic and Old Spaces." *Pesticides and You*, Winter 2002-03, Reprinted Op-ed.
- ¹³ Stillwell, D., and Gorny, K, 1997. "Contamination of soils with copper, chromium, and arsenic under decks built from pressure treated wood." *Bulletin of Environmental Contamination Toxicology*, 58(22-29).
- ¹⁴ FIFRA Scientific Advisory Panel, 2001. "Final Expo Document October 23-25." http://www.epa.gov/scipoly/sap/2001/october/final_expo_doc_927.pdf, p. 15.
- ¹⁵ Stilwell, David, 1999. "Arsenic in Pressure Treated Wood." Department of Analytical Chemistry, The Connecticut Agricultural Experiment Station.
- ¹⁶ ATSDR, 1989. "Arsenic Public Health Statement, March 1989" Url: <http://atsdr1.atsdr.cdc.gov:8080/ToxProfiles/phs8802.html>.
- ¹⁷ World Health Organization, 1981. "Arsenic, Environmental Health Criteria 18." Geneva, UNEP/ILO/WHO. Cited in: Caroline Cox, 1991. "Chromated Copper Arsenate" *Journal of Pesticide Reform*, 11(1):23-27, Spring 1991, NCAP, Eugene, OR.
- ¹⁸ Agency for Toxic Substances and Disease Registry, U.S. Center for Disease Control, <http://www.atsdr.cdc.gov/tfacts7.html>.
- ¹⁹ World Health Organization, 1981. "Arsenic, Environmental Health Criteria 18" Geneva, UNEP/ILO/WHO. Cited in: Caroline Cox, 1991. "Chromated Copper Arsenate," *Journal of Pesticide Reform*. 11(1):23-27, Spring 1991, NCAP, Eugene, OR.
- ²⁰ National Research Council, Committee on Medical and Biologic Effects of Environmental Pollutants, 1977. "Arsenic." Washington, DC: National Academy of Sciences; World Health Organization, 1981. Arsenic, Environmental Health Criteria 18. Geneva, UNEP/ILO/WHO. Cited in: Cox, 1991.
- ²¹ Environmental Protection Agency. January 1981. "Creosote, Inorganic Arsenicals, Pentachlorophenol." *Position Docket No. 2/3*.
- ²² Siripitayakunlit, Unchalee, Amara Thonghong, Mandhana Pradipasen, 2000, "Growth of Children with Different Arsenic Accumulation, Thailand," University of Denver Poster, financed by the Thailand Health Research Institute, National Health Foundation.
- ²³ Hazardous Substance Data Bank (HSDB), National Library of Medicine Specialized Information Service <http://toxnet.nlm.nih.gov/cgi-bin/sis/search>.
- ²⁴ Agency for Toxic Substances and Disease Registry, U.S. Center for Disease Control, <http://www.atsdr.cdc.gov/tfacts7.html>.
- ²⁵ ATSDR, 1989. "Arsenic Public Health Statement, March 1989."url: <http://atsdr1.atsdr.cdc.gov:8080/ToxProfiles/phs8802.html>.
- ²⁶ Environmental Protection Agency. Copyright, 1996 by Purdue Research Foundation, West Lafayette, Indiana 47907. Url: <http://www.epa.gov/grtlakes/seahome/housewaste/house/woodpre.htm>.
- ²⁷ Mumford, Judy, PhD, Yajuan Xia, Mike Schmitt, Richard Kwok, Zhiyi Liu, Rebecca Calderon, David Otto, "Health Effects from Chronic Exposure to Arsenic via Drinking Water in Inner Mongolia." EPA Human Studies Facility, Research Triangle Park, NC.
- ²⁸ Timothy F McMahon, Ph.D. and Jonathan Chen, Ph.D., Environmental Protection Agency. September 25, 2001. "Hazard Identification and Toxicology Endpoint Selection for Inorganic Arsenic and Inorganic Chromium." FIFRA SAP Background Document. Url: http://www.epa.gov/oscpmont/sap/2001/october/hazard_final_document.pdf.
- ²⁹ ATSDR, 1993. "Toxicological Profile for Arsenic."
- ³⁰ ATSDR, 1993. "Toxicological Profile for Arsenic." April 1993, ATSDR Washington, DC.
- ³¹ Hodson, Peter V., Uwe Borgmann, and Harvey Shear. 1979. "Toxicity of copper to aquatic biota." In Nriagu, Jerome O. (ed.) *Copper in the environment. Part II: Health effects*, pp. 308-372. New York, NY: John Wiley and Sons.
- ³² Ibid.
- ³³ Ibid.

When Mold Attacks

Strategies to prevent, detect and control mold in your home

By Meghan Taylor

The problem of toxic mold burst on to national headlines in recent years with stories of multi-million dollar jury verdicts, insurance claims, adverse health effects, and characterizations of toxic mold as the next asbestos. In June 2002, Representative John Conyers (D-MI) and 17 members of Congress introduced the *United States Toxic Mold Safety and Protection Act*. The bill (H.R. 1268) dubbed “The Melina Bill” after a then-seven-year-old girl whose respiratory ailments were linked to mold exposure, sets up research, guidelines, inspections requirements and protection for losses. Exposure to the mold has been tied to adverse effects including congestion, runny nose, eye irritation, coughing, headaches, fatigue and flu-like symptoms. One of the toxic molds, *Stachybotrys*, has been linked in lawsuits to hemorrhagic lung disease in infants. While experts agree that mold should be controlled in the indoor environment, as with other pest problems, the use of toxic materials to manage mold can cause health problems worse than the mold itself, public health advocates warn.

The Centers for Disease Control (CDC) and other government agencies do not recognize toxic mold as distinct from common mold, citing adverse health effects as rare. According to the CDC website, “The common health concerns from molds include hay fever-like allergic symptoms...[c]ertain individuals with chronic respiratory disease (chronic obstructive pulmonary disorder, asthma) may experience difficulty breathing... [i]ndividuals with immune suppression may be at increased risk for infection from molds.” Acknowledging illness associated with mold exposure and tracing studies over the last decade, Stephen Redd, M.D., Chief, Air Pollution and Respiratory Health Branch, National Center for Environmental Health, CDC, in July 18, 2002 Congressional testimony, says there are no accepted standards for mold sampling and because of their ubiquitous nature they can be found almost anywhere samples are taken. The CDC is continuing to conduct research.

What is toxic mold

If a mold's spores produce chemicals called mycotoxins, the mold is categorized as “toxic.” However, other molds that do not release mycotoxins can still be a health threat, and are much more common in the home. Of the 100,000 types of mold that exist, only a few dozen are categorized as “toxic.” Examples include *Penicillium*, *Aspergillus*, *Stachybotrys*, *Paecilomyces* and *Fusarium*. Toxic molds are found in about two to five percent of American homes.

Molds are categorized as fungi, just like mushrooms, mildews, rusts, and smuts, because they are in a group of plants that do not contain chlorophyll and collect nutrients from organic matter. Today's wallboard in homes can contain a per-

centage of material used as nutrients for fungi, including recycled paper, starch and paraffin. A mature mold generates spores, which are light and float in the air until settling on a surface. Unlike other molds, toxic mold is not the kind found in bathroom sinks and tubs. It actually develops behind wall-paper, in ceiling tiles, carpet backing, gypsum board and wood materials that have become moist or humid (not necessarily saturated) in an environment between approximately 40 and 100 degrees Fahrenheit.

Prevention: reducing moisture

Understanding where mold likes to grow is the first step to prevention. Is the inside of your home susceptible to mold growth? Mold can materialize anywhere there is dampness or relatively high humidity. Air has less ability to hold moisture as the temperature decreases. To measure levels in your home, you can purchase an indoor humidity meter for around \$10 at most hardware stores. If you want to control mold, you *must* control the moisture in your home. Following the steps below will help reduce moisture.

- Keep the home ventilated by venting bathrooms and rooms with dryers to the outside, using exhaust fans when cooking or dishwashing, and using dehumidifiers and air conditioners.
- Run the fan in your air conditioner for 30 minutes after turning it off to dry out the inside of it.
- If you have a forced air heating and air conditioning system, clean filters regularly.
- Increase circulation in the home by keeping doors between rooms open.
- Add insulation to cold surfaces like windows, piping, exterior walls, roofs or floors in order to prevent condensation.
- Grade soil away from the house.
- Fix any leaks.
- Regularly clean and repair roof gutters.
- When building a new home, or replacing any sections, use a non-cellulose, low-nitrogen material to build it. These materials are less likely to trap water and stay damp.

When water invades your home, take steps to keep mold from following. If an area in your home has been water damaged, take immediate steps to clean and begin drying it out within 24 to 48 hours. It might be necessary to remove wallboards and flooring materials to accomplish this process.

Wash off water-damaged surfaces with detergent and water, then dry completely. Use fans, dehumidifiers, and air conditioners to dry. When using a dehumidifier, empty the water collection pan frequently. If you live in a dry climate, open the window to help dry out the material. Drying may take several weeks or months to achieve.

Replace porous materials like rugs, mattresses and draperies. However, if there is only limited and recent damage, a few hours sitting in sunlight might take care of the problem. Any wet insulation should be discarded and replaced.

Detection: how do you know if you have mold?

Telltale signs of mold presence include a musty or earthy smell, or stains on drywall, trim and foundation walls. Also keep an eye out for rust on plumbing underneath sinks, and behind washing machines and refrigerators with icemakers. Mold can be visible on walls, in tubs and other damp areas. It can also occur where you cannot see it, such as behind wallpaper, and inside wall cavities and heating ducts, in ceiling tiles, carpet backing, gypsum board and wood materials that have become moist. If you suspect that mold is hidden, do not investigate yourself! Hiring a professional will avoid an unintended release of a mass amount of mold spores. Some companies use specially trained dogs to pinpoint the source of mold growth that cannot be readily seen.

The story with air samples. If mold is visible, you know you have to address the problem; sampling is not needed. Factors such as heating or air conditioning systems, use of vacuum cleaners, and opening and closing doors and even switching on a light can change mold levels dramatically in one specific area, and can throw off an air sample. Since these tests are often unreliable, do not depend on one or only several tests. Hire a professional industrial hygienist or home inspector experienced in microbial testing. The National Allergy Bureau considers mold counts in air of 0-900 mold spores per cubic meter as low, to 2500 as moderate, to 25,000 as high, and above 25,000 as very high. However, opinions on this vary widely, as do individual sensitivities.

Control: a two step process

Controlling mold involves first cleaning it up, and then preventing it from coming back. Only attempt clean up if you can handle it!

Step One: Cleaning Up Existing Mold

According to the Environmental Protection Agency (EPA), chemical use to kill molds is generally not recommended. Chemicals aside, inhaling mold spores can pose a serious health threat. If you have allergies or experience any reaction when dealing with mold, contact a professional to take care of the problem.

The prep work: Separate your cleanup area from other areas of the house by hanging plastic sheeting to prevent mold

spores from spreading. Gear yourself up with goggles without ventilation holes, gloves that reach mid-arm, long sleeves and pants. A respirator designed for particle removal for protection against inhaling mold spores is also necessary. You can find these respirators at most hardware stores.

The clean up: Scrub mold off surfaces with detergent and water, then dry completely. If the contaminated area is metal, glass or any other non-porous material, these can usually be restored. If you are cleaning a semi-porous item like wood or concrete, use cleaning pads or stiff brushes for the cleaning process. Porous objects like carpets and insulation will most likely have to be discarded. If an object you hold near and dear to you is contaminated, try contacting a professional skilled in restoration work. Keep in mind that an area of mold should be removed even if it is dead. It can still release spores that may cause allergic reactions in some people.

The aftermath: Remove and wash your clothes immediately after you finish cleaning. Rags, brushes and anything else that came in contact with mold should be placed in airtight plastic bags and discarded.

Step Two: Prevent Mold from Returning

With an effective cleanup, you can greatly reduce mold presence. To keep the mold from striking again, it is critical to address the moisture source. When appropriate, replace damaged materials with non-cellulose, low-nitrogen content materials.

Resources

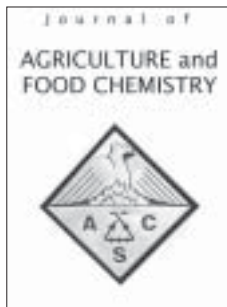
- Bode, Marilyn and Deanna Munson. September 1995. "Controlling Mold Growth in the Home." *Kansas State University's The Near Environment*. Cleveland Live. July 20, 2002. "About Mold." http://www.mold-help.org/submenus/mold_and_the_environment/about_mold.htm.
- CNN. November 5, 1997. "Beware the Mold Stachybotrys." *Health Story Page*. www.cnn.com/HEALTH/9711/05/deadly.mold/.
- Environmental Protection Agency. March 2001. "A Brief Guide to Mold, Moisture, and Your Home." *EPA 402-K-02-003*.
- Friedman, Daniel. January 1997. "Mold Levels: Allergenic or Toxic Mold: How much means a problem?" <http://www.inspect-ny.com/sickhouse/moldlevels.htm>.
- Friedman, Daniel. January 1997. "What You Need to Know About Testing for Mold." <http://www.inspect-ny.com/sickhouse/moldlevels.htm>.
- Healthy Schools Network, Inc. 2002. "Guide to Molds at School." <http://www.healthyschools.org/downloads/molds.pdf>.
- Household Mold Resource Center. 2002. "Mold Tips: Cleanup." <http://www.moldtips.com/cleanup.htm>.
- Jaakkola, Maritta et al. May 2002. "Indoor Dampness and Molds and Development of Adult-Onset Asthma: A Population-Based Incident Case-Control Study." *Environmental Health Perspectives*. 110 (5).
- Redd, M.D., Stephen, Chief, Air Pollution and Respiratory Health Branch, National Center for Environmental Health, Centers for Disease Control, State of the Science on Molds and Human Health, Statement before the Subcommittee on Oversight and Investigations and Housing and Community Opportunity, Committee on Financial Services, U.S. House of Representatives, July 18, 2002.
- Sichelman, Lew. "Toxic Mold Seen As Growing Household Hazard," *Medscape, WebMD*. http://www.imakenews.com/pureaircontrols/e_article00011418.cfm.
- Toxic Mold & Tort News Online. "Toxic Mold Information." http://www.toxic-mold-news.com/toxic_mold/info.html.
- Toxic Mold & Tort News Online. "Prevention." http://www.toxic-mold-news.com/toxic_mold/prevent.html.
- Pinto & Associates. November 10, 2002. "What's All the Talk About Toxic Mold? And Does it Affect You?" *Techletter*, 18 (3): 1. www.mold-help.org, Mold Overview.

Studies Show Benefits of Eating Organic

Science has proven what we've known for a long time: Eating organic food is healthier than eating food grown in a concoction of toxic chemicals. Although the conventional farming industry has done its best to prove the opposite, and the government has always steered clear of endorsing organic agriculture, health-conscious shoppers around the country have always known that buying organic is better for their families, farmworkers and the environment. Two new studies, one out of the University of Washington and one out of University of California-Davis, prove that organic is actually healthier.

Organic More Nutritious

Comparison of the Total Phenolic and Ascorbic Acid Content of Freeze-Dried and Air-Dried Marionberry, Strawberry, and Corn Grown Using Conventional, Organic, and Sustainable Agricultural Practices, Asami, D. K., et al.



(Journal of Agricultural and Food Chemistry February 2003, Vol. 51, No. 5) Researchers at the University of California-Davis have found that organically or sustainably grown berries and corn contain up to 58 percent more polyphenolics (natural antioxidants that may help prevent heart disease and cancer) than their conventional counterparts grown in neighboring plots. The work suggests that insecticides and herbicides may actually reduce the production of polyphenolics by plants. The study also shows that the organically or sustainably grown crops also had more ascorbic acid, which the body converts to vitamin C. The organic foods were grown according to the definition set by the U.S. Department of Agriculture, without artificial pesticides or fertilizers used in conventional farming. Sustainably grown produce was grown with artificial fertilizers, but without pesticides. Polyphenolics are natural chemicals a plant produces in response to pest presence, their bitter taste acting to drive pests away. This new research suggests that when pesticides are used, the plant is not required to make as much of these chemicals. Alyson Mitchell, an assistant professor of food science at the University of California, Davis, who led the study, stated that crops grown without using insecticides

or herbicides might make more polyphenolics because they are more likely to be stressed by insects or other pests. "This may reflect the balance between adequate nutrition in the form of fertilizers and external pest pressures because of the lack of pesticides and herbicides," she said.

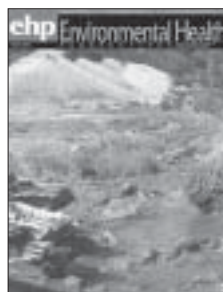
Organic Food Safer

Organophosphorus Pesticide Exposure of Urban and Suburban Preschool Children with Organic and Conventional Diets, Curl, C.L. et al. (Environmental Health Perspectives, March 2003, Vol. 111, No. 3) According to the results of this University of Washington study, children who eat a diet of organic food show a level of pesticides in their body that is six times lower than children who eat a diet of conventionally produced food. To acquire the data, researchers collected 24-hour urine samples from 18 children with organic diets and 21 children with conventional diets and analyzed them for five organophosphate (OP) pesticide metabolites. The children were recruited from the entryways of two grocery stores in the Seattle-metropolitan area: a local consumer cooperative selling a large variety of organic foods and a large retail chain supermarket selling mostly conventional foods. Parents kept food diaries for three days before urine collection, and they distinguished organic and conventional foods based on label information. Children were then classified as having consumed either organic or conventional diets based on analysis of the diary data. Residential pes-

ticide use was also recorded for each home. Significantly higher concentrations of OP (dimethyl alkyl-phosphate) metabolites were found in the children with conventional diets. The researchers found that some of the levels exceed EPA's acceptable threshold exposure for no likelihood of "appreciable" effects, known as the reference dose (RfD).

The researchers chose OP pesticides for analysis because of their widespread use, their reported presence as residues on foods frequently consumed by children, and their acute toxicity. Studies in animals show that even a single, low-level exposure to certain OP pesticides during particular times of early brain development can cause permanent changes in brain chemistry, as well as changes in behavior, such as hyperactivity. This may mean that early childhood exposure to such chemicals can lead to lasting effects on learning, attention, and behavior, just like the environmental neurotoxin lead. The researchers state, "Our finding that children who consume primarily organic produce exhibit lower pesticide metabolite levels in their urine than children who consume conventional produce is consistent with known agricultural practice, because organic foods are grown without pesticides. Consumption of organic produce appears to provide a relatively simple way for parents to reduce their children's exposure to OP pesticides."

For more information or a copy of either of the studies, see www.beyondpesticides.org/organicfood. To maximize reduced pesticide exposure from your food, look for the USDA Organic label that says "100% organic" when you are food shopping.



BEYOND PESTICIDES MEMBERSHIP & SUBSCRIPTIONS

- YES, make me a member of Beyond Pesticides (includes subscription to *Pesticides & You*).**
- \$25 Individual
 \$30 Family
 \$50 Public Interest Organizations
 \$15 Limited Income
- YES, I'd like to subscribe to *Pesticides & You*.**
- \$25 Individual
 \$50 Public Interest Organizations
 \$50 Government
 \$100 Corporate
- YES, I'd like to receive Beyond Pesticides' monthly *Technical Report*. \$20 with membership or subscription.**
- If outside the United States, please add \$10.00 each for memberships and subscriptions.

R E S O U R C E S

T-Shirts

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

Books

- A Failure to Protect*. Landmark study of federal government pesticide use and pest management practices. \$23.00. *Summary and Overview* \$5.00.
- Unnecessary Risks: The Benefit Side of the Risk-Benefit Equation*. Explains how the EPA's Risk-Benefit Analyses falsely assume the need for high-risk pesticides, how "benefits" are inflated, how alternatives might be assessed, and the public's right to ask more from its regulators. \$10.00.
- Safety at Home: A Guide to the Hazards of Lawn and Garden Pesticides and Safer Ways to Manage Pests*. Learn more about: the toxicity of common pesticides; non-toxic lawn care and why current laws offer inadequate protection. \$11.00
- Voices for Pesticide Reform: The Case for Safe Practices and Sound Policy*. A study documenting stories of tragic pesticide poisoning and contamination, and successfully used alternatives that avoid toxic chemicals. \$20.00 *Summary: Voices for Pesticide Reform* \$5.00
- Poison Poles: Their Toxic Trail and the Safer Alternatives*. A study on the largest group of pesticides – wood preservatives, the contamination associated with treated wood utility poles and the available alternatives. \$20.00
- Pole Pollution*. Deals specifically with the wood preservative pentachlorophenol, and the EPA's shocking findings about its toxicity. \$7.00.

Back Issues

- Back issues of *Pesticides and You* \$2.00 each
- Back issues of *Technical Reports* \$1.00 each

Brochures (\$2.00 each; bulk discounts available)

- Least Toxic Control of Lawn Pests
- Agriculture: Soil Erosion, Pesticides, Sustainability
- Estrogenic Pesticides
- Pesticides and Your Fruits and Vegetables
- Pesticides – Warning: These Products May Be Hazardous to Your Health
- Pesticides in Our Homes and Schools

Testimony

- Lawn Care Chemicals, 3/28/90 or 5/9/91, \$4.00
- Federal Insecticide, Fungicide, Rodenticide Act (FIFRA), 4/23/91 or 6/8/93, \$4.00
- Food Safety, 10/19/89, 8/2/93, or 6/7/95, \$4.00
- School Environmental Protection Act (SEPA) 7/18/01, \$4.00
- School IPM, 6/20/91, 3/19/97, or 3/30/99, \$5.00
- New York City's Response to the Encephalitis Outbreak, 10/12/99 \$4.00
- Parents: Right-to-Know-Schools, 3/19/97 \$3.00

Publications

- Building Blocks for School IPM \$15.00
- Expelling Pesticides from Schools: Adopting School IPM \$15.00
- Beyond Pesticides' West Nile Virus Organizing Manual \$15.00
- Beyond Pesticides' ChemWatch Factsheets: individual: \$2.00, compilation: \$20.00
- Getting Pesticides Out of Food and Food Production \$5.00
- Least-Toxic Control of Pests \$6.00
- Community Organizing Toolkit \$12.00
- Model Pesticide Ordinance, Model School Pest Management Policy, Model State School Pesticide Law \$5.00 each
- Building of State Indoor Pesticide Policies* \$4.00
- The Right Way to Vegetation Management* \$4.00

Method of Payment: Check or money order VISA/Mastercard # _____ Expiration Date: _____

Name _____ Phone _____ Fax _____ Email _____

Title (if any) _____ Organization (if any) _____

Street _____ City _____ State _____ Zip _____

Quantity	Item Description (for T-shirts, please note size S,M,L,XL)	Unit Price	Total
1	MEMBERSHIP		

Mail to: Beyond Pesticides, 701 E Street SE, Washington, DC 20003

Tax-Deductible Donation: _____

Total Enclosed: _____

Pick up your new Beyond Pesticides Praying Mantis T-shirt today!

Be sure to pick up the new **Praying Mantis T-shirt**, the latest Beyond Pesticides T-shirt in our “beneficial insect series.” The new T-shirt was designed by our artist Meghan Taylor, and we think it’s our best yet! The Praying Mantis T-shirt is something you’ll want to have because it looks great and you can show your support for Beyond Pesticides. Graphics are printed on an ocean blue vegetable-dyed, 100% organic Patagonia Beneficial T-shirt. **Only \$15 or 2 for \$25!**



Call the Beyond Pesticides office at 202-543-5450 or use the form at www.beyondpesticides.org to order yours today!

*And, if you don't have our other T-shirts, you can pick up the classic Beyond Pesticides T-shirt, **Pollution Prevention is the Cure**, for only \$10 or 2 for \$15!*

Pesticides and You

Beyond Pesticides/
National Coalition Against the Misuse of Pesticides
701 E Street SE, Suite 200
Washington, DC 20003
202-543-5450

**COMPLIMENTARY COPY
Please Subscribe!**

Non-Profit Org.
U.S. Postage
PAID
Silver Spring, MD
Permit No. 1400



Printed with soy-based inks on
Ecoprint Offset, and cover on
Quest™, both 100% post-consumer
waste and processed chlorine free.

Spring 2003 • Vol. 23, No. 1



a member of Earth Share SM