Volume 24, Number 3 Fall 2004

Pesticides and You

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

The Ubiquitous Triclosan

A common antibacterial agent exposed

Montana's War on Weeds

Dow Chemical influences Forest Service shift to its herbicides

• Lessons of the West Nile Virus Response • Alliance for Informed Mosquito Management Platform • Five Steps to Stop the Spraying •

Four More Years

Beyond Pesticides continues its grassroots action agenda

I thought I would be writing a very different letter from Washington after November 2, 2004. I was hopeful, sometimes praying, that our nation would change its course and be led by a federal government that puts the health and safety of its people, young and older, and protection of the environment before the interests of corporate polluters. Nevertheless, our critical efforts to effect local and marketplace change will continue, with an even greater urgency. Beyond Pesticides will continue to cover and engage the Bush administration – which has a track record of failure to protect human life and wildlife from pesticides. We will continue to bring attention to breaking science that has shown, and been ignored by the administration, that our pesticide-dependent practices in agricultural, school and structural pest management are hurting the environment and its inhabitants. We will continue, through these pages, and our *Daily News* webpage, to support readers and members in the regulatory, legislative, and local decision making process.

For the most part, *Pesticides and You* readers and members believe that we as a nation must respond more seriously to the pesticide threat. The use of non-toxic practices and organic products is growing exponentially. The immediate challenge is to effect change around us in our communities, the food production system, and consumer products and services, ensuring safe living environments for our children and families.

Change would certainly be helped by national leadership that: (i) seeks to protect children's health; (ii) decries human testing of pesticides; (iii) believes in the citizen's right to sue corporations that produce and/or use pesticides that cause property and health damage, and rejects preemption of those rights; (iv) exercises full disclosure and right-to-know; (v) advocates for environmental justice and farmworker protection; (vi) meets its statutory duty to regulate endocrine disruptors; (vii) wants to use science, instead of politics, to run the EPA; (viii) supports organic farming and pest management; (ix) shuns closed-door private meetings with the regulated industry; (x) wants to see an end to arsenic or dioxin-laden wood preservatives like chromated copper arsenate (CCA), pentachlorophenol and creosote; (xi) understands the connection between protecting the ozone and limiting methyl bromide use; (xii) stops registering inadequately tested genetically engineered plants; (xiii) joins the world community in ratifying without caveat the Persistent Organic Pollutants (POPs) treaty to phase out deadly chemicals worldwide; and, (xiv) advocates for the precautionary principle which encourages non- and least-toxic approaches in the face of known or unknown hazards. Regardless, grassroots change must and can happen and may even be expedited in our communities and the marketplace in the face of an anti-public health, anti-environmental government.

The media has failed us

Unfortunately, the U.S. media does not feel compelled to rout out the lies and failures of government and polluters. Over the last four years, we have seen a media eager to report the positions of government officials as if their mere utterance established them as truths. When the government said falsely that there were "weapons of mass destruction" in Iraq, the media reported it. Months later both *The Washington Post* and *The New York Times* effectively apologized for their uncritical reporting. In the pesticide arena, the media is similarly negligent. If EPA and the pesticide lobby (producers and users) exclaim the usefulness and safety of a pesticide, the media disseminates it as a truth. If EPA or the pesticide lobby tell people to protect themselves by following pesticide product label directions, then the media reports it without explanation, even if the pesticide is a carcinogen and harmful to children. Environmentalists may be quoted to provide a counterbalance, but the stories are portrayed in the context of "he said, she said," leaving the public confused and uneducated. What if the media said, "EPA today again tried to deceive the public with information that belies the facts. While it claims that children are protected, the facts show otherwise." Would school boards and administrators not feel compelled to act after reading or viewing those stories? Would people understand that their individual actions are absolutely critical to their protection? Would local elected officials and public institutions have a duty to intervene? And so, the vast majority of people remain ignorant on issues that directly affect their health and safety. We hear from many victims after their poisoning, shocked about their misplaced trust in government.

Aggressive grassroots action is key

The *New York Times* reported on November 7, 2004 that "it was aggressive grassroots efforts in new population centers … that Republicans say turned out record numbers." Beyond Pesticides knows that grassroots education and action effects change. We are strategic in our school safety campaign, and change is rolling across the nation. Without top governmental leadership, it is absolutely critical that we are aggressive with our grassroots education and organizing. We know our progress will continue. Just as we created demand for the organic market over 20 years ago, we will stimulate new markets and new opportunities to effect a national shift away from toxic pesticide-dependent pest management.

So, let's get to work. Success is all we have to look forward to! *Hasta la victoria!*

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

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The cover photo shows a sampling of products that contain the antimicrobial agent triclosan. For a more complete list of products see article on page 13.

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Bedbugs Are Biting

Dear Beyond Pesticides,
I'm having a bedbug problem and I'm extremely sensitive to chemicals. Do you have any suggestions for least toxic control?

Cheryl Sale
via email

Dear Cheryl,
Bedbugs are tiny reddish-brown insects, about 1/5 inch, which live in the cracks and crevices in bed frames and adjacent walls, or even in mattress seams. They usually become active at night, while their host is sleeping, in order to feed. Human reactions to bedbug bites can be anywhere from swelling and pain to nothing at all. While bedbugs were not much of a problem in the last several decades, they have recently been making a comeback. The Washington Post *reports that in the past five years, bedbugs have been reported in 27 states. These bedroom busters can easily be transported from one host to another by riding on clothing to buses and trains, movie theaters and other public places where another person could pick them up. They can also be introduced to a home on a used mattress, or can travel between apartments and hotel rooms.*

Some signs of a bedbug infestation include a pungent odor, and blood or fecal spots on your pillow casings and sheets. Search out eggs and adult bedbugs in the cracks and spaces in your bed frame and along the baseboard if you think you might have a bedbug problem.

Investigate the possible cause of the infestation. The bugs could be coming from a nearby bird's nest or bat nesting area. By getting rid of the source, you will help rid the infestation in your home. Be sure to caulk and paint the openings and cracks in your bed frame and surrounding area to close up any hiding places.

There are also more direct strategies to take care of a bedbug problem. If you need to take action right away, a good short-term emergency technique involves setting up a barrier so that the bugs cannot get on your bed. Place the legs of your bed in containers filled with soapy water, and make sure that no part of the bed is touching the wall.

You must thoroughly clean sheets and blankets. Try using an enzyme cleaner or borax for this. Steam clean all the furniture in your home. Infested mattresses and beds should be replaced.

Temperature manipulation provides another control method. Bedbugs can only survive in the range of 48° F and 97° F. By artificially raising the temperature in the infected area to 97° and 99° for several days, a large number of bedbugs will be killed. Lowering the temperature to 32° to 48° will take 30-60 days to kill off all the eggs. If you opt for temperature manipulation, use it in conjunction with the other techniques discussed above so that you can get rid of the entire infestation.

Insecticidal soaps and silica aerogels provide a least-toxic control that you can employ if all else fails.

Poisons in Parks

Dear Beyond Pesticides,
I am concerned that my dog has ingested glyphosate (a commonly used herbicide, which is sold in stores as RoundUp), which was applied in my local park. Are you aware of any antidote I can give my dog? I will ask my vet as well. His primary symptom is significant weight loss.

Kim Clancy
San Francisco, CA

Dear Kim,
If you suspect anyone – pet or person – has ingested a pesticide, consult a medical professional immediately. Pesticides are poisons by their very nature. Ingestion, inhalation and skin contact with such chemicals can all lead to serious acute and long-term health effects, which should be treated as soon as possible. According to J. Routt Reigart, MD, and James R. Roberts, MD, MPH, authors of Recognition and Management of Pesticide Poisonings, *activated charcoal serves as an absorbent for many pesticide poisonings by ingestion, decreasing the amount of chemical absorbed by the body, and is most effective within 60 minutes of ingestion. Again, check with a doctor or a veterinarian for specific information in an emergency situation.*

Beyond Pesticides encourages victims of pesticide poisoning, including pet owners, to register their exposure with us by filling out a Pesticide Incident Record. This is a form on which you can document a pesticide poisoning. The information on these forms serve as the basis for pesticide reform. These stories provide evidence to our lawmakers, communities and media, and stress the dire need to improve public health. You can find a Pesticide Incident Record to fill out at http://www.beyondpesticides.org/emergencies/PIR_form.pdf, or by calling (202)543-5450.

Glyphosate, the chemical your dog was exposed to, has been linked with decreased weight gain in long-term animal studies. The weight loss your dog is experiencing, therefore, may be a result of repeated exposure over a longer period. This exposure is possible if you take your dog to a park that is continually treated with the chemical. If your town does not require posting and/or notification of community pesticide spraying, it is entirely possible that you are unknowingly and continuously exposing your dog and yourself to hazardous chemicals.

The first step to cutting back on pesticide exposure is to reduce use of these chemicals in your own home, yard, and community. Use of herbicides such as glyphosate is unnecessary. A healthy lawn that is weed resistant is possible through soil aeration, proper mowing, and using pest-resistant grass species. Least-toxic weed management strategies, such as use of herbicidal soaps and vinegar, are effective and safer than hazardous synthetic chemicals

like glyphosate. Contact Beyond Pesticides for more information on creating a healthy, pesticide-free lawn, or see www.beyondpesticides.org/lawn.

Unfortunately, it can be quite difficult to exercise such control over public parks and green spaces. It is unfair that community spaces are doused with chemicals, despite the fact that alternatives exist. You can help by educating your fellow community members on the hazards of chemical use, how pesticides affect their health and the health of their families and pets, and the effectiveness of safer practices and products. Together, use tools such as petitions, letter writing campaigns, newspaper editorials, and flyers to advocate for alternatives to pesticides in your community. You can cite the successful pesticide-free parks in Seattle, WA, and Lawrence KS, and Wichita, KS, to name just a few.

We have resources, tools and information to help you start creating safer parks in your community. One way to take action is to start a local Beyond Pesticides. To get started, check out Calling All Activists: How to start and run a local Beyond Pesticides organization *at www.beyondpesticides.org, or call (202) 543-5450 for a copy.*

My Town Is Spraying for Mosquitoes!

Dear Beyond Pesticides,
I came across your website while researching on the internet. I am trying to find help for myself and my family in regards to our city spraying the chemical malathion for mosquitoes in our neighborhood once a week. My husband and I have talked to several of the city officials here but they seem uneducated about the dangers of malathion. The public works director told me that they wouldn't sell it if it were harmful to humans. Supposedly our property was not going to be sprayed anymore per our request, but Wednesday evening I watched from my front window as the truck drove by and sprayed right past our property. They start spraying at 6:00 in the evening, which shocked me when you consider all the children that are outside playing during the long summer evening. I have three small children and my husband and I are concerned for their safety. I feel that being exposed to that chemical on a weekly basis is harmful to their small bodies.

Michelle Woodrum
Bainbridge, GA

Dear Michelle,
As your intuition tells you, children are even more susceptible than adults to poisoning from pesticide exposure. Their developing organ systems make them more sensitive to toxic exposure. The body of evidence in the scientific literature shows that pesticide exposure can adversely affect a child's neurological, respiratory, immune, and endocrine system, even at low levels. Several pesticides, including organophosphates (the chemical class of malathion), are also known to cause or exacerbate asthma symptoms. Acute health effects of malathion poisoning include numbness, tingling sensations, headache, dizziness, tremor, nausea, abdominal cramps, sweating, incoordination, blurred vision, difficulty breathing or respiratory depression, and slow heartbeat. It has also been linked with cancer and nervous system effects.

Considering the toxicity of malathion, it is inexcusable that your property was sprayed, especially since you were told it would not be. File a complaint with your state and town pesticide regulatory agency and health agency.

Team up with your friends and neighbors to advocate for safer mosquito control. You can work toward a mosquito management response plan that includes public education on decreasing mosquito breeding grounds at home and in the community, along with larviciding. If pesticides are being sprayed, demand notification, access to information on the pesticide, and an effective "opt out" policy. For more details, see Beyond Pesticides' Public Health Mosquito Management Strategy for Decision Makers and Communities, available at www.beyondpesticides.org/mosquito/reportsandpublications/.

Other mosquito management resources to help you create change in your community are available at www.beyondpesticides.org/mosquito, including model policies, effective alternatives, and sample letters to newspapers and to policy makers. In addition, Beyond Pesticides has formed a national coalition called the Alliance for Informed Mosquito Management (AIMM) to help individuals stop adulticiding (pesticide spraying for adult mosquitoes) in their communities. Contact Shawnee Hoover at shoover@beyondpesticides.org for more information on joining the coalition. If you do not have internet access, feel free to call Beyond Pesticides for any resources or information at (202) 543-5450.

Write Us!

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

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Compensation for Pesticide Damages Could Be on the Horizon

People who have suffered damage due to pesticide use, even when the product was used according to the label instructions, have often found it hard to receive compensation, whether the damage was to their home, yard or crops. This is because pesticide manufacturers try to hide behind the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA), arguing that the weak standards of the law preempt a citizen's right to sue for damages. When EPA registers pesticides, manufacturers argue they are not liable for damages. Now, the U.S. Supreme Court is set to hear a case to determine whether this is actually legal. The high court will review a U.S. appellate court decision in *Bates v. Dow AgroSciences*, LLC, in which the lower court ruled that Texas peanut farmers, who show evidence that a Dow AgroSciences herbicide ruined their crops, were prevented from suing after Dow lawyers argued FIFRA preemption. The case originated in 2000 when the farmers informed Dow that applications of the herbicide Strongarm, which contains the active ingredient diclosulam, stunted the growth of their peanut crop and reduced its yield. The farmers demanded payment for damages and threatened to sue for false advertising, breach of warranty and fraudulent trade practices. Dow responded by filing a motion for summary judgment and won in federal district court. This case will only be the fifth time that the U.S. Supreme Court has reviewed a FIFRA case, and the first case involving preemption of damage lawsuits. Oral arguments are to be heard this fall or winter, and a judgment is expected in July 2005.

Half of All Antimicrobial Pesticides Used in Hospitals Are Not Working

Antimicrobial pesticides, substances used to destroy or suppress the growth of harmful microorganisms on inanimate objects and surfaces, are often toxic to humans and some have been linked to cancer and other diseases. But in hospitals, sterilization is a must. So if we are going to expose ourselves to these chemicals, shouldn't we at least have some guarantee they are working?

The government thinks so. Under the current guidelines for pesticide regulation, EPA is required to ensure the efficacy of public health antimicrobial pesticides, a standard not required of other pesticides. Unfortunately, EPA's Office of Pesticide Programs' (OPP) Antimicrobial Division director Jack Housenger recently told the American Bar Association Pesticide Committee that approximately half of all hospital disinfectants and sterilants fail the agency's efficacy tests. So far EPA has tested 200 of the 615 disinfectants registered for hospital use and found approximately 50 percent to be ineffective. "It's readily apparent that if your hard surface disinfectant isn't working on bedrails, operating tables and doorknobs, there could be consequences," Mr. Housinger told the on-line journal *Pesticide.net*. "Whether the failure rate for sterilants or other antimicrobials is in the high or low range, I don't think you want to be the one who has the ineffective product used in your situation." Although the issue of antimicrobial resistance was first brought into the public spotlight by a 1990 report, *Disinfectants: EPA Lacks Assurance They Work*, by the Government Accountability Office (GAO – formerly the General Accounting Office), EPA claims to be handling the problem "in a reasonable way." Public health advocates believe that more than a decade later, EPA should have a better track record than 50 percent.

Politics Once Again Trumps Science in Bush EPA

Going against the recommendations of its Science Advisory Board (SAB), EPA announced that it plans not to implement the Board's more protective changes to the Final Guidelines for *Carcinogen Risk Assessment*, according to *Inside* EPA. In March 2003, EPA released the draft guidelines, which include a children's health supplement with specific information on assessing cancer risks to children. According to the agency, "These guidelines provide a framework for EPA scientists to assess possible cancer risks from exposures to environmental pollutants." For children up to age two, the new risk assessment guidelines set chemical risk limits ten times higher, or more stringent than they currently are and three times higher for children aged two through fifteen. However, the important protection would only apply to carcinogenic chemicals that are known to be genotoxic, or cause harm to

genetic material. SAB encouraged EPA to broaden the stricter guidelines to include all carcinogenic chemicals, stating that there is no difference in the data available for genotoxic and non-genotoxic carcinogens, and as a result there is no reason for the two groups to be treated differently and the new safety factors should apply to all carcinogens. However, according to *Inside* EPA, the agency is not planning to follow the SAB's recommendations due to time constraints and pressure from industry.

USDA Pulls Directives that Threatened National Organic Standards

After the U.S. Department of Agriculture (USDA) issued policy directives that weakened the national organic standards, organic consumers, producers and marketers made it clear that they were not happy with the move. Responding to the criticism, USDA Secretary Ann Veneman announced at a news conference on May 26, 2004, that the department is withdrawing the directives. "By rescinding recent National Organic Program 'clarifications' and directing the agency to work with the National Organic Standards Board (NOSB) and the organic industry, Secretary Veneman has taken a gigantic step toward reestablishing the public-private trust that went into developing U.S. national organic standards in the first place," said Katherine DiMatteo, executive director of the Organic Trade Association (OTA). Critics of the directives objected to four provisions which would have allowed: the use of toxic inert ingredients in pesticides that contain organic active ingredients; the use of any kind of drug on cows at any time, including synthetic growth hormones antibiotics, so long as the milk would only be sold as organic 12 months after that treatment; the feeding of fishmeal, which is frequently contaminated with mercury, PCBs and other synthetic chemicals, to organic beef cattle; and, fish, pet food and other products to be labeled organic without third-party certification. Organic food has been a rapidly growing bright spot in the agricultural economy, with sales expected to top $12 billion this year. Weakening organic standards could severely damage consumer interest and confidence in the organic food label. Beyond Pesticides testified at the Chicago meeting of the NOSB stating, "The directive, as we understand it, would allow inert ingredients listed by EPA as List 2 or 3 inerts to be used in certified organic production 'if the certifying agent and producer, after reasonable effort...are unable to ascertain whether inerts in a pesticide are allowed under the NOP. . .' This approach erodes the clear standard of the act and allows hazardous and potentially hazardous materials to be added to organic production."

Test Plots Planted With GE Golf Course Grass, Government Speaks Out

When you think about critics of genetic engineering (GE), the federal government probably isn't the first group that comes to mind. Yet when two multinational giants, Monsanto – the people who brought you the herbicide RoundUp, and Scotts – makers of various lawn pesticides, including 2,4-D, fertilizers and grass seed, planted test plots of GE grass, the government spoke up. Like other "Roundup Ready" products, the grass is engineered to survive high doses of Monsanto's popular herbicide Roundup and will be manufactured for use on golf courses. Yet, unlike other products, the creeping bentgrass would be the first ever GE perennial species approved for use. While GE products are often shrouded in controversy due to the unknown and potentially harrowing effects they may have on the environment and human health, the *St. Louis Dispatch* reports that the GE creeping bentgrass marks "the first time that government agencies have weighed in publicly against a genetically modified crop." Both the U.S. Forest Service and the Bureau of Land Management have made their apprehension clear. "Our concern is that if it was to escape onto public land, we wouldn't know how to control it," Gina Ramos, a senior weed specialist for the Bureau of Land Management told the *Associated Press*. Ms. Ramos cited an already strained program for controlling invasive species. Ms. Ramos's concerns are well founded – a new study by EPA scientists reveals that seeds from genetically engineered bentgrass pollinated plants as far as 13 miles away from the test site, much farther than previously known. The U.S. Forest Service is worried not only that the Round-Up Ready grass could spread herbicide resistance and create "super" weeds, but that the grass could also infect and fundamentally alter rare or native species with unfamiliar genes. The Forest Service said earlier this year that the grass "has the potential to adversely impact all 175 national forests and grasslands." Other government voices that have joined the chorus of caution include the Oregon Department of Agriculture and the California Department of Fish and Game, as well as experts with the Army Corps of Engineers, the Pennsylvania Bureau of Forestry and the California Department of Parks and Recreation.

Around the Country

Pickle Lovers Rejoice: Mt. Olive Pickle Boycott Over!

After five years of hard work by the Farm Labor Organizing Committee, AFL-CIO (FLOC), the public action boycott of the Mt. Olive Pickle Company is over! (See the cover story of the Fall 2003 issue of *Pesticides and You*.) On September 16, 2004, the farmworkers' union reached a precedent setting agreement with the North Carolina Growers' Association and the Mount Olive Pickle Company, making over 8,000 "guest" (the federal government's term for non-U.S. citizen created under Section H-2A of the *Immigration Reform and Control Act of 1986*) farmworkers the first such workers in U.S. history to win union representation and a contract. It will be the largest union contract in North Carolina's history. "This agreement will set an important standard for the rest of the agricultural industry," FLOC President, Baldemar Velasquez said. "Everyone else almost exclusively utilizes undocumented workers and the conditions of those workers are tragic and shameful." The international component of the contract allows the union to oversee the employment of over 8,000 workers from most Mexican States who will work in North Carolina with H-2A visas through the U.S. Department of Labor. The standards set by this agreement are significant because of the agricultural industry's almost exclusive use of undocumented workers. The agreement will cover over 1,000 North Carolina farms and will increase wages to workers and prices to growers by 10% over the next three years.

Study Shows Cinnamon To Be Effective Pesticide Alternative

Communities may have a new option in their ongoing battle against mosquitoes. A study, "Chemical Composition and Mosquito Larvicidal Activity of Essential Oils from Leaves of Different Cinnamomum Osmophloeum Provenances," published in the July 2004 issue of the *Journal of Agricultural and Food Chemistry* (Vol. 52, No. 14), found that cinnamon oil is an effective way to kill mosquito larvae. Researcher Peter Shang-Tzen Chang and colleagues tested eleven compounds in cinnamon leaf oil for their ability to kill emerging larvae of the mosquito responsible for transmitting yellow fever. They found that four compounds, including cinnamaldehyde, the major constituent of cinnamon leaf oil that provides its distinctive odor and flavor, exhibited the strongest activity against the mosquitoes. It is used worldwide as a food additive and flavoring agent, and the U.S. Food and Drug Administration (FDA) lists it as "Generally Recognized as Safe (GRAS)." The researchers say a formulation using the compound could be sprayed like a pesticide, but without the potential for adverse health effects of many insecticides. Other common essential oils, such as catnip, have shown similar promise in repelling mosquitoes, but this is the first time researchers have demonstrated cinnamon's pesticidal potential. Although the team only tested the oil against one species of mosquito, they believe that cinnamon oil should prove similarly lethal to the larvae of other mosquito species and plan further studies.

Vintners Blame Pesticides for Damages to Their Grapes

Two Napa Valley vintners are blaming the California Department of Parks and Recreation's use of two herbicides, Round Up and Garlon 4, for the destruction of some very expensive grapes, reports the July 7, 2004 issue of the *Wine Spectator*. Larry Turley of Turley Wine Cellars and Chuck McMinn of Vineyard 29 claim that pesticide spraying in a state park last month accidentally damaged their vineyards, resulting in the loss of as much as $500,000 of small-production wines. The magazine reports that state officials are denying that herbicide spraying at Bothe-Napa Valley State Park was responsible for the damage. Mr. Turley, who farms organically, says that the herbicide spray drifted and "came down the highway, obliterated fruit from my vines and nuked the crop off my olive trees." He discovered shriveled grape clusters and brown leaves on a half-acre of vines in his 3-acre estate vineyard, which is across the street from the park. The incident

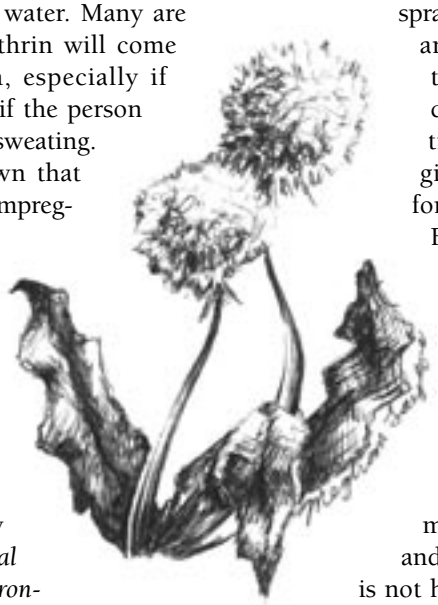
could cost Turley Wine Cellars its organic certification for the next three years. Park officials acknowledge they used Dow AgroScience's Garlon 4 and Monsanto's RoundUp, which contain the active ingredients triclopyr and glyphosate, respectively, to eradicate a non-native ground plant known as vinca. Officials from the agricultural commissioner's office have removed foliage samples from around the vineyards for testing. Pesticide drift is not just a problem for vintners. According to EPA, "Each year, states receive about 2,500 complaints of drift from individuals." In 2002, nearly half of the reported pesticide illness cases in California were individuals who were exposed as a result of pesticide drift.

Pesticide-Impregnated Clothing Marketed to Kids, Outdoor Enthusiasts

The synthetic pyrethroid insecticide permethrin is a carcinogen, suspected endocrine disruptor, and has been linked to asthma attacks. People go out of their way to avoid exposure when it's sprayed from trucks and helicopters to control mosquitoes. It might be shocking to learn that outdoor recreation stores all over the U.S., including Recreational Equipment Incorporated (REI), Eastern Mountain Sports, and Hudson Trail Outfitters, are selling Buzz Off Insect Shield Insect Repellent Apparel, clothing that is impregnated with the cancer causing insecticide permethrin. In July 2004, Buzz Off Insect Shield launched a new line of kids clothes that is being sold at Talbot's Kids and other stores. The recent popularity of Buzz Off Insect Shield clothing is particularly worrisome to environmentalists because the clothing's label does not adequately display the dangers of permethrin, both to consumers and the environment, and does not caution against improper uses. The label states that the clothing is effective for 25 washings, and that it should be washed separately, meaning that the chemical comes off in water. Many are concerned that permethrin will come off on the user's skin, especially if the clothes get wet or if the person wearing the clothing is sweating. Past research has shown that some permethrin from impregnated clothes will be absorbed into the body. To make matters worse, it's likely that the clothes may be used in combination with DEET, the most commonly used insect repellant. A 2001 study published in the *Journal of Toxicology and Environmental Health* (Vol. 62, No. 7) links this combination of chemicals to Gulf War Syndrome, the neurological disease associated with veterans of the Gulf War.

Planned Herbicide Spraying Near Yosemite National Park Draws Criticism

The Central Sierra Environmental Resource Center (CSERC) and the California Indian Basketweavers Association (CIBA) are protesting a U.S. Forest Service plan to aerially spray herbicides over nearly 1,200 acres near Yosemite National Park in California. The Forest Service says the brush in the Stanislaus National Forest has grown too high for hand spraying and the terrain is too steep for mechanical shredders to operate. The service plans to use helicopters to spray the herbicides to kill brush encroaching on an area west of Yosemite that burned in 1987 and replant a conifer forest. The spraying is planned for late spring 2005.



CSERC and CIBA say the spraying is not necessary and CSERC believes the true motive is to create a tree plantation for future logging operations, not for fire control as the Forest Service claims. "They insist they want a healthy forest for wildlife," CSERC's executive director John Buckley said, "but to kill off many square miles of existing forest and set it back 17 years is not healthy for wildlife." Both are appealing the forest managers' proposal to spray, which was adopted in July 2004. The groups say the herbicide glyphosate, the active ingredient in the herbicide Roundup, will be detrimental to plants valuable to Native Americans. Vivian Parker, a biologist for CIBA, said the herbicide spraying, planned for late next spring, will kill scores of plants that many Native Americans consider important for food, baskets and ceremonial activities, as well as plants that provide important wildlife habitat.

Consumers Prefer Local and Pesticide, Antibiotic and Hormone-Free Foods

Attention Beyond Pesticides members... you're not alone! According to a national consumer opinion poll conducted by Roper Public Affairs on behalf of Organic Valley Family of Farms, seven in ten Americans express some concern about the health risks of pesticides, hormones, antibiotics and other chemicals used in

food production, with over one in four saying these chemicals pose a high risk to human health. The survey, *Food and Farming 2004*, also found that respondents overwhelmingly (71%) feel that smaller scale family farms are more likely to care about food safety than large-scale industrial farms, and the majority of consumers (73%) find it important to know whether food is grown or produced locally or regionally. "Once again, the American public has placed their trust in the family farm," said George Siemon, founding farmer and CEO of Organic Valley. "Small and mid-sized family farmers take great pride in the integrity and quality of the food they produce. We are farming for the next generation and not solely for this year's profits. Children are our utmost concern and that is why we do everything we can to avoid polluting our bodies, our animals and the earth." The survey also found that over half of the respondents would pay more for foods produced without chemicals and would be willing to pay a premium for foods produced with humane treatment of animals.

Canadian Medical Association Calls for "Weed and Feed" Ban

In yet another story about Canadians doing the right thing when it comes to lawn care, the Canadian Medical Association (CMA) adopted a resolution on August 16, 2004 calling for the banning of combined fertilizer and pesticide products. Products that combine a fertilizer with pesticides, commonly known as "Weed and Feed," are becoming more prevalent, contributing to the increased use of pesticides that can be harmful to human health and the environment. The decision was made after the British Columbia Medical Association (BCMA) called on CMA to take action on this issue at their annual meeting earlier in the month. Dr. Jack Burak, President of BCMA, stated, "Many consumers are unaware of the toxicity of these combined products and tend to spread them widely over their lawn when they should only be used in concentrated, problematic areas. For the health of ourselves and our environment, pesticide use should be a measure of last resort, and should not be used indiscriminately or even unknowingly." Some Canadian garden supply storeowners refuse to stock weed and feed products. "It's a misuse of the chemical, as far as we're concerned," stated Wade Hartwell, owner and president of Golden Acre Garden Sentres in Calgary. "[People] put it on the whole lawn when they only have two weeds." Weed and feed products typically contain hazardous herbicides such as 2,4-D or dicamba. A growing number of scientific studies now link exposure to pesticides with increased rates of certain cancers, nervous system diseases, learning disabilities, Parkinson's disease, and reproductive problems.

Maine's Pesticide Board Advocates Less Pesticides on Lawns

The Maine Department of Agriculture's Board of Pesticide Control says it wants Mainers to take a more relaxed and more natural approach to their lawns, according to an August 2004 article in *Kennebec Journal*. The Board advises people to use fewer pesticides and fertilizers in order to have healthier lawns and a cleaner environment. Chemical fertilizers can kill natural microorganisms that foster healthy soil. Referring to consumer overuse of fertilizers, Gary Fish, a state environmental specialist, told the *Kennebec Journal* that, "When they maintain their lawns like that, they end up with more disease, more weeds and more pest problems. Then they turn to pesticides." The Board estimates that 1.8 million pounds of yard-care pesticides were placed on Maine lawns in 2001, up from 800,000 pounds in 1995. Throughout the country, approximately 67 million pounds of pesticides are used each year on lawns. These numbers and the increasing suburbanization of Maine's landscape have led the board to turn its attention to household pesticide and fertilizer use, a growing source of pollution for Maine's rivers and streams. "There hasn't been enough effort and prevention in this area," Mr. Fish said. "And the way that Madison Avenue treats pesticides is a little too lackadaisical." Pesticides used in lawn care are among the most dangerous and prevalent in society today. Of the 36 most commonly used lawn pesticides, 14 are probable or possible carcinogens, 15 are linked with birth defects, 21 with reproductive effects, 24 with neurotoxicity, 22 with liver or kidney damage, and 34 are sensitizers and/or irritants.

Mount Sentinel, an area managed by the University of Montana, is visible from the city of Missoula.

PHOTO BY RON WHEELER.

Montana's War On Weeds

Dow Chemical influences Forest Service shift to its herbicides

By John Kepner

Near the Broadway I-90 cutoff, on the east side of town, travelers stop to read the story of Missoula, Montana's bloody Hellgate Canyon Indian ambushes. There on a carved roadside plaque they learn the origin of "Missoula." It is derived from *l-Sul*, an American Indian sound for *horrible surprise*, describing the terrible battles, the bones, and the skulls scattered within the narrow, rocky passageway that leads to a closed in place. Horrible surprise indeed...

At the outskirts of the city, Missoula's heavy air begins to ooze through the car's ductwork, weighing on lungs, burning eyes and nose. Soon we're enclosed within the stagnant Missoula valley, squatting grounds of the Smurfit-Stone pulp mill that burns tons of plastic "hog fuel" every day; the poisonous Borden urea formaldehyde resin factory; Roseburg Corporation's nearby particle board mill, where the resins are mixed with sawdust and heated; and, the unmistakable, deadly smell of herbicide vapors. It is summer. There's a sign: Welcome to *The War On Weeds In the West*. It's not cowboys and Indians in Montana. It's chemical warfare. And local activists believe that Dow Chemical is pulling the trigger.

Activist successes and the Lolo National Forest pitfall

Weed management hasn't always been as chemically dependent in Missoula. Activists striving to protect human health and the environment from pesticides have historically been very strong in and around the rural Montana town throughout the past quarter century. In the 1980's, scientists, activists and concerned policymakers successfully put an end to herbicide spraying on the federal lands that surround Missoula. Then in the early 1990's, a group of students and community activists joined forces and stopped a University of Montana proposal to poison campus lawns, hammering out a compromise with university officials that significantly reduced the pesticides used on campus. Similar grassroots pressure in the mid-1990's convinced the Missoula public school system to adopt an integrated pest management (IPM) program that allows pesticides to be used only as a last resort.

But then there's the issue of noxious – or non-native, invasive – weed management in the Lolo National Forest, the public lands that surround the town limits of Missoula. When the U.S. Forest Service (USFS) stopped spraying herbicides in the Lolo National Forest during the 1980's, it did not adequately address the potential spread of invasive weeds with an alternative approach. During this time, invasive weeds took hold and began to spread through the Lolo Forest. Reacting after years of a "do nothing" approach, USFS reintroduced herbicides into the Lolo National Forest for the first time in 1992, as part of its weed management program.

Aerial herbicide application for weed control has become a common practice in Montana, and the Lolo National Forest is no exception. USFS uses ground and aerial herbicide applications, as part of a program that also includes public education, biological controls, and revegetation. However, USFS believes that the most effective program must include

PHOTO BY RON WHEELER.

Herbicide damage visible on the hillside of Mt. Jumbo (left), Hellgate Canyon (right), and the Clark Fork River (front).

What is a Noxious Weed or Invasive Species?

Legally speaking, noxious weeds are exotic (non-native) plants regulated by law that are aggressive, difficult to manage, and invasive. Most of these weeds were imported to the U.S. in the late 1700's through the early 1900's from Europe and Asia. In their native habitats, these weeds are harmless. However, due to lack of predators and ability to withstand environmental stresses, many introduced species have spread like wildfire. Many of today's problem species tend to spread in distressed and developed areas, such as along roadways, utility rights-of-way, overgrazed areas and recently logged portions of forests. Many are concerned that invasive species have the potential to displace or significantly alter native plant communities and ecosystems. In any event, many non-native species have established themselves in the U.S. and therefore eradication strategies are generally believed to be unattainable.

the use of herbicides. The chemicals of choice include Tordon 22k (picloram), Transline (clopyralid) and 2,4-D. "While there are other integrated pest management tools like hand pulling and sheep or goat grazing in the weed management tool box, our experience indicates that a combination of weed education and prevention programs, biological controls, ground and aerially applied selective herbicides and revegetation are most effective and economical on the Lolo," National Forest supervisor Deborah Austin said in a July 16, 2004 proposal memo. Ms. Austin also said that she emphasizes aerial and/or ground herbicide spraying in areas of concentrated public use, areas that are currently weed-free and the roads, trails and trailheads that lead into these areas, administrative sites, areas that border private landowners with active weed control programs, and bunchgrass on big game winter ranges. These areas of herbicide use currently cover approximately 5,000 acres of the forest, but USFS has plans to triple the treated acreage.

On August 4, 2004, USFS published in the *Federal Register* (Vol. 69, No. 149) its proposed plan to increase the maximum area of land sprayed with pesticides in the Lolo National Forest to 15,000 acres. Currently, the acreage undergoing herbicide spraying has already been authorized by decisions under the *National Environmental Policy Act* (NEPA). However, the proposed plan, would authorize USFS to spray up to 15,000 acres outside of existing project areas that have been reviewed under NEPA decisions. Ms. Austin describes the present plan as not working and explains that the proposed expansion of herbicide use is the best way to deal with noxious weeds. "[E]fforts have not been sufficient to contain, control or reduce existing and new populations of weeds over a wide variety of sites. From a forest-wide perspective, existing weed control decisions only authorize the use of herbicides on a small portion of the forest. On the areas covered by these decisions we have been very effective...We need the ability to respond more rapidly to new and relatively small weed infestations."

This latest decision to increase the use of poisons in Montana's forests in the name of environmental protection has left many local activists wondering how the management of these lands surrounding Missoula got to this point.

Is Dow calling the shots?

Given the region's strong environmental track record, many local activists thought there might be more behind the Forest Service's decision to go ahead with a toxic herbicide spray plan that has such strong public disapproval. An investigation into the USFS management plan in the Lolo National Forest finds that three of the herbicides used on the Lolo National Forest are turning a profit for Dow AgroSciences, the pesticide division of the Dow Chemical Company. While it is impossible to say for sure what kind of influence Dow has on the Forest Service, local activists from Missoulians for a Clean Environment, a group instrumental in many of Missoula's environmental victories of the 1990's, have uncovered documents which point in that direction.

The depth of Dow's connection to the spray strategy first came to light through two documents linked to University of Montana's Division of Biological Sciences researcher Peter Rice, PhD, who serves as director of the Invaders Database Project. The first is a January 1996 memo from Dr. Rice to Mary Halstvedt, a Dow field representative in Estes Park, Colorado. In it, Dr. Rice updates Ms. Halstvedt on his weed control research in the Bitterroot National Forest, which he describes as a project that will "help convince other Forest Service land managers to make more aggressive use of herbicides." The memo also explains his plans to expand the scale of his research and asks for Dow's input regarding his research and plan for the Bitterroot.

The second document is a court transcript from a District Court, Boulder County, Colorado proceeding on May 7, 1996 that ties Dr. Rice to payments from Dow while researching the company's herbicide, Tordon 22K, which is now one of the

herbicides being used in the Lolo National Forest. The court document reveals that as of the date of the hearing, Dr. Rice had received $25,700 from Dow – $20,000 as payment for his testimony on behalf of Dow over a four year period and $5,700 for examining a computer database on forest systems.

Dow's formal relationship with the Forest Service

On January 4, 2001, the relationship between USFS and Dow AgroSciences became official, when the two parties, along with the Bureau of Land Management (BLM), signed a "Memorandum of Understanding (MOU) to Collaborate on Invasive Weed Research." According to the MOU, its purpose is to "provide a general framework of cooperation between the parties concerning research, education, technology development, training and management of exotic, invasive noxious weeds. Such cooperation will increase the available knowledge on management, containment and control of these exotic species both on public and private lands, thereby benefiting both parties and the public."

Aside from providing a general framework for combined weed management projects, the MOU requires that no party to the agreement publish any data, test results or publication materials without approval of the other parties. The agreement gives Dow the opportunity to provide trainings to federal employees on the "proper use of herbicides" as part of an integrated weed management program. Local environmentalists report being barred entry to at least one of these trainings.

Given the region's strong environmental track record, many local activists thought there might be more behind the Forest Service's decision to go ahead with a toxic herbicide spray plan that has such strong public disapproval.

The 2001 MOU was written to expire unless renewed in 2002, and presently no official action has been taken. However, this does not mean that the relationship with Dow has ended. "While the document was never officially renewed, Dow still has an agreement with the federal government to continue the experimental plots," BLM Senior Weed Specialist Gina Ramos told Beyond Pesticides. She continued by saying she does expect the agreement to be officially renewed in the near future.

PHOTO BY RON WHEELER.

The herbicide-scorched North Hills rising above the Missoula County Court House.

Dow's Toxic Trio

Tordon: USFS's most commonly used herbicide in the Lolo National Forest, Dow's Tordon 22K, contains the active ingredient picloram. Tordon has been associated with a number of human poisoning incidents and because it is very stable, has been linked to groundwater contamination. Picloram was formulated with 2,4-D to form the defoliant Agent White, used widely during the Vietnam War, and still commonly used today. A National Cancer Institute study found picloram to cause cancer in rats, but EPA does not classify it as a carcinogen.

Transline: Used to control knapweed in the Lolo National Forest, Dow's Transline herbicide contains the active ingredient clopyralid. Clopyralid use has recently been banned and restricted in several states due to concerns about its persistence in the environment. EPA tests show that clopyralid causes reproductive problems, including reduced fetus weight, skeletal abnormalities, and hydrocephaly (accumulation of excess fluid around the brain).

2,4-D: Dow is currently the world's largest and only U.S. producer of 2,4-D. This phenoxy herbicide is an endocrine disruptor, which can interfere with hormone function and can contribute to breast and testicular cancer, birth defects, and learning problems. Several studies have linked 2,4-D to non-Hodgkin's lymphoma.

Missoula chooses similar path, but treads lightly

The city of Missoula, which is surrounded by public lands, manages its lands under a policy similar to the Forest Service policy. They both have management plans that call for a combination of herbicides, mechanical controls, bio-controls (weed-eating insects), replanting and grazing. The city also opts for the same herbicide of choice, Tordon, for the majority of its spraying. And, the city even cooperates with USFS, allowing it to manage test plots on city property. Furthermore, the plan is run by a team led by Marilyn Marler, PhD of the University of Montana's Division of Biological Sciences. Despite all these connections and similarities, the differences between the city and the Forest Service are in the details of the implementation.

The city has an active volunteer program that organizes a few weed pulling events each year. While this covers a very limited number of acres, it serves as a source of education, and the land is typically in areas of concentrated public use, where environmentalists feel herbicide use must be restricted. Missoula has successfully used weed-eating insects as bio-controls. The city also grazes goats for weed control, covering 313 acres last season, compared with 240 sprayed with pesticides. When the city uses herbicides, it only applies from the ground. While the pesticide products are the same, the USFS plan drops the chemicals from helicopters, which studies show, allow pesticides to drift miles from their intended target.

Conclusion

Activists say it is not a coincidence that the Forest Service has expanded an herbicide spray program that utilizes, almost exclusively, Dow AgroScience's products. Documents confirm that Dow has supported research and had relationships with decision makers who influence weed management in Montana and possibly other western states. The facts speak for themselves. Small plot studies have been expanded. A three-fold expansion in land area that can be sprayed with Dow's herbicides is a matter of policy. Huge swaths have been burned into Missoula's hillsides by herbicides that are known to leach and contaminate water. Water runs down hill, and Missoula sits over a sole source drinking water aquifer. The Missoula airshed is thick with herbicide vapors. People living below the poisoned hillsides complain of burning eyes and throats, a strange flu-like malaise, and depression. It is *l-sul* in Missoula, Montana's dirty secret. Welcome to *The War On Weeds In the West*.

John Kepner is project director at Beyond Pesticides. Jay Feldman, executive director of Beyond Pesticides, and Will Snodgrass, an environmental advocate and resident of Missoula, contributed to this article.

True Integrated Weed Management: Pesticides as a last resort

By David Pimentel, PhD, Cornell University

Safe, effective management and control of established exotic-weeds requires input from and the joint effort of scientists from several distinct disciplines, including biological control specialists, chemical control specialists, wildlife ecologists, animal science specialists, economists, and the public. The basic premise of IPM centers on employing first biological and other non-chemical pest controls, with the use of chemical pesticides only as a last resort. Since pesticide effects on public health and the environment cost the United States a conservatively estimated $9 billion per year, this should be a much welcome change.

There are some safer, though less widely used, options for weed control. In some cases, the use of biological control agents, like insects, can selectively remove one weed species from a pasture, range, and/or natural ecosystem with minimal ecological effects. Biological pest control using natural enemies in the U.S. provides an estimated $12 billion/year in benefits. Not only is the use of biological controls economical, but once established, these insect species provide permanent, effective control of the weed.

Finally, in some situations, selective grazing by various livestock species can be an effective method of weed control. The introduction of a particular livestock animal, like geese, goats, cattle, and sheep, can reduce pest weeds and make the pasture and/or range land more productive.

USFS has tried some alternatives in the Lolo National Forest, such as limited beneficial insect use, but local activists feel that its use of pesticides is not a last resort. Forest Service officials cite mountain lions as the reason they have not employed grazing strategies.

Excerpt from Dr. Pimentel's talk at Beyond Pesticides' 19th National Pesticide Forum at the University of Colorado, Boulder, May 19, 2001.

The Ubiquitous Triclosan

A common antibacterial agent exposed

By Aviva Glaser

CHEMICAL NAME: *2,4,4'-Trichloro-2'-hydroxydiphenyl ether. CAS# 3380-34-5. Other names: Microban, Irgasan DP-300, Lexol 300, Ster-Zac, Cloxifenolum, Biofresh etc.*

There is a disinfectant showing up in hundreds of common consumer products that is raising serious cause for concern. The chemical, triclosan, is a synthetic, broad-spectrum antimicrobial agent that in recent years has exploded onto the consumer market in a wide variety of antibacterial soaps, deodorants, toothpastes, cosmetics, fabrics, plastics, and other products. Studies have increasingly linked triclosan to a range of health and environmental effects, from skin irritation, allergy susceptibility, bacterial and compounded antibiotic resistant, and dioxin contamination to destruction of fragile aquatic ecosystems. Concerns about triclosan have even led some manufacturers, such as Tom's of Maine, to specifically state that their toothpaste products do not contain triclosan. According to the American Medical Association, "Despite their recent proliferation in consumer products, the use of antimicrobial agents such as triclosan in consumer products has not been studied extensively. No data exist to support their efficacy when used in such products or any need for them... it may be prudent to avoid the use of antimicrobial agents in consumer products…"

Triclosan possesses mostly antibacterial properties, but also some antifungal and antiviral properties. It is marketed under the trade name Microban® when used in plastics and clothing, and Biofresh® when used in acrylic fibers. Triclosan is most often used to kill bacteria on the skin and other surfaces, although it sometimes is used to preserve the product against deterioration due to microbes. Antibacterials are similar to antibiotics in that they both inhibit bacterial growth. But while the purpose of antibiotics is to cure disease, the purpose of antibacterials are to prevent transmission of disease-causing micro-organisms.

Triclosan has been used for over 30 years. Its uses were originally confined mostly to health care settings, first introduced in the health care industry in a surgical scrub in 1972. Over the last decade, there has been a rapid increase in the use of triclosan-containing products. A marketplace study in 2000 by Eli Perencevich, M.D. and colleagues found that over 75% of liquid soaps and nearly 30% of bar soaps (45% of all the soaps on the market) contained some type of antibacterial agent. Triclosan was the most common agent found – nearly half of all commercial soaps contain triclosan. While EPA does not publish total sales volume numbers, it is clear that the prevalence of triclosan in multitudes of personal care products amounts to massive quantities of active ingredient produced every year. For example, in Sweden in 1998 alone,

Some common household products that contain triclosan. For a more complete list, see box on page X.

What is an Antimicrobial?

Antimicrobial pesticides are substances or mixtures of substances used to destroy or suppress the growth of harmful microorganisms whether bacteria, viruses, or fungi on inanimate objects and surfaces, and like all pesticides, are registered by the Environmental Protection Agency (EPA). However, many of these same chemicals are also used in personal care products, such as soap, toothpaste and lotion, but are not considered pesticides, because of a loophole in federal law. Antimicrobial products used on the human body or in processed food or food wrappers, even with identical active ingredients, are technically not considered pesticides and are regulated by the U.S. Food and Drug Administration (FDA). Since the toxicology is the same, this factsheet will consider all uses.

Antimicrobial products contain about 275 different active ingredients and are marketed in several formulations: sprays, liquids, concentrated powders, and gases. Approximately one billion dollars are spent per year on antimicrobial products. More than 5,000 products are currently registered as antimicrobial pesticides with EPA under the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA). Unlike other pesticides, antimicrobials registered for public health uses require efficacy reviews so that EPA can make sure the manufacturers' claims hold up. However, EPA's Office of Pesticide Programs (OPP) Antimicrobial Division director Jack Housenger revealed in 2004 that approximately half of all hospital disinfectants and sterilants, which are also regulated as antimicrobial pesticides, fail the agency's efficacy tests.

25% of the total amount of toothpaste sold contained triclosan, corresponding to around two tons of active ingredient.[7]

How it works. Triclosan works by blocking the active site of the enoyl-acyl carrier protein reductase (ENR) enzyme, which is an essential enzyme in fatty acid synthesis in bacteria. By blocking the active site, triclosan inhibits the enzyme, and therefore prevents the bacteria from synthesizing fatty acid, which is necessary for building cell membranes and for reproducing. Since humans do not have this ENR enzyme, triclosan has long been thought to be fairly harmless to them. Triclosan is a very potent inhibitor, and only a small amount is needed for powerful antibiotic action.

Effectiveness. Under the appropriate settings and conditions, such as in hospitals to prevent hospital-acquired infections, triclosan has been proven to be effective. But no current data demonstrate any extra health benefits from having antibacterial-containing cleansers in a healthy household. For example, a study of over 200 healthy households found that those households that used antibacterial products did not have any reduced risk for symptoms of viral infectious diseases. The Centers for Disease Control and Prevention says that antibacterial soaps are not necessary in everyday use, and washing hands with ordinary soap and warm water is an effective way to ward off infections.

Close-up of a popular toothpaste label, which lists triclosan as an ingredient.

Toxic Characteristics

Acute Toxicity. In classical toxicological terms, triclosan is relatively non-toxic to humans and other mammals. However, there have been reports of contact dermatitis, or skin irritation, from exposure to triclosan.There is also evidence that triclosan may cause photoallergic contact dermatitis (PACD), which occurs when the part of the skin exposed to triclosan is also exposed to sunlight. PACD can cause an eczematous rash, usually on the face, neck, the back of the hands, and on the sun-exposed areas of the arms. There is also a reported case of an immunotoxic and neurotoxic reaction to triclosan. Manufacturers of a number of triclosan-containing toothpaste and soap products claim that the active ingredient continues to work for as long as 12 hours after use. Thus, consumers are exposed to triclosan for much longer than the 20 seconds it takes to wash their hands or brush their teeth. The dermal LD50 (the lethal dose that kills 50 percent of a population of test animals) for rats is 5000 mg/kg. The oral LD50 for rats is 4500-5000 mg/kg, for mice it is 4000 mg/kg, and for dogs it is over 5000 mg/kg.

Chronic Health Effects. Triclosan has not been found to have any carcinogenic, mutagenic, or teratogenic effects. A Swedish study found high levels of triclosan in three out of five human milk samples, indicating that triclosan does in fact get absorbed into the body, often in high quantities. Additionally, triclosan is lipophilic, so it can bioaccumulate in fatty tissue. Concerns over triclosan interfering with the body's thyroid hormone metabolism led to a study that found that triclosan had a marked hypothermic effect, lowering the body temperature, and overall causing a "nonspecific depressant effect on the central nervous system" of mice. Although the chemical structure of triclosan closely resembles certain estrogens, a study on a Japanese species of fish did not demonstrate estrogenic effects. However, it did find that triclosan is weakly androgenic, causing changes in fin length and sex ratios.

Allergy Link. Another potential problem with overuse of triclosan (and other antibacterials) is their link to allergies. The "hygiene hypothesis," theorizes that there is a correlation between too much hygiene and increased allergies and asthma. This hypothesis is based on studies that have found an increase in the frequency of allergies, asthma, and eczema in persons who have been raised in more sterile and hygienic environments. Through overcleaning, the theory states, the body's immune system is not challenged, and thus it is prevented from developing and maturing. In one study, children who grew up on farms had fewer allergies than did their counterparts who did not live on farms. In another study, researchers found that respiratory allergies were less frequent in people who were heavily exposed to microbes, leading the researchers to conclude that, "Hygiene and a westernised, semisterile diet may facilitate atopy by influencing the overall pattern of commensals and pathogens...thus contributing to the epidemic of allergic asthma and rhinitis in developed countries."

Dioxin Link. Recently, there have been a number of concerns about triclosan and its link to dioxin. Dioxin can be highly carcinogenic and can cause health problems as severe as weakening of the immune system, decreased fertility, altered sex hormones, miscarriage, birth defects, and cancer. Triclosan is listed as "could be" and "suspected to be" contaminated with dioxins in EPA's draft Dioxin Reassessment. Because of the chemical structure as a polychloro phenoxy phenol, it is possible that dioxin can be found in triclosan as synthesis impurities. In addition to being formed during the manufacturing process, dioxin may also be formed upon incineration of triclosan.

Researchers who added triclosan to river water and shined ultraviolet light on the water found that between one and twelve percent of the triclosan was converted to dioxin in the water, leading to fears that sunlight could transform triclosan to dioxin naturally. An even more serious health threat may stem from treatment of triclosan-tainted water at water treatment plants-sunlight could convert chlorinated triclosan into highly toxic forms of dioxin. Exposure to sunlight in the solid

state of triclosan, such as on commercial textile products, also causes formation of dioxin, albeit in smaller amounts than aqueous solutions.

Resistance Concerns. A number of recent studies have raised serious concerns that triclosan and other similar products may promote the emergence of bacteria resistant to antibiotics. One concern is that bacteria will become resistant to antibacterial products like triclosan, rendering the products useless to those who actually need them, such as people with compromised immune systems. Scientists also worry that because triclosan's mode of action and target site in the bacteria is similar to antibiotics, bacteria that become resistant to triclosan will also become resistant to antibiotics. There are also at least two other proven resistance mechanisms that are similar for both triclosan and antibiotics. Triclosan does not actually cause a mutation in the bacteria, but, by killing the normal bacteria, it creates an environment where mutated bacteria that are resistant to triclosan are more likely to survive and reproduce. With so many products on the market containing triclosan, the speed with which resistance develops is likely to be increased.

Laboratory studies with triclosan have found a number of different strains of mutated bacteria that are resistant to triclosan. These studies found that these mutant strains of bacteria also showed resistance to certain antibiotics, including a drug widely used for treatment of tuberculosis, an experimental antibiotic currently under development, and a number of other "clinically relevant" antibiotics. While most resistant bacteria grow more slowly than sensitive bacteria, *E. coli* strains that are resistant to triclosan actually have increased growth rates. Constant exposure to triclosan will cause these resistant strains to tolerate it better, become increasingly hardy, and ever more resistant. Because antibiotic resistance has become an increasingly serious problem worldwide, the link to antibacterials may prove to be very important. In a recent review of the subject, one researcher concluded, "It is therefore quite possible that widespread use of triclosan may indeed compound antibiotic resistance."

Environmental effects

Over 95% of the uses of triclosan are in consumer products that are disposed of in residential drains. Since wastewater treatment plants fail to remove triclosan from the water and the compound is highly stable for long periods of time, a huge amount of triclosan is expected to be emitted into waterways. In a U.S. Geological Survey study of 95 different organic wastewater contaminants in U.S. streams, triclosan was one of the most frequently detected compounds, and in some of the highest concentrations. A study of triclosan in bodies of water in Switzerland also found high concentrations of the chemical in several lakes and rivers, as well as lower levels of methyl triclosan, its breakdown by-product. Methyl triclosan, which is formed by a process called biological methylation, is actually more lipophilic than its parent compound, and thus more bioaccumulative.

Triclosan can have detrimental effects on aquatic ecosystems. It has been found to be highly toxic to different types of algae.[53] Triclosan effluents affect both the structure and the function of algal communities in stream ecosystems. Because algae are the first-step producers in aquatic ecosystems, high levels of triclosan discharged into the environment may cause possible destruction of the balance of aquatic ecosystems. The risks are especially high immediately downstream from wastewater treatment plants.

Because of its lipophilic nature and resistance to degradation, triclosan in waterways is readily available for absorption and bioaccumulation by aquatic organisms in the environment. Researchers in Sweden found high levels of triclosan present

How Does FDA Regulate Antimicrobials?

If an antimicrobial product is intended for use on the human body, it falls under the jurisdiction of FDA, rather than EPA. FDA categorizes triclosan and other antimicrobial products based on use and product claims. If a product makes a health-related claim, such as "kills germs" (soap, first aid creams, etc.), FDA registers it as a drug. If it makes no claim at all or if its claims are cosmetic, such as "fights odors" or "improves skin" (deodorant, make-up, shaving cream), it is registered as a cosmetic. All uses not applied to the human body (bathroom and kitchen cleaners, hospital disinfectants), that make pesticidal claims, such as "kills bacteria and mildew" are regulated by EPA as pesticides.

FDA regulates drugs similar to the way that EPA regulates pesticides, using a risk-benefit analysis based on data gathered from animal studies and human clinical trials. The manufacturer must prove that: the drug is safe and effective in its proposed use(s), and that the benefits of the drug outweigh the risks; the drug's proposed labeling is appropriate; and the manufacturing methods used are able to maintain the drug's quality, identity, strength, quality, and purity.

On the other hand, FDA is only able to regulate cosmetics after products are released on the marketplace. Neither cosmetic products nor cosmetic ingredients are reviewed or approved by FDA before they are sold to the public. FDA cannot require companies to do safety testing of their cosmetic products before marketing. However, if the safety of a cosmetic product has not been substantiated, the product's label must read: "WARNING: The safety of this product has not been determined." FDA does not require, but maintains a voluntary data collection program. If cosmetic products are found to present a hazard, recalls are also voluntary.

in the bile of fish that were placed in cages downstream of sewage treatment works in Sweden. Methyl triclosan has also been found in fish. Although little is known about the effects on fish, triclosan has been found to be highly toxic to Japanese medaka fish in their early life stages, and may be a weak endocrine disruptor.

Regulatory information and history

EPA and FDA share responsibility for regulating antimicrobial products. In general, EPA regulates all of the pesticidal uses of triclosan when it is used as a preservative, a fungicide, or a biocide, such as with Microban® in plastics. The FDA regulates all food and drug uses of triclosan, including its use in soaps, deodorants, creams, and acne medications. The first patent for triclosan was issued in 1966. A year later, the first patent was issued for a product containing triclosan, issued to the Colgate-Palmolive Company for antibacterial soap bars. Over the next decade, other soaps, disinfectants, deodorants, shampoos, and medical supplies, all containing triclosan and designed to be antibacterial, were invented and put on the market. Triclosan has not undergone a reregistration by the EPA.

In 1997, the EPA acted to prevent the manufacturer of Playskool toys, Hasbro, Inc. (which sells toys made with Microban® plastic containing triclosan), from making false claims about protecting children from microbial infections. Hasbro could no longer claim that toys treated with triclosan protect children from infectious diseases caused by bacteria because it did not prove efficacy to EPA. Labels and advertisements for the toys suggested that the treatment protects children from health risks, when in fact it protects only the plastic in the toy. The company is prevented from making such claims due to a lack of reliable data to support them. Under the agreement, Hasbro had to publish large advertisements in certain newspapers and magazines about misrepresentation of the public health claim.

Overall, FDA and EPA have done little to warn consumers of the possible health and environmental effects of triclosan. European countries, by contrast, have taken a much different approach to this chemical. In 2000, the Danish EPA, National Board of Health, National Central Laboratory and the Danish Consumer Information Center issued a joint statement advising consumers against the routine use of antibacterial household and personal hygiene products, stating that their use is unnecessary for domestic use and potentially harmful to the environment as they "are extremely persistent and highly toxic

List of Products

SOAP: Dial® Liquid Soap; Softsoap® Antibacterial Liquid Hand Soap; Tea Tree Therapy™ Liquid Soap; Provon ® Soap; Clearasil® Daily Face Wash; Dermatologica® Skin Purifying Wipes; Clean & Clear Oil Free Foaming Facial Cleanser; DermaKleen™ Antibacterial Lotion Soap; Naturade Aloe Vera 80® Antibacterial Soap; CVS Antibacterial Soap, pHisoderm Antibacterial Skin Cleanser, Dawn® Complete Antibacterial Dish Liquid, Ajax® Antibacterial Dish Liquid.

DENTAL CARE: Colgate Total®; Breeze™ Triclosan Mouthwash; Reach® Antibacterial Toothbrush; Janina Diamond Whitening Toothpaste

COSMETICS: Supre® Café Bronzer™; TotalSkinCare Makeup Kit; Garden Botanika® Powder Foundation; Mavala Lip Base; Jason Natural Cosmetics; Blemish Cover Stick; Movate® Skin Litening Cream HQ; Paul Mitchell Detangler Comb, Revlon ColorStay LipSHINE Lipcolor Plus Gloss, Dazzle

DEODORANT: Old Spice High Endurance Stick Deodorant, Right Guard Sport Deodorant
Queen Helene® Tea Trea Oil Deodorant and Aloe Deodorant; Nature De France Le Stick Natural Stick Deodorant; DeCleor Deodorant Stick; Epoch® Deodorant with Citrisomes; X Air Maximum Strength Deodorant

OTHER PERSONAL CARE PRODUCTS: Gillette® Complete Skin Care MultiGel Aerosol Shave Gel; Murad Acne Complex ® Kit, ®; Diabet-x™ Cream; T.Taio™ sponges and wipes, Aveeno Therapeutic Shave Gel,

FIRST AID: SyDERMA® Skin Protectant plus First Aid Antiseptic; Solarcaine® First Aid Medicated Spray; Nexcare™ First Aid, Skin Crack Care; First Aid/Burn Cream; HealWell® Night Splint; 11-1X1:Universal Cervical Collar with Microban

KITCHENWARE: Farberware® Microban Steakknife Set and Cutting Boards; Franklin Machine Products FMP Ice Cream Scoop SZ 20 Microban; Hobart Semi-Automatic Slicer; Chix® Food Service Wipes with Microban; Compact Web Foot® Wet Mop Heads

COMPUTER EQUIPMENT: Fellowes Cordless Microban Keyboard and Microban Mouse Pad

CLOTHES: Teva® Sandals; Merrell Shoes; Sabatier Chef's Apron; Dickies Socks; Biofresh® socks

CHILDRENS TOYS: Playskool®: Stack 'n Scoop Whale, Rockin' Radio, Hourglass, Sounds Around Driver, Roll 'n Rattle Ball, Animal Sounds Phone, Busy Beads Pal, Pop 'n Spin Top, Lights 'n Surprise Laptop

OTHER: Bionare® Cool Mist Humidifier; Microban® All Weather Reinforced Hose; Thomasville® Furniture; Deciguard AB Ear Plugs; Bauer® 5000 Helmet; Aquatic Whirlpools; Miller Paint Interior Paint; QVC® Collapsible 40-Can Cooler; Holmes Foot Buddy™ Foot Warmer, Blue Mountain Wall Coverings, California Paints®, EHC AMRail Escalator Handrails, Dupont™ Air Filters, Durelle™ Carpet Cushions, Advanta One Laminate Floors, San Luis Blankets, J Cloth® towels, JERMEX mops

in the marine environment." Six Finnish public authorities also issued a statement urging consumers to not use certain anti-bacterial chemicals, stating they are unnecessary and that their growing use increases the risk of spreading antibiotic resistance in microbial populations. The joint statement, also issued in 2000, stated, "Even Finnish hospitals don't use such chemicals for routine cleaning operations. In households we see more disadvantages than advantages." That same year, soap and detergent manufacturers in Europe agreed to a ban on any increase in its use over 1998 levels. The following year, German environment minister Jurgen Trittin called on consumers to not use cleaning agents containing anti-bacterial agents and on industry to stop marketing and advertising the antibacterial qualities of their products, calling their use in households, "superfluous and risky." He also demanded that industry stop suggesting to consumers that they are "surrounded by enemy germs which they had to fight aggressively."

Alternatives to Triclosan

When used in hospitals and other health care settings, or for persons with weakened immune systems, triclosan represents an important health care and sanitary tool. But outside of these settings, it is unnecessary, and the constant exposure to triclosan becomes a health and environmental hazard. The best solution to preventing infections is good old soap and water. Here are some guidelines on keeping clean without antimicrobials:

- Wash hands frequently and thoroughly. Regular soaps lower the surface tension of water, and thus wash away unwanted bacteria. Lather hands for at least 10 to 15 seconds and then rinse off in warm water. It is important to wash hands often, especially when handling food, before eating, after going to the bathroom, and when someone in your house is sick.
- Dry hands with a clean towel to help brush off any germs that did not get washed down the drain
- Wash surfaces that come in contact with food with a detergent and water
- Wash children's hands and toys regularly to prevent infection

Because triclosan has become so ubiquitous in soaps and toiletries, make sure to read all ingredients when buying these products (also refer to the above list of products containing triclosan). There are also some essential oils that have antimicrobial properties, such as Australian tea tree oil, grapefruit seed extract, and pine oil.

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For a fully cited version of this article, contact Beyond Pesticides.

Lessons of the West Nile Virus Response

After five years, what have we learned?

By Shawnee Hoover and Jay Feldman

It was the Tuesday after Labor Day September 1999 and an urgent call came into the Beyond Pesticides office from NBC-TV. The reporter wanted to know what we thought about New York City's response to the West Nile virus (WNv) outbreak. Would we be willing to debate a city public health official? The pesticide spray planes had taken to the air and spray trucks to the streets and the city's residents were being doused with malathion, a controversial neurotoxic pesticide. A quiet storm fell over the environmental and public health community as people wondered whether this was a reasonable use of a toxic pesticide. The death of three people that weekend was attributed to the virus.

Misleading hazard information

Immediately, Beyond Pesticides raised concerns about exposing the entire population to pesticides, while also recognizing the public health threat of the virus and need to respond. We issued warnings for people to stay out of the spray, bring toys inside, close windows, and turn off air conditioners. We disclosed what the scientific literature says about the hazards of malathion.

In speaking only to the public's fear of the virus, Mayor Rudolph Giuliani rejected the hazards of spraying, saying, "There's no point in not spraying, because there's no harm in spraying. So even if we're overdoing it, there's no risk to anyone in overdoing it." The mayor's statement represented to Beyond Pesticides and local environmentalists a long road ahead in countering misleading messages about the public health threat of pesticide exposure and the viability of alternatives.

Putting WNv in perspective

As information filtered out over the following months, it became clear that WNv, although a serious concern, was not the apocalypse it was portrayed to be. Studies emerging from the epicenter of the New York City borough of Queens showed that less than 12 percent, or 134, of the estimated 1,200 people infected with the virus displayed symptoms. For the elderly or infirm, rates of serious illness were higher.[1] The Centers for Disease Control (CDC) would soon conclude that roughly 80 to 90 percent of those bitten by an infected mosquito will not show symptoms, 20 percent will exhibit mild flu-like symptoms, and less than one percent will experience serious illness.[2] Those estimates still hold today.

An irony quickly materialized. The same people who were at highest risk for the worst disease symptoms, the elderly and people with compromised immune and nervous systems, were also at highest health risk from exposure to pesticides. It was also discovered that the mayor had no money budgeted for the city's integrated pest management (IPM) mosquito management program, allowing mosquito breeding sites to proliferate unchecked. However, people continued to die and by the time mosquito season ended in October the number of deaths was up to seven.

Outraged by the city's negligence in exposing the public to hazardous pesticides and having no effective mosquito management plan, the No Spray Coalition, a group of local organizations and activists, filed a lawsuit, joined by Beyond Pesticides, that cited violations of the Clean Water Act and spray drift.[3] A mass die-off of Long Island Sound lobsters in 1999 after the spraying for WNv prompted fishermen to sue the city for damages.[4] Both cases are still before the court today.

Shifting away from toxic sprays

The next season brought with it examples of some localities applying basic IPM principles and trying to limit broadcast spraying, such as Nassau County, NY that had abandoned its spray-now-ask-questions-later approach. After tense meetings and a court challenge, receptive managers began to dialogue with community groups and embraced the idea of curtailing spraying techniques in favor of prevention, monitoring, and targeted spraying, only if necessary.

Noted entomologist David Pimentel, PhD of Cornell University and others raised doubts about the effectiveness of mosquito sprays, warning that 99 percent of the spray from a truck would fail to hit the target adult mosquito. It quickly became clear that

prevention and personal protection was key. The CDC concluded that, "Adulticiding, the application of chemicals to kill adult mosquitoes by ground or aerial applications, is usually the least efficient mosquito control technique."[5] In addition, decision makers were informed that mosquitoes develop resistance to pesticides, which undermines the spray approach.

WNv in the second year had made its way to 13 states up and down the east coast. The experience of New York continued to play itself out. Communities and health care providers in Connecticut organized around the hazards of pesticide spraying and helped state officials adopt a WNv plan with a tiered structure that restricted broadcast spraying.

Beyond Pesticides published its *Public Health Mosquito Management Strategy* and built grassroots alliances, and in 2003 formed the national *Alliance for Informed Mosquito Management* (AIMM) with 40 organizations and activists representing 24 states and growing. Its mission is to advocate for the adoption of safer, preventive and least toxic methods of managing mosquitoes and the threats of mosquito-borne diseases. (See page 21).

Bright spots

Over the years, a number of localities have instituted preventive mosquito management and experienced fewer human cases of WNv as well as little or no public exposure to pesticides. In 2002, Washington, D.C. designed a WNv response plan focused on prevention (larval control), elimination of breeding sites, and public education. D.C. had to vigorously defend its policy against opposing neighboring states and a fearful public. WNv cases in D.C. dropped from 34 in 2002 to 3 in 2003 and the District emerged as a model.

In 2003, the City Council of Lyndhurst, Ohio adopted landmark legislation that banned all spraying for WNv. In an insightful and informed ordinance, the city officially recognized the hazards of pesticides and the lack of efficacy associated with spraying, and simply prohibited spraying. Without spraying, the rates of WNv illness did not skyrocket, as some had predicted. In fact, WNv illness was less common in Lyndhurst than in other parts of Cuyahoga County.

Continuing problems

Today, members of AIMM continue to receive reports and witness firsthand poor mosquito management practices. Across the country Beyond Pesticides gets reports of truck spraying or fogging in the presence of children, people being sprayed while in parks or outside their homes, and weekly scheduled sprays with little mind to the actual presence of the virus, time of day or cold weather conditions that render the sprays worthless. Spraying over waterways, which can harm fish and other aquatic species, continues despite label prohibitions. Perhaps worst of all, applicators often disregard designated no-spray zones, resulting in tainted organic crops, mass bee kills, and exposure of vulnerable residents who opted out of the spray program.

Too many mosquito managers nationwide are still refusing to bring their management methods up to date. In 2004, people in parts of Colorado, Virginia and Texas reported aerial spraying of naled (Dibrom), the only adulticide whose label reads, "Do not breathe vapor or spray mist. Causes irreversible eye and skin damage," and is listed as a Class 1, highly toxic pesticide by the U.S. Environmental Protection Agency (EPA). Others in Kentucky and parts of Ohio and Illinois faced the spraying of chlorpyrifos (Mosquitomist) in residential neighborhoods, despite the withdrawal of the product from the residential use market due to its excessive risks to children.

Misinformation about the safety of the pesticides or the deadliness of WNv is also still rampant. Little has changed since the U.S. Government Accountability Office (GAO), the watchdog arm of Congress, concluded in 1997 that, "The general public receives limited and misleading information on pesticide hazards" and is misled on pesticide safety by statements characterizing pesticides as "safe" or "harmless."[6]

Local officials from South Dakota to Texas, Illinois to California, are constantly quoted in the press with pesticide safety claims that are illegal for manufacturers or distributors. Phrases like "safe as table salt" and "made from chrysanthemums" mislead the public and inflame tensions with health advocates. A recent quote from the Harris County, Texas director of mosquito control about naled illustrates this point: "All insecticides are toxic," he said. "If you stick your head in a barrel there'll be an impact, but not otherwise."[7]

What do we know about the pesticides typically used

The truth is people do get sick from ultra low volume (ULV) mosquito sprays. In New York in 2000, more people got sick from the pesticide spraying than from the virus. In 2003, the CDC reviewed poisoning reports due to WNv spraying from the only nine states in the country that collect such data (two of which did not spray for WNv), and found 262 cases. Advocates of spraying use this as evidence that the sprays do not harm *enough* people. Almost 75 percent of the reported poisonings were due mostly to malathion. The majority of cases resulted in respiratory (66%) and neurological (61%) reactions.[8]

Pesticide poisonings in the U.S. are not well tracked and are commonly misdiagnosed, unreported, and severely underestimated. Physicians receive little training on identifying

poisonings and even when correctly diagnosed, rarely are they reported to authorities. EPA recognizes that poisonings are underreported and that the lack of national data on the extent of pesticide illnesses is a problem.[9] It is therefore wholly imprudent for public officials to dismiss the hazards of broadcast spraying and the need for safer practices simply because pesticide poisonings are not making headlines.

Organophosphates (OPs), which include malathion (Fyfanon), naled (Dibrom) and chlorpyrifos (Mosquitomist), are in the highest toxicity class of pesticides. They work by inhibiting the acetylcholinesterase (AchE) enzyme and can affect the central nervous, cardiovascular and respiratory systems. OP fly and mosquito sprays have been repeatedly cited for causing acute illness in both humans and wildlife. In one case, mosquito spraying near a ballfield drifted in the air and resulted in the hospitalization of 37 ballplayers, ages 15 and 16, and spectators suffering from dizziness, nausea, abdominal cramps and other symptoms of OP poisoning. Another case of spraying led to the death of 2,000 fish on the banks of Staten Island.[10]

Acute poisoning from synthetic pyrethroids, such as sumithrin (Anvil) or resmethrin (Scourge), is not as common as it is with OPs, though it can trigger asthma and other respiratory reactions. On the other hand, studies have linked pyrethroids to chronic illnesses such as endocrine disruption, cancer and birth defects.[10] EPA does not currently assess endocrine disruption potential of chemicals, although required to by law.

Studies show endocrine disruptors in very small doses, such as those in ultra low volume (ULV) mosquito sprays, can cause neurological, developmental and reproductive health problems in both humans and animals. This rules out the "dose makes the poison" argument for the safety of ULV pesticides and warrants greater precautionary approaches.

The next chapter

The WNv story is a microcosm of the larger pest management challenge. As we have seen over the years, when WNv hits, from New York in 1999 to Arizona in 2004, panic ensues and the response is usually to rely on broadcast pesticide spraying – not just once but continually – rather than quickly going into a preventive mode, eliminating breeding sites and addressing the roots of the problem.

Public officials assume that because pesticides are readily available and registered by EPA they are safe. People are not always warned against exposure and not notified when they may be sprayed. Vulnerable population groups are disregarded, applicators often not well protected, and voices of opposition from informed residents and public interest groups are ignored. Mosquito control has been synonymous with spray trucks and pesticides for more than 50 years and, as a result, much of the public expects and demands spraying.

But that is not the whole story. Pesticide spraying for WNv has also been a catalyst in raising awareness among community members of the hazards of pesticides and their pervasiveness in our lives. Many individuals across the country have been moved to action. They have educated themselves and others and have forced a change in their community – not just in mosquito management, but in other areas of community pest management. At the same time, many local decision makers – mayors, city council members, health officials and mosquito managers – have pursued a safe and effective plan in the face of the difficult WNv challenge. They have rejected broadcast spraying for prevention, rejected unilateral action for public involvement, and rejected toxic pesticides for non-toxic alternatives and practices.

These officials, like their community activist counterparts, are to be commended for not only protecting the public from WNv and exposure to pesticides, but also for effecting a cultural shift that rejects toxic pesticide use and embraces integrated pest management. This shift sets an important tone and approach that can be used throughout communities – safely and sustainably managing our schools, parks, libraries, hospitals, rights-of-way, public buildings, and public lands.

Endnotes

1 New York City Health Department. 2001. West Nile Virus Surveillance and Control: An Update for Health Care Providers. http://www.nyc.gov/html/doh/pdf/chi/chi20-2.pdf. (accessed 11/03/04)

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National Alliance for Informed Mosquito Management

Problem

In this time of emerging mosquito-borne diseases and of greater understanding of the negative impacts of pesticides, we are dealing with two public health issues. One is the threat of mosquito-borne diseases, such as West Nile virus (WNv), and the other is the wide scale exposure of the public to hazardous pesticides used to combat mosquito-borne threats. In too many municipalities across the country, there are inadequate mosquito management policies in place. In some cases, a coherent management plan does not even exist. As a result, there is often a heavy reliance on mass spraying of pesticides to kill adult mosquitoes. This method of mosquito management is widely considered by experts to be the least effective and most risky response to this important public health concern. There is no credible evidence that spraying pesticides used to kill adult mosquitoes, also known as adulticides, reduce or prevent WNv incidents or illnesses. In fact, communities that do not generally use adulticides as part of their mosquito control often have lower cases of WNv than their neighbors that do. Pesticides used in the battle against mosquitoes have been linked to numerous adverse health effects including asthma and respiratory problems, dermatological reactions, endocrine disruption, chemical sensitivities, and cancer. Adulticides can also be harmful or fatal to non-target wildlife. There are much safer and more effective ways to manage mosquitoes and protect the public from mosquito-borne illnesses like WNv than the spraying of adulticides.

Mission

The national Alliance for Informed Mosquito Management (AIMM) is a group of organizations and individuals working in their communities to protect the public and the environment from unnecessary exposure to hazardous pesticides used in the attempt to control mosquito-borne diseases. By working with communities, experts, and public officials, the Alliance informs about the hazards of pesticides and calls for the adoption of safer, least-toxic methods of managing mosquitoes and the threats of mosquito-borne diseases like West Nile virus (WNv).

AIMM Members*

Beyond Pesticides
B.U.R.N.T., TN
Californians For Alternatives to Toxics, CA
Citizens Campaign for the Environment, NY
Citizens for Pesticide Reform, CO
Coalition Against Pesticide Damages, CO
Colorado Pesticide Network, CO
Concerned Citizens for Safer Mosquito Control, TX
Gateway Green Alliance, MO
Informed Choices, LA
Jack B. Richman Environmental Coalition, IL
Maine Environmental Policy Institute, ME
Maryland Pesticide Network, MD
National Center for Environmental Health Strategies, NJ
New Jersey Environmental Federation, NJ
New York Public Interest Research Group, NY
No Spray Nashville, TN
Northwest Coalition for Alternatives to Pesticides, OR
Ohio Coalition Against the Misuse of Pesticides, OH
Pennsylvania Clean Water Action, PA
People Against Chemical Contamination, MI
Safer Pest Control Project, IL
Sierra Club, National Headquarters, CA
Texans for Alternatives to Pesticides, TX
Toxics Action Center, MA
Vermont Public Interest Research Group; VT
Washington Toxics Coalition, WA
Wyoming Outdoor Council, WY
Xerces Society for Invertebrate Conservation, OR

**Individual members not listed.*

Platform

Reduce WNv Incidence. AIMM promotes rational, effective, least-toxic mosquito management techniques that simultaneously reduce the incidence of WNv and protect the public and the environment from exposure to hazardous pesticides. There is no credible evidence that spraying pesticides meant to kill adult mosquitoes actually reduces or prevents WNv-related incidents or illnesses. Therefore, their use results in the unwarranted exposure of the public and the environment to hazardous pesticides.

Practice Effective Mosquito Management. AIMM insists on the adoption of effective, transparent mosquito management strategies that focus on public education, monitoring and surveillance, source reduction and least-toxic larval control. Targeting adult mosquitoes with pesticides kills only a negligible percentage of mosquitoes, does not affect mosquito-breeding habitat, can result in pesticide resistance, and is widely acknowledged as the least effective strategy to reduce mosquito populations.

Protect Human Health and the Environment. AIMM advocates for targeted mosquito management practices that cause the least amount of non-target exposure. Pesticides can affect much more than just the target pest. They are linked to adverse health effects including asthma, endocrine disruption, and cancer, and can be harmful or fatal to wildlife, such as bees and other beneficial insects, fish, birds and aquatic ecosystems. Very little is known about long-term effects of low-dose, cumulative, combined, or synergistic exposure to pesticides.

Defend Vulnerable Groups. AIMM demands the protection of vulnerable populations unfairly endangered by the use of adulticidal pesticides. The elderly, children, fetuses, and people with respiratory conditions, immune deficiencies and chemical sensitivities have a greater risk of pesticide poisoning and suffer disproportionately from the spraying of adulticides. The welfare of endangered or susceptible wildlife, pets, and organic crops must also be protected.

Safeguard Human Rights. AIMM supports each person's human right not to be exposed to pesticides unwillingly or without their knowledge and to protect his or her health and well-being by exercising a precautionary approach to pesticide exposure. Therefore, members of the community must be given the opportunity to exempt themselves from exposure to pesticide sprays and pesticide drift.

Ensure the Public's Right-To-Know. AIMM insists that, if pesticides are to be used, decision makers involve and fully inform the public in advance and maintain accessible public spray records. The public has a right to know when and where spraying will occur, what pesticides will be used, the potential hazards of the pesticides, ways to avoid exposure, and whom to contact in case of illness from exposure.

This platform is based on the fundamental fact that there is no guarantee or consensus, either scientific or otherwise, that spraying adulticidal pesticides reduces the incidence of WNv nor that low-dose exposure to pesticides is safe from causing acute or chronic harm to human health and the environment.

Overarching Goals

Adoption of Integrated Mosquito Management (IMM). Adopt local plans that protect the public from mosquito-borne disease and pesticide exposure by developing and implementing safe, effective, and least-toxic integrated mosquito management (IMM) strategies. Effective IMM strategies emphasize public education, monitoring and surveillance, source reduction and prevention, least-toxic larval treatments, biological and mechanical controls. Only after exhausting these strategies is it acceptable to consider the targeted use of adulticides.

AIMM promotes least-toxic mosquito management techniques that reduce WNv and protect the public from exposure to pesticides.

Support for Sustainable Action. Empower communities, experts, and decision makers to work together to develop and implement a local WNv Response Plan that stipulates effective IMM methods and criteria. Quality response plans ensure that: (1) least-toxic and preventive methods are employed; (2) progressive steps with pre-specified actions and criteria are taken; and, (3) the public is adequately notified, advised and/or involved. Effective response plans include consultation with a local task force that involves community representatives and experts alongside government, and mechanisms to monitor even subtle pesticide-related incidents to ensure that public health and environmental problems are not exacerbated.

Ensure the Public's Right-To-Know. Ensure that people have a right to know the mosquito management practices in their community and the criteria that might trigger the spraying of adulticides. Should adulticides be used, members of the community must be notified of when, where and what pesticides may be used and how to avoid exposure prior to application and be given the opportunity to be exempt from being sprayed. The employment of buffer zones to protect from pesticidal drift is critical.

For more information contact: Shawnee Hoover, Beyond Pesticides, 202-543-5450, email: shoover@beyondpesticides.org

5 Steps to Stop the Spraying

You just found out your community is being sprayed by hazardous pesticides for mosquito control. You want to do something. Where do you begin? Follow these 5 steps and you will be on the way to getting a safer, more effective and sustainable approach to mosquito management implemented in your community.

1 Learn About the Spraying. As a first step, find out the basic details of the spray program: Who, what, when, where, why and how. Who is spraying? Is it the department of health or agriculture, or an abatement district? Who orders the spraying - the city, the county or the mayor? Who makes the decisions - the department of health or a board of supervisors? Why are they spraying? What criteria are being used that would trigger the spraying of adulticides (pesticides used for adult mosquitoes)? Is there a schedule of exactly when and where the spraying will take place? How is the agency informing you and your community of spraying activity? Is there a list of people who choose not to be sprayed (an opt-out list)?

2 Know the Pesticides. The second step involves the actual chemicals being used. Which adulticide is being used? You may be given either the name of the product or the active ingredient. For example, Anvil 10+10 is a product, sumithrin is the active ingredient. Look up the chemical on the internet or call a local pesticide organization or Beyond Pesticides. Next, learn the basic points of the chemical's toxicity and its known and unknown effects on human health and the environment.

3 Research Alternatives. If your local government is dependent on chemical mosquito control, you will need to offer them effective alternatives. Effective mosquito management alternatives are easy to learn, such as reducing breeding areas, focusing on larval control, and taking simple measures to avoid biting mosquitoes. Pay particular attention to what alternatives might be most needed in your community. Use the models of other communities that practice effective mosquito management techniques to battle mosquitoes without the use of adulticides.

4 Gather Support. Working with others is critical to success. Contact local environmental or pesticide groups. Talk to your friends and neighbors or local co-ops that might support you. Try also cancer groups, asthma groups, PTAs, homeowner groups, organic farmers, fishing and beekeeper associations, and neighborhood coalitions. Contact local professionals, such as doctors and university professors, and find out their views on mosquito spraying.

5 Present Your Case. After you have gathered a base of support, you are ready to start getting your message out. Here are some ideas that have worked for others:

- Start an e-mail listserve with those who are equally concerned.
- Put up posters and hand out flyers in local gathering places to inform community members about the spraying and the dangers related to it.
- Gather signatures from local residents who do not want their property sprayed.
- Gather expert signatures and allies from concerned professionals in the local medical community or university.
- Write a position statement with others in your community.
- Contact the media to publicize your message by writing letters to the editor, opinion editorials, or meeting with the editorial board of your local news source.
- Organize a public forum with key guest speakers or request a public hearing to openly discuss your community's options for mosquito management with decision makers.

This information was adapted from a more detailed version of *5 Steps to Stop the Spraying*. For a wealth of practical tools and resources to help you stop the spraying in your community and for more details on how to present your case, visit the Beyond Pesticides website: www.beyondpesticides.org/mosquito or contact us at 202-543-5450.

by Meghan Taylor

"...documents the alarming presence of toxic chemicals in our world, and the implications to our young."

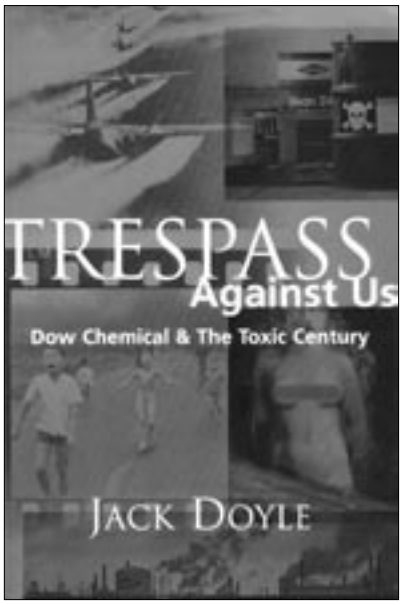
Our Children at Risk

Grassroots Environmental Education, Port Washington, NY. (c)2004, 30 minutes, $14.95 suggested donation.

Our Children at Risk is a well-done video that documents the alarming presence of toxic chemicals in our world, and the implications to our young. It addresses the issue of toxic chemicals and children by answering three important questions: why are hazardous chemicals in our environment? Why are children uniquely vulnerable to this presence? And what can we do about it? By talking with notable researchers and authors in the toxics field, including Philip Landrigan, MD, Elizabeth Guillette, PhD, Frederica Perera, PhD and John Wargo, PhD, the documentary explains, in a language that is easy to grasp, the dire need to protect children from exposure, and the way to do it.

The presence of harmful chemicals in the environment is made explicitly clear when the viewer hears a mother's first-hand account of her family's exposure to pesticides, and the resulting symptoms and emotional difficulties of the entire family. Striking elements of current pesticide research are then presented. Among the researchers featured, Dr. Landrigan talks in easy-to-understand terms about children's specific vulnerability to chemicals, drawing from his own extensive body of research. Dr. Guillette's work is also highlighted, showing fascinating real-life comparisons of behavior between exposed and unexposed children.

The video transitions from a fact-filled presentation to a call for action, with specific steps that parents can take. It empowers parents by discussing what they can do to protect their children, beginning in their own home and learning where exposures need to be decreased, and making healthful choices that will benefit their children. It also broadens the perspective to action on a community level, and how a parent can create change in society. It emphasizes that parents, with all of their love and care for their children, are a powerful force in our culture. Patti Wood of Grassroots Environmental Education, interviewed in the documentary, eloquently encourages, "If anyone can drive change on these important exposure issues, this group can."



"...well-researched and beautifully written..."

Trespass Against Us: Dow Chemical & The Toxic Century

Jack Doyle. Common Courage Press, Monroe, ME. © 2004, 486 pages, $24.95.

Jack Doyle presents a detailed history of Dow Chemical, the giant chemical manufacturer that has prospered for over a century. Dow Chemical was begun by Herbert Dow. He arrived in Midland, MI for a second try at success after his first business failed in Ohio. From these inauspicious beginnings, Mr. Doyle takes the reader on a journey showing how Dow evolved to the giant it has become that pervades our culture and existence, and contaminates our bodies, with its many products designed to "improve the quality of life." Pesticides, plastics, solvents and more: each has its own history and controversy. Mr. Doyle writes of chemicals, products, marketing, and the cost to human health and the environment.

The author's superior research and his inclusion of personal accounts, anecdotes, communications, and hard scientific facts provide a strong testimony to the dirty deeds and the chemical disasters involving Dow: from its "accident" at Bhopal by its Union Carbide company to Agent Orange, from napalm to plutonium, and from dioxin to greenwashing. This account is well-researched and beautifully written. Its message is vital: the benefits of the precautionary principle are essential. As regulation does not currently include such a measure to protect public health and our environment, it is crucial to watch the corporate role in chemical manufacturing.

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RESOURCES

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❑ 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
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Testimony

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❑ 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
❑ Safer Schools $5.00
❑ Healthy Hospitals $5.00
❑ Least-Toxic Control of Pests $6.00
❑ Community Organizing Toolkit $12.00
❑ Model Pesticide Ordinance, Model School Pest Management Policy, Model State School Pesticide Law $5.00 each
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Your support of Beyond Pesticides is crucial. Without you, we wouldn't exist. We have a tough battle ahead, and we need your help.

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2 **Support Beyond Pesticides by making a direct donation.** You should have already received our end of year appeal mailing in your mailbox or will be receiving it very soon.

3 **Include Beyond Pesticides in your bequest.** A gift through your will is a thoughtful and powerful way to support issues that are important to you and your family.

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