

Pesticides and You

News from Beyond Pesticides, formerly the National Coalition Against the Misuse of Pesticides

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The Future of Organics

**Organic values, farmer enthusiasm, rural development
and consumer leadership**

Silent Summer: Georgia community organizes against pesticide manufacturing waste

- **Bed Bugs: Back with a Vengeance**
- **Fungi To The Rescue: Biopesticide derived from mold has promise as a greener method for eradicating unwanted insects**

Should We Have to Fight EPA on Hexavalent Chromium? A case study on the politics of EPA's pesticide regulation

Some battles just shouldn't have to be fought. When it comes to Chromium VI, the chemical Erin Brockovich successfully battled, EPA expending taxpayer resources to consider its use in a wood preservative is an expensive waste.

The manufacturing phase-out of CCA-treated (chromated copper arsenic) wood in January 2004 for residential use eliminated a substantial amount of arsenic and 64 million pounds of hexavalent chromium use as a wood preservative in the U.S. Many in the wood preserving industry saw this as an opportunity to move away from the more hazardous materials used in wood preservation—at least for residential use. So, Osmose, Inc., one of the nation's largest wood preservers, notified EPA that it was voluntarily canceling its registration for acid copper chromate (ACC), containing hexavalent chromium VI. Not so for all in the industry. A company called Forest Products Research Laboratory (FPRL) [not, but maybe, intended to be confused with USDA's Forest Products Laboratory in Madison, Wisconsin] applied to EPA to register its ACC product.

EPA could have said that ACC did not constitute a "reasonable risk," given the availability and new economics of safer alternative wood preservatives. Instead, the agency in May 2006 granted FPRL a registration for commercial uses. This move epitomizes the Office of Pesticide Programs' failed implementation of the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA) in allowing the unnecessary use of harmful chemicals. The situation, so outrageous, enabled Beyond Pesticides and a coalition of nearly a hundred groups to join forces with Osmose and another wood preserver, Chemical Specialties, Inc. (CSI).

Human testing without societal benefit

In Fall 2006, EPA began considering FPRL's application to expand its ACC registration to include residential uses, allowing the chemical to be used on decks and playground equipment. The company presented EPA with human test data to justify its safety claim about the chemical's widespread use. With that I went over to a Human Studies Review Board (HSRB) hearing, as it deliberated the adequacy of the human study protocol—did the study have enough people who had their skin "voluntarily" wiped with the chemical (a known carcinogen) and were the reactions serious enough. EPA officials testified that the study was basically sound, suggesting minor reinterpretation of the data.

When asked about the basic threshold issue of whether this chemical has social benefit (and therefore was it ethical to test on humans and should we be spending taxpayers' money on this harmful charade), EPA said, in effect, that the manufacturer believes it has value and wood preservation is important. When I testified, I argued that HSRB has a duty, before even considering human test data to address the basic threshold issue of whether the chemical

in question has societal benefit. EPA had provided the board with no analysis of the wood preservation market, the chemical uses, the alternatives, or the economic impact. There was no discussion of the 2002 CCA phase-out decision, the market adjustment to other chemicals and materials and the fact that this chemical was not needed in society and its use would only serve to benefit the chromium industry, FPRL, and perhaps toxic waste generators.

Politicizing science

So, with our backs to the wall and the press focused on Iraq and Scooter Libby, we started in earnest educating members of Congress. Politicizing science is what EPA understands best. Since risk assessments are perpetually manipulated by the agency to justify proposals with faulty risk mitigation measures, it is public pressure and politics, rarely science, that always tilt the scales in favor of public health and the environment. Then EPA issued its December 21 memo, manipulating its risk numbers to support the position that yes, indeed, risks of ACC use were "acceptable." A close look at the memo finds that the dermal risk factor used was, without explanation, weaker by 50 times from a previous analysis, that it did not take into account intraspecies variability and incorporate a 10-fold margin of safety, nor did it account for the wide uncertainty in the ACC residues on treated wood. We have asked EPA to rescind the memo as bad and misleading science.

However, shortly thereafter on January 8, 2007, EPA reversed itself and announced its intent to deny the registration for the residential use of ACC, and said it will evaluate the continued commercial uses of ACC at the same time that it conducts its registration eligibility decision (RED) on CCA. The latest RED review has been ongoing for almost a decade. EPA actually began evaluating CCA under its Special Review program in 1978 and found in 1986 that it and the other heavy-duty wood preservatives pentachlorophenol and creosote had elevated risk characteristics but would remain on the market because there were no satisfactory alternatives—a decision that remains in place for the most part today but is outdated because of new technologies.

EPA's ACC decision, it told us in a letter, is based on the exposure of workers in the wood treatment process, wood product manufacturing, transport and retail sale, as well as public exposure to treated wood and ultimately hazardous waste treatment. It would be nice if EPA would apply some of this same reasoning to the ongoing commercial uses of ACC, CCA, pentachlorophenol and creosote. Clearly, we need more politics for that to happen.



- Jay Feldman is executive director of Beyond Pesticides

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Ensuring a Toxics-Free Lawn

I have just purchased a house in Madison, Wisconsin. I know that the previous owners applied lawn chemicals, maybe from TruGreen. The last application was at the beginning of May, about three months ago. We've had a couple of very hard rains this season and normal thunderstorms over the summer. I will move with my dog by the beginning of September and I am worried about exposure to any residue. I think they may have used chemicals for years.

I have several questions: How long do these chemicals stay in the soil? Where can I have the soil tested? How can I rid the soil of any chemicals that are left? Are there chemicals in the blades of grass?

Thanks for your help!
Holly
Madison, Wisconsin

Hi Holly,

Thank you for contacting *Beyond Pesticides* with your question regarding chemical residue in your lawn. Different chemicals have different breakdown times and move at different rates through various types of soil: sandy, silty, etc. In addition, products have active ingredient(s), so-called inert ingredient(s), breakdown products (what they degrade into), and sometimes contaminants.

The time it takes for products to degrade in your soil depends on many factors, including rainfall as you have mentioned, soil structure, and the specific chemical characteristics. Since you mentioned TruGreen ChemLawn, they typically broadcast a "weed and feed" type product that can contain the active ingredients 2,4-D, and Mecoprop (MCP). Roundup, is also typically used for weed control and its active ingredient is glyphosate. Glyphosate and 2,4 D are two of the most commonly used active ingredients, according to the EPA's latest available usage data.

Fact sheets on all of these pesticides may be found in our new *Pesticide Gateway* on Hazards and Safe Pest Management on our website (www.beyondpesticides.org) by clicking on "Pesticide Gateway" under the *Info Services* tab at the top of the page to see. Click on "2,4-D" and "glyphosate" to view each fact sheet and links to more information.

Pesticide degradation in soil is indicated in a term called soil half-life, the time it takes for half of the chemical to degrade. 2,4-D's soil half-life is 10 days and MCP's is 21 days. The "inerts" are a trade secret, so no information is available on those. Unfortunately, both 2,4-D and MCP have been found to contain TCDD, a persistent and extremely toxic member of the dioxin family, which can cause cancer, birth defects, reproductive effects, liver damage and chloracne. Glyphosate's half life ranges from 47 days to 174 days, so that chemical may still exist in your soil.

To really determine if chemical residues still persist, you will want to contact a soil analytical laboratory for instructions on taking a pesticide residue sample. Contact your state health department or state health lab. There are many private labs around the country, some of which test for pesticide residues. For information on what to look for in a lab, click on the "Find a Lab" link under the "Emergencies" tab on our site.

To reduce potential exposure and prevent tracking residues inside, spread a layer of compost over the grass. Also, you may want to consider that residues have probably been tracked indoors. In the absence of soil, sunlight and water many chemicals do not break down readily. 2,4-D, for example, has been measured in household dust, surfaces and in carpet. Consider having the carpets steam-cleaned, and thoroughly clean all surfaces..

For more tips on chemical-free lawns, click on "Lawns and Landscapes" under the "Issues" tab on our website.





Canadian Pesticide Bylaws and U.S. Preemption

Can you please provide me with the most up-to-date number of Canadian municipalities that have enacted a pesticide bylaw as well as the link to which ones have the bylaw? I was searching the web, but the website says only 70. I had seen another site which says 122. Please let me know as we are presenting to our council really soon.

Michelle
Kelowna, British Columbia

Dear Michelle,
It's wonderful to hear from a pesticide-free advocate in Canada! As I'm sure you're well aware, Canada has been quite successful in passing municipal bylaws prohibiting the cosmetic use of pesticides on private lawns. According to a list compiled from information on Statistics Canada's website, there are currently 125 municipal bylaws in place, and another eight are currently being drafted. Those passed include Québec's province-wide Pesticide Management Code. The result of these bylaws is that 38% of all Canadians, or 12 million people, are protected from cosmetic lawn pesticides. The complete list is available by visiting the "Lawns and Landscapes" page under the "Issues" tab on our website, clicking on "Tools for Change" in the left-hand column, then on "Canadian Bylaws Banning Pesticide Use," and then Mike's Christie's "Private Property Pesticide Bylaws in Canada."
NOTE: For our U.S. readers, municipal bylaws such as those found in Canada

are difficult to enact in most parts of the United States. In all but nine states, local pesticide ordinances that restrict private homeowner use of pesticides are prohibited by preemption laws, which were successfully passed by the pesticide lobby. In short, local governments are preempted or prevented from passing pesticide laws that are stricter than state laws. States that are free to restrict pesticide use on private property are: Alaska, Hawaii, Maine, Maryland, Nevada, South Dakota, Utah, Vermont, Wyoming and the District of Columbia. To view the complete list, along with Beyond Pesticides' State Preemption Fact Sheet, visit www.beyondpesticides.org/lawn/factsheets/Preemption%20Factsheet.pdf. By contrast, Canadian municipalities have free rein to design their own requirements. Legally speaking, Canada's Pest Management Regulatory Agency says, "Cities, towns and municipalities may be authorized by provincial/territorial legislation to further regulate pesticide use, including use restrictions, based on local considerations within their jurisdictions."

But all hope is not lost. In lieu of local bylaws, some states have passed requirements for least toxic pest control for school buildings and grounds (integrated pest management and organic), posting pest management and organic, posting notification signs, registries of individuals who request prior notice of applications, automatic notification for abutting properties, or a combination of those. Municipalities in the U.S. are also passing ordinances and policies for pesticide-free parks and organic care of their municipal-owned properties, and even voluntary citizen bans, which is legal. For instance, fourteen towns have passed Pesticide-Free Parks bills, including four in California and four in New Jersey. Even more cities have passed Integrated Pest Management/Pesticide Reduction policies and programs.

For support in beginning your own local campaign for pesticide use reduction, our "Tools for Change" page includes a variety of helpful links under "How to Organize in Your Community." You can also join our Policy Workgroup by calling us.

Speak Your Mind!

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 daytime 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:

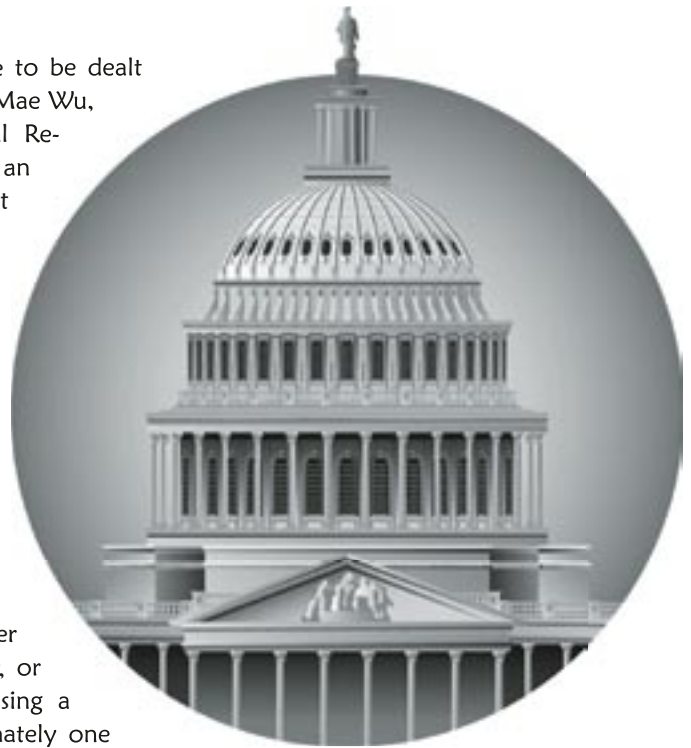
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Companies Drop Pesticidal Claim, Avoid Regulation of Nanoproducts

You may have heard this one before: It's only a pesticide if the company selling it says that it's a pesticide. Sound unbelievable? Well, it's true. The Environmental Protection Agency (EPA) has interpreted the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA) to allow products without pesticidal claims to escape regulatory review. Under EPA's new rules for regulating a large class of consumer items made with antimicrobial nanotech silver, referred to as nanosilver, nanotech pesticides will follow the same rules as conventional pesticides. In opting to drop pesticidal claims from their products, companies are avoiding EPA regulation and safety testing requirements for their products. For instance, the Sharper Image company, which until recently advertised products containing nanosilver (including socks) as anti-microbial, has dropped all such references from its marketing materials and will not fall under EPA's oversight. Environmental groups are taking note of this gap in nanosilver regulation. "It sounds like a major legal loophole and is probably

something that will have to be dealt with in the courts," said Mae Wu, a lawyer at the Natural Resources Defense Council, an environmental group that has been pushing EPA to regulate nanosilver. Other products with the new nanosilver include shoe liners, socks, toothpaste, pillows, food storage containers, bandages and air fresheners.

The term nanotechnology refers to research and technology that manipulates matter at the atomic, molecular, or macromolecular levels using a length scale of approximately one to one hundred nanometers in any dimension. A nanometer is one billionth of a meter, or around one ten-thousandth the diameter of a human hair. Nanotechnology allows certain materials to have different molecular organizations and properties because at their tiny size they have far more surface area relative to their mass than their larger counterparts. Silver, for instance, has been known for years for its biocidal properties in its bulk form, as well as for



its hazardous health effects. It is more efficient as nanoparticles. Nanosilver is the first form of nanotechnology to be scrutinized by EPA.

Take Action: Tell EPA Administrator Stephen Johnson (Johnson.Stephen@epa.gov) that all toxic chemicals should be reviewed and regulated for potential adverse effects and efficacy, regardless of whether the manufacturer makes pesticidal claims.

EPA Sued for Sidestepping Review of Pesticide Effects on Water

Six environmental groups have filed a lawsuit against the Environmental Protection Agency (EPA) for a decision that weakens the Clean Water Act (CWA) by deregulating the spraying of pesticides into the nation's waters. The groups filed the suit, *Baykeeper v. Johnson*, December 12, 2006, in the U.S. Court of Appeals for the Ninth Circuit to overturn a new rule, which re-defines the word "pollutant" to exclude pesticides. Of particular concern to the environmental groups are aerial spraying and other direct applications of pesticides to creeks, rivers and wetlands. Pesticide contamination of waterways from such sources would be allowed without agency oversight under the National Pollution Elimination Discharge System (NPDES) permit process of CWA. "Congress was quite clear in directing EPA to regulate pesticide pollution," said Deb Self, executive director of Baykeeper, one of the petitioning groups. "Rather than enforcing laws as Congress wrote them, once again the Bush administration has simply interpreted the law to suit its purposes." According to Beyond Pesticides, this EPA action allows the weaker and more generalized standards under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to trump the more stringent CWA standards. CWA uses a health-based standard known as maximum contamination levels to protect waterways and requires permits when chemicals are directly deposited into rivers, lakes and streams, while FIFRA uses a highly subjective risk assessment with no attention to the safest alternative. The pesticide lobby, led by CropLife America, has also filed suit in the Washington, DC Circuit Court in an attempt to have the case heard by a more conservative panel of judges.

EPA Says No to Wood with Chromium 6 for Backyard Use

On January 8, 2007, the Environmental Protection Agency announced that it will reject an industry bid to use acid copper chromate (ACC), which contains the known carcinogen hexavalent chromium and is commonly used as a wood preservative, for residential uses. Although environmentalists are pleased with the decision, some feel that EPA should have never placed itself in the position to consider the industry's bid. According to the Washington Post, industry groups petitioned EPA three years ago to use ACC to treat wood sold in hardware and home and garden stores. EPA decided to reject the bid after a scientific review concluded that the proposed residential uses of ACC would pose cancer and non-cancer risks of concern to workers during the manufacturing process and non-cancer risks to contractors and residential users. In addition to the health impacts, disposal of the ACC-treated wood carries a risk of soil and groundwater contamination. In July 2006, a collaboration of environmental groups, including Beyond Pesticides, wrote EPA expressing disappointment with the agency for approving Forest Products Research Laboratory's application to sell ACC for a number of industrial and building related uses. Again in December 2006, the groups submitted formal comments and petitioned EPA to cancel all uses of ACC.

Take Action: Contact EPA Administrator Stephen Johnson at 202-564-4700, Stephen.Johnson@epa.gov and urge him to cancel all registrations now in effect for ACC.

Judge Stops USDA on GE Seeds

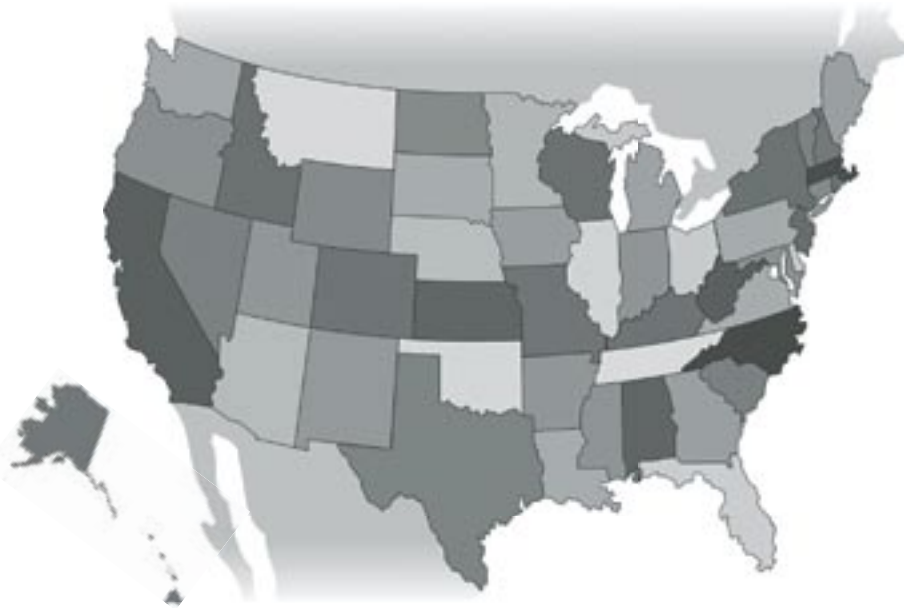
On February 13, a 9th Circuit U.S. District Court judge ruled in *Geertson Seedfarms v. Johanns* [C06-1075CRB (EDL)] that the United States Department of Agriculture (USDA) violated federal environmental law by failing to conduct an environmental impact statement (EIS) on genetically engineered (GE) alfalfa seeds before deregulating them in 2005. Ruling on a lawsuit brought by Center for Food Safety, Beyond Pesticides, Sierra Club, and farm groups, the court found that USDA did not adequately defend its decision to forgo an EIS on GE alfalfa seeds, primarily marketed by Monsanto as *Roundup Ready*, which are engineered with a gene that causes them to be resistant to the herbicide glyphosate. Among the plaintiffs' concerns are contamination and cross-pollination between GE and natural crops, which can occur at a distance of up to two miles. Andrew Kimbrell, executive director of the Center for Food Safety, said, "This is a major victory for farmers and the environment. Not only has a Federal Court recognized that USDA failed to consider the threats posed by GE alfalfa, but it has also questioned whether any agency...is looking at the cumulative impacts of GE crop approvals."

West African Plantation Workers Sue Dow and Others for Genocide

West African plantation workers are suing Dow Chemical, Shell, Amvac and Dole Food, claiming that the pesticide dibromochloropropane (DBCP) caused them to become sterile (*Akebo Abagninin, et al. v. Amvac Chemical Corporation, et al.*). DBCP, a soil fumigant sold under the brand names Nemagon and Fumazone, was first banned by the state of California and then by EPA 27 years ago because it causes sterility, physical deformities, cancer, and birth defects. The 668 plaintiffs, represented by the Metzger Law Group of Long Beach, CA, claim that the chemical companies and plantation owners broke international law and committed crimes against humanity by using a banned pesticide on a plantation in the Ivory Coast. The workers were never told about the hazards of DBCP,



nor given protective equipment. Half of the workers tested are sterile and many suffer from other physical injuries, as well. The suit is brought under the *Alien Tort Claims Act*, a federal statute that allows foreigners to seek redress in U.S. courts against U.S. corporations for wrongs committed abroad. The violations of international law are based on the *Convention Against Genocide and Crimes Against Humanity*. These companies have faced similar charges in the past regarding DBCP use on plantations in developing countries. In November 2004, thousands of banana workers in Costa Rica filed a lawsuit against a similar group of companies. Despite overwhelming evidence, no U.S. court has ever ordered one of these companies to pay compensation to the workers. For the most part, U.S. judges have argued that their courts are not the appropriate arenas for trying these cases, and only a very small percent of the rejected cases are re-filed in other countries. The complaint was filed in the Los Angeles Federal District Court. *View the lawsuit at: www.corporatecrimereporter.com/documents/DBCP.pdf.*



Common Antibacterial Agent Found To Be an Endocrine Disruptor at Low Levels

Canadian researchers have found yet another reason to choose good old soap and water over the majority of antibacterial personal care products on the market that contain the active ingredient triclosan. In addition to studies demonstrating that triclosan is linked to antibiotic resistance, breaks down into hazardous compounds, and does not work any better than regular soap and water, new data shows that it is also an endocrine disruptor. The study, published in the December 2006 issue of *Aquatic Toxicology* (Vol. 80, No. 3), shows that at environmentally relevant levels, triclosan interferes with the thyroid hormone in frogs, affecting the timing of metamorphosis in tadpoles. This study is the first demonstration of low-level impacts of triclosan on thyroid hormone function. The study, entitled "The Bactericidal Agent Triclosan Modulates Thyroid Hormone-Associated Gene Expression and Disrupts Postembryonic Anuran Development," shows that exposure to as little as 0.15 micrograms/L triclosan causes an earlier metamorphosis from tadpole to frog than normal, with effects on the tadpole brain and tail. Results of the study indicate that low levels of triclosan can potentially affect the human thyroid gland. The thyroid plays a role in development, body temperature and metabolism. "Frogs serve as a very sensitive sentinel species for chemicals that can actually disrupt thyroid hormone action," said University of Victoria molecular biologist Caren Helbing, Ph.D., one of the authors of study. "Triclosan at levels measured in our waterways can actually affect how thyroid hormones work in frogs."

Take Action: *The use of these antibacterial ingredients is unnecessary in the home, and constant exposure to them becomes a health and environmental hazard. Make sure you read all labels when buying soaps and other toiletry products, including cosmetics, to ensure that triclosan and its analog triclocarban are not included. Also be on the lookout for Microban and Irgasan, which can be other names for triclosan. Consult Beyond Pesticides' triclosan factsheet at www.beyondpesticides.org/gateway#triclosan for a list of products containing triclosan, including some that may surprise you, and for more detailed information on alternatives to these chemicals.*

NJ Groups Defeat Plan to Lift Gypsy Moth Spray Ban

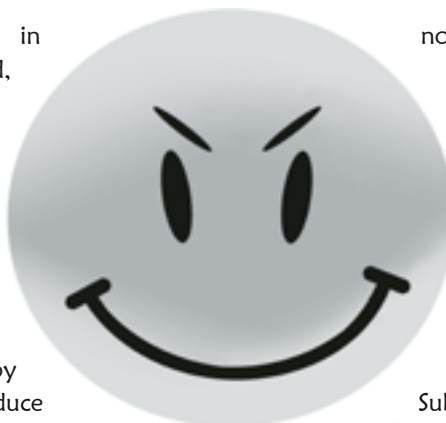
On January 29, 2007, the New Jersey Department of Environmental Protection (DEP) rejected after a month-long review the New Jersey Department of Agriculture's (NJDA) petition to waive the state's ban on aerial-spraying of broad-spectrum pesticides to allow the use of Dimilin for gypsy moth control. For the past 20 years, in lieu of aerial spraying of Dimilin, containing the active ingredient diflubenzuron, towns have used bacillus thuringiensis (Bt), a bacterial agent. With gypsy moth populations expected to be higher in 2007 than in recent years, NJDA argued that Bt would be insufficient to protect hardwood trees across the state. In a letter to NJDA, Marcedius T. Jameson, DEP's administrator for pesticide control wrote, "The case for Bt being ineffective was not made since the municipalities in New Jersey are being offered Bt as a viable option for control in 2007." NJDA also argued that the gypsy moth situation in the state could be categorized as an environmental emergency. Mr. Jameson responded, "The variable potential for tree loss and the nuisance that gypsy moth caterpillars pose do not rise to the level of an environmental emergency." Jane Nogaki of the New Jersey Environmental Federation, who fought the NJDA proposal, explains their opposition to lifting the ban, "The breakdown product of Dimilin is a probable carcinogen and it can rob blood cells of oxygen." In addition, as a broad-spectrum herbicide, Dimilin affects both gypsy moths and beneficial organisms, such as aquatic crustaceans and other molting insects. "We're pleased that the governor and the DEP weighed in on the side of the public and the environment," said Ms. Nogaki.

Wal-Mart Advances on the Environment, Criticized on Organic

On October 30, 2006, Wal-Mart Stores, Inc. announced its "Preferred Chemical Principles" campaign to develop a greener business profile and reintroduce itself to customers alienated by its business practices. According to the company, the campaign will establish protocols for Wal-Mart's suppliers to report their chemical uses and voluntarily replace them with more sustainable substances. Wal-Mart says it will work with suppliers to substitute 20 chemicals of concern over two years. The Principles are meant to "establish a clear set of preferred chemical characteristics for product ingredients." The first three chemicals are two pesticides, propoxur and permethrin, and a cleaning agent, nonylphenol ethoxylates (NPE). Wal-Mart's plan for the voluntary phase-out of these chemicals by suppliers comes in three steps: 1) Awareness: participating suppliers will be given a period to identify for Wal-Mart any of their products that currently use one of the priority chemicals as ingredients; 2) Development of an Action Plan: suppliers communicate to Wal-Mart their plans regarding the

Priority Chemicals in their products; and, 3) Recognition and Reward: Wal-Mart acknowledges the suppliers who participate in this effort. This announcement comes on the heels of a series of promises by the company to reduce its greenhouse-gas emissions and reduce solid waste from stores nationwide. The watchdog group Wal-Mart Watch says, "If Wal-Mart makes good on its promises to use 100% renewable energy and produce zero waste through its supply chain, the positive effects on global warming, the use of toxic chemicals in production, and sustainable product sourcing could be tremendous."

However, on November 13, 2006, just days after Wal-Mart's chemical principles announcement, the Cornucopia Institute, an organic farming watchdog organization, filed a formal legal complaint with the U.S. Department of Agriculture (USDA), asking it to investigate allegations of non-organic food products being sold as organic in the megachain's grocery departments. "We first



noticed that Wal-Mart was using in-store signage to misidentify conventional, non-organic food as organic in their upscale-market test store in Plano, Texas," said Mark Kastel of the Cornucopia Institute. Subsequently, Cornucopia staff visited a number of other Wal-Mart stores in the Midwest and documented similar improprieties in both produce and dairy sections. Cornucopia notified Wal-Mart's CEO Lee Scott in a letter on September 13, 2006 of the problem and asked that it address and correct the situation immediately. However, in January 2007, four months after informing the company of the problems, which could be interpreted as consumer fraud, and two months after filing a formal legal complaint with USDA, many of the deceptive signs at Wal-Mart stores are still in place. "At this point, it seems they are attracted by the profits generated from the booming organic food sector but are not fully invested in organic integrity. Given their size, market power, and market clout, this is very troubling," said Mr. Kastel.

Endocrine Disruptors Linked to Obesity

In addition to junk food and too much time in front of the TV, U.S. and Japanese scientists have linked certain endocrine disrupting chemicals to the possible causes of the international obesity epidemic. A study published in the September 2006 issue of *Molecular Endocrinology* (Vol. 20, No. 9), "Endocrine-Disrupting Organotin Compounds Are Potent Inducers of Adipogenesis in Vertebrates," has linked a class of environmental contaminants, organotins, with excess weight gain. Organotins are endocrine-disruptors and are persistent compounds found in low concentrations in most humans and animals. The researchers studied in mice and frogs the effect of organotins, found in pesticides, wood preservatives, textiles and plastics. Several organotins are found to disrupt the normal function of receptors related to fat cell differentiation. Exposed neonatal mice exhibited significant disruption of signaling pathways and aberrant fat cell formation at several sites, including the liver, testis, and epididymis (where sperm are stored and become mature). In utero exposure to mice also leads to greater accumulation of fat in several sites after the mice are born. Further, although the birth weight of mouse pups exposed in utero tend to be normal, at age ten weeks the fat content in their epididymis is 20% higher than normal. Aberrant development of fat tissues around the gonads in both males and females also occurs in the frogs. These findings fit with research by other scientists showing that humans can be underweight at birth, but can quickly become overweight, possibly because their fat cell content or function is abnormal.



Farm Pesticides Associated with Risks for Community Residents

A recent study conducted in Manitoba, Canada has found that residents in communities in which agricultural pesticides have been applied heavily are at a higher risk for eye disorders and giving birth to children with abnormalities or birth defects. Significantly, these results are not confined to those who work with pesticides directly, like farmers, but are relevant among entire populations. Jennifer Magoon, a graduate student from the University of Manitoba, looked at Manitoba's database of public health records, comparing records from areas of intensive agricultural pesticide use with areas that use little. She studied 323,368 health records from the years 2001 to 2004, which included pharmaceutical files, physician claims, and hospital separations. What she has found are "statistically significant" links between higher pesticide use and health problems. She found that, compared with areas of average pesticide use, the chance for abnormalities in babies born in high-use areas rose four percentage points for males and three and a half percentage points for females. Abnormalities include low birth weight, jaundice, and respiratory ailments. Additionally, the chance for eye disorders increased nearly two percentage points and the risk for mild to severe birth defects rose a percentage point in males. Public health officials hope that this information will help them to continue to make connections between environmental exposures and health endpoints. The results are awaiting publication.

Pesticide Misting Device Taken Off the Market in New York

On November 21, 2006, then-New York Attorney General, now Governor Eliot Spitzer and former Department of Environmental Conservation (DEC) Commissioner Denise Sheehan announced an agreement that removes a dangerous pesticide-misting device from the market in New York. The state alleges that BuzzOff Mosquito, LLC and its authorized dealer in Saratoga Springs unlawfully marketed a pesticide and an accompanying misting system as "safe" and "non-toxic." Under the agreement, both companies will stop marketing the pesticide and the misting system in New York and will offer full refunds to consumers who purchased the products from them. The companies have also agreed to a \$25,000 penalty. Mr. Spitzer said, "Pesticides are toxic chemicals that should not be blindly released

into the air by automatic misting systems. We need to work to reduce the public's exposure to pesticides, and this agreement will help accomplish that important goal." Buzz-Off misting systems are designed to automatically spray a pyrethrin-based pesticide solution at timed intervals from a series of nozzles installed along the eaves of a house, perimeter fencing, and around landscaped areas. Automatic pesticide misting systems can be dangerous to public health and the environment because they can spray pesticides directly onto nearby people and animals. In addition, the mist can coat the surfaces of outdoor furniture and children's toys. In a January 2005 Associated Press article, Joseph Conlon, the technical adviser for the American Mosquito Control Association, stated, "Would I install one in my back yard? No." He further explained, "Our main issue with misting is that there is no surveillance driving it that says that you should be spraying."

Campaign Update:

National Coalition for Pesticide-Free Lawns: Over 800 citizens and organizations have signed the Declaration on the Use of Toxic Lawn Chemicals calling for the aesthetic use of toxic lawn and landscape pesticides to be replaced with alternatives. Activists receive bi-monthly Grassroots Actions to support a transition to safer landscapes in their community. Twenty-five thousand Safe-Lawn Door Hangers, featured in the Winter 05-06 issue of *Pesticides and You*, have been distributed in 38 states. Currently, grassroots activists are recruiting local school and park managers to attend our first online Basic Organic Land Care Training for Municipal Officials starting in late February, see www.pesticide-free-lawns.org/training. The coalition also has a new Policy Workgroup of citizens across the country working to pass local pesticide-free zones and organic land-care policies. To join, call Eileen Gunn, project director, at 202-543-5450.

Silent Summer

Georgia community organizes against pesticide manufacturing waste

by Cathy Strong

Eds. Note: This is the story of the contamination of a community, the poisoning of people, irresponsible corporate behavior, the failure of government to effectively regulate and enforce hazardous waste disposal of “wash water” from pesticide manufacturing and formulation, and a community taking action in response. Moreover, it is a story that links hazardous pesticide use and hazardous pesticide disposal, the cradle-to-grave poisoning outcomes that EPA does not consider in its risk assessments for pesticide regulation.

We all want to believe that our governmental agencies are protecting us. But in my community nothing could be further from the truth. The events that began in south Fulton and north Fayette Counties, Georgia in May 2006 and have continued to today seriously threaten our health and the environment. This is a story of poisoning and contamination from hazardous pesticide waste processing that none of my neighbors or anyone in my family knew was going on right in our community!

Our community is in the south metropolitan area of Atlanta. Ranked the nation’s 15th most desirable rural county in which to live, Fayette County’s population is 104,248 and average family income is over \$100,000 (2005). The school system is rated one of the best in the state. There is no heavy industry around us. Or rather, we thought there wasn’t.

A failure to enforce

Philip Services Corporation (PSC) Recovery Systems is located in Fairburn, Georgia, South Fulton County, a few hundred yards north of the Fayette County line and about four miles from my home. The South Fulton PSC facility was purchased from Fulton County ten years ago and was converted from a sewage treatment plant into a sewage pre-treatment plant, specifically for non-hazardous materials.

For ten years, PSC has held a sewage pre-treatment permit from Fulton County and a permit from the Georgia Environmental Protection Division (EPD) to treat non-hazardous in-



Protesters talk to an official outside of Governor Sonny Perdue’s First Annual Georgia Environmental Conference.

dustrial waste. The EPD permit establishes specific guidelines and requires PSC to file an annual report citing the total volume of waste treated, material and/or chemicals handled, and material buried in the regional landfill. The permit specifically prohibits handling of hazardous materials at the South Fulton County PSC plant. PSC has never, to date, provided any of its required annual reports to EPD. And, EPD has NEVER done anything to enforce the submission of these reports

In the Spring of 2006, PSC knowingly began accepting for “treatment” huge volumes of liquid waste, or “wash water,” transported by highway from Alabama.

The disaster

In May 2006, people living, working and traveling near the PSC plant were overwhelmed by a putrid stench. This odor became stronger near the end of June and even worse in July, reaching a peak during the July 4th weekend. The odor could be detected over a 200-square-mile area. Residents in an area



Citizens picket a state environmental meeting in Savannah.

of approximately 40 square miles, labeled the “hot zone,” were considered most at risk by Fayette County Emergency Management Services (EMS). Fayette EMS personnel were the first responders on the scene and it was they who identified the source of the odor as the PSC plant.

During the early summer and continuing through the present, many people became ill with serious, mysterious complaints. Most of these illnesses were respiratory, leading to difficulty in breathing and asthmatic attacks. There were severe headaches, severe chest pains, nausea and vomiting attacks, excessive salivating, sweating or tearing, muscle twitching, weakness, tremors, lack of coordination, dizziness, nausea, vomiting, abdominal cramps, diarrhea, respiratory depression, tightness in the chest, wheezing, cough, fluid in the lungs, blurred or dark vision, kidney failure and bloody urine. There has been one very sad case of a person whose ALS (amyotrophic lateral sclerosis) may be a result of organophosphate exposure. Those who could afford it obtained palliative treatment but no meaningful diagnosis or curative care from either their own physicians or a hospital. Over 750 people documented their complaints to local officials within the month of July. Ultimately, over 1,000 people reported being sickened, including my family.

Heavy rain and winds from May through August did not remove the odor from the “hot zone.” The first thing my family noticed was the disappearance of the frogs. Then we, and the neighbors, realized that all of the perching birds had died or fled. A beekeeper living next to the PSC plant lost half of his hives, the first time he has ever lost any bees during the summer. The wildlife became silent. The previously healthy pets of many residents near the PSC plant succumbed to illness or death, as some veterinarians diagnosed with reasonable certainty the cause as toxic chemical exposure.

Community response

In early July, affected residents began to gather to protest the unacceptable conditions that they were being forced to live in. This was the birth of the South Fulton and Fayette Community Task Force. An exposure report form was created in English and

Spanish. Neighborhoods were canvassed. Town hall meetings were held. Petitions for immediate closure were signed and forwarded to officials. Fayette and Fulton County EMS recognized that they did not have the resources for dealing with this type of emergency, so they joined affected citizens in requesting assistance from EPD.

After countless telephone calls and several personal visits to EPD headquarters, we finally got Georgia EPD, the Centers for Disease Control and Prevention (CDC), and the Georgia Department of Public Health (DPH) to begin responding to our pleas for air sampling, inspection of the plant, and epidemiological studies.

Inadequate government response

EPD offered nothing in response to our requests for medical diagnosis, advice and treatment. EPD and DPH persistently changed the subject whenever we suggested that a dangerous organophosphate pesticide, related to nerve gases and known to be a component of the wash water, was the most likely cause of our problems. They focused instead on a less toxic material with the same odor as the object of their investigations. This negligence corresponded to the tack being taken by the management of the PSC plant, which continued to publicize, even with newspaper advertisements, that “the odor,” while regrettably unpleasant, was nevertheless “harmless.”

From July 3 to 6, air sampling for the odorant (not the pesticide) were carried out by EPD, which, despite acknowledging the order, said nothing was registering on the equipment!

Response of PSC management

The source of the odor was ultimately acknowledged by both PSC and EPD to be “wash water” from the pesticide manufacturing process. They also had to admit that it had been trucked on interstate highways from the manufacturer (Bayer Crop Science) and packager (AMVAC Chemical Corporation) in Axis, Alabama. This “wash water” was purported by PSC to contain small percentages of the pesticide ethoprop, similar concentrations of the odorant propyl mercaptan, and varying percentages of chlorides and other chemicals.

PSC has not been willing to describe the chemistry of the hazardous, volatile threat agents, the way it actually “processed” this hazardous waste, or the chemical reactions necessary to truly “decontaminate” or “disarm” them. As nearly as we can piece together from confidential sources, “treatment” consisted largely of bubbling air upward through 20,000 to 30,000 gallons of wash water for seven days at ambient temperatures (Georgia summer temperatures!), while stirring with double-

decker paddles in an uncovered vat. We have learned that symptoms like those described above were common among plant workers, largely undocumented workers who speak little English and were offered little safety instruction and no personal protective gear. Vomiting on the floor was routine, but the occasional meeting between management and employees focused on denying to the media that any problem might exist.

Continuing environmental threat

Ethoprop (trade name MOCAP) is a very dangerous organophosphate insecticide and nematicide compound. Environmental Defense's Scorecard ranks ethoprop as one of the most hazardous chemicals to human health. According to EPA (IRED Addendum, 2006), ethoprop is persistent and does not readily undergo photodegradation or hydrolysis. In other words, any amount of ethoprop that was deposited with us last summer IS STILL HERE and would explain continuing illnesses.

EPA classifies ethoprop as a "likely" human carcinogen. It is estimated that approximately one million pounds of ethoprop are used in the U.S. annually on corn, potatoes, sugar cane, tobacco and other agricultural crops. Ethoprop and its metabolites are acutely toxic to mammals. It is especially toxic to birds.

On September 15, the Task Force received the results of EPA testing on some of the railcars to which the "wash water" was transferred from the tanker trucks. The following chemicals were found to be present: ethoprop, propyl mercaptan, dipropyl disulfide, toluene, and chloroform. It was also confirmed by our State Representative Virgil Fludd that sludge samples from the PSC facility also tested positive for ethoprop. With no data regarding the PSC wastewater processing system, it is not possible to determine what amounts of vapors and/or liquids have been released into the surrounding neighborhoods. PSC is not willing to describe their processes, leaving the citizens with many unanswered questions.

PSC states that it is operating within the limits of its permit, and EPD agrees! PUBLICLY! Both entities state that there is no scientific evidence that PSC is responsible for any of the reported health problems. Our Task Force is demanding that PSC close and take responsibility for the poisoning and chemical trespass. Many local communities, including the Fayette and Fulton County Commissions, have passed resolutions demanding the closure of PSC.



Chairwoman Constance Biemiller shares her community's story.

EPA of no help

U.S. Representative David Scott sent a letter to the administrator of the federal Environmental Protection Agency (EPA) requesting the closure of the plant until it has been determined to be safe. He got a response from the regional administrator of EPA in Atlanta, saying, "[T]he information available to EPA indicates that the PSC facility is moving forward appropriately with addressing decontamination, site operation, and other issues stemming from the odor incident."

Evolution of the Task Force

Our Task Force continues to advocate for change with some success. We have requested that PSC's county pre-treatment permit not be renewed, eliminating the company's ability to utilize our sewer systems for disposal of liquid waste. It has not been renewed and PSC has agreed not to re-apply for a pre-treatment permit from Fulton County for at least six years. They can no longer dump from that plant into our rivers and streams. However, some plant activity continues, and the clean up that will have to take place at the facility has yet to be determined. We are very concerned.

We are raising funds to continue the work of the Task Force to ensure the clean up of our community. Our legislative committee will continue efforts to change Georgia laws that allow big business to dump on us. We will work for pesticide regulation, changes in EPD, and alternatives to pesticide use.

The Task Force plans to conduct video interviews with affected families to document the poisoning. Wherever you live, if you have been poisoned by ethoprop or pesticides of any kind, get on the record!

The Task Force also has a protest committee. In addition to occasional picketing, we mount telephone and email campaigns to communicate our needs to local, state and federal politicians. Other committees focus on media, medical and legal issues.

The Task Force is fortunate to have excellent people on all of these committees, as well as dedicated leadership. We have unintentionally become active stewards of our local natural environment while attempting to protect the health of our families.

Cathy Strong chairs the media committee for the South Fulton and Fayette Community Task Force and can be contacted at 770-306-1200 or tara@gr8photo.com. For more information visit their website at www.communitytaskforce.org.

Bed Bugs: Back with a Vengeance

Detection, Prevention and Least Toxic Control of Bed Bugs

by **Katie Khoury**

Bed bugs have recently re-emerged as a common unwanted insect and troublesome infestation problem. Though there is no definitive consensus on what sparked this resurgence, increased international travel and resistance to pesticide treatments are thought to be contributors.¹

What are bed bugs?

There are at least 92 bug species in the family Cimicidae, some of which are known to feed on humans, bats, birds and other warm-blooded animals. All bed bugs are wingless and feed by hematophagy, or blood feeding. Adults are between 1/8 and 1/4 of an inch, reddish-brown in coloration and flat and elliptical in shape, appearing somewhat like a flattened apple seed. Immature bed bugs, or nymphs, are smaller than adults (about the size of a pin head) and are yellowish or clear before eating and red or purple afterwards. Bed bugs' antennae are segmented in four pieces, and the insects' bodies are covered in short, golden hairs. Their legs are well-adapted to crawling up vertical surfaces, such as wood, paper, plaster, and with some difficulty, dirty glass.² Bed bugs can survive up to one year on a blood meal.³

Are these bed bug bites?

Detecting bed bugs may be as easy as realizing you are waking up with sore spots or itchy welts, often in a line. This being said, the offending insect can rarely be identified solely by the appearance of the bites, since they can resemble bites caused by many other kinds of blood feeding insects, such as mosquitoes and fleas. Find the insects and identify them, either using the description above or by taking a specimen to an entomologist.

Can bed bugs make you sick?

Transmission of disease by bed bugs is highly unlikely, though they can harbor pathogens in their bodies. Their medical significance is mainly limited to the itching and inflammation from their bites, which can be addressed with antihistamines and corticosteroids to reduce allergic reactions and antiseptic or antibiotic ointments to prevent infection.

Do you have a bed bug infestation?

Bed bugs are nocturnal insects. The night is the time to see them active and feeding, mostly in the hours before dawn. If attempting to see bed bugs while active, use a red light.

Bed bugs are most often found in the following places:

- In cracks and crevices of bed frames or headboards; and,
- Along the seams of mattresses, or within box springs.

They may also be found in the following places:

- In the cracks and crevices of the floor, plaster or ceiling moldings;
- Along the edge of carpeting;
- Under loose wallpaper; behind picture frames, wall hangings, switch plates and outlets;
- In drapery pleats, the upholstery of sofas or chairs or the folds of clothes hanging in the closet;
- In the cracks and crevices of night stands or bureaus;
- Inside clocks, phones, televisions and smoke detectors; and,
- In the case of more established infestations, bed bugs move further from the bed.

Tiny white eggs (1mm in length, the size of two grains of salt), deposited in batches of 10-50, can be found in these areas.



Bed bugs on the seam of a mattress.

How do bed bugs get into your home?

In the case of apartments and/or adjoining homes, bed bugs are able to travel by way of water pipes, wall voids, gutters and wiring. Rodents, birds, and bats can serve as alternative hosts. If a nearby habitat (see below) is the source of the insect, then it should be carefully moved away from the building and the bed bugs' entryway should be blocked. Otherwise, bed bugs have likely been introduced accidentally or are traveling between homes.

Habitat modifications

Exterior

- Seal up cracks and crevices and fix screens, to prevent bed bug entrance from the outdoors.
- Remove any animal habitats near, attached to, or inside the house, such as bat roosts or bird nests in the eaves, roof or attic, and exclude animals from entry. Deal with any rodent infestations using least toxic management strategies (see Beyond Pesticides alternatives fact sheets).
- Move woodpiles and debris away from the structure, and eliminate all garbage.

Interior

- Fill cracks, nooks or crannies in bed frame, floors, walls, the edge of baseboards and moldings with sealant. Re-glue loose wallpaper.
- Check carefully furniture, linens or luggage brought into the house for bed bugs or rusty-orange stains from their fecal matter.
- Clean up clutter, which serves as a hiding place.
- Duct tape bed legs (sticky side out), which may trap insects for identification.

Mechanical controls

Exterior

- Trap and remove host animals and nests.

Interior

- Scrub infested surfaces with a stiff brush to dislodge eggs, then vacuum. If possible, dismantle bed frame, turn over furniture and remove shelves from desks and bureaus to look for hiding insects, vacuuming to remove insects from crevices.

- Move the bed away from the wall.
- Encase both the mattress and box spring in zippered (plastic) covers, which deny bed bugs access to inner, hidden areas and trap those already inside. After a year, bed bugs trapped inside will die.
- Launder bed linens and clothing in hot water (at least 120°F). Enclose linens and clothes in plastic bags when moving them through the house.
- Vacuum walls, floors, carpet, and drapes.
- In worst cases, duct tape (sticky side out) or smear with petroleum jelly the legs of the bed or place bed legs in bowls or jars filled with water to prevent bed bugs from entering the bed from the floor.

Least-toxic chemical controls

Interior

- Clean vacuumed areas (see above) with diluted borax (2 oz per quart of water).
- Open wall voids and treat with, sodium borate, food-grade diatomaceous earth, or other products labeled for this use with ingredient disclosure. (Wear a dust mask when handling powder formulations.) Seal void completely.

Be careful when traveling Simple precautions can help to avoid and stop the spread of bed bugs when traveling:

- When entering a hotel room, use a luggage stand to elevate belongings off the floor. Do not place luggage or briefcases on the bed until conducting the following inspection: Check the sheets, the upper and lower seams of the mattress and any cracks in the headboard for the insects. Most headboards in hotels can be removed and inspected easily. Look for rusty-red stains of bug fecal matter, or blood spots.
- If bed bugs, their fecal spots or eggs are detected, inform the manager and ask for a different room.
- If bed bug bites are suspected, be sure to wash belongings with hot water (120°F minimum) and borax. Though it is difficult to detect bed bugs in a suitcase, inspect and vacuum luggage after a trip.

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Fungi To The Rescue

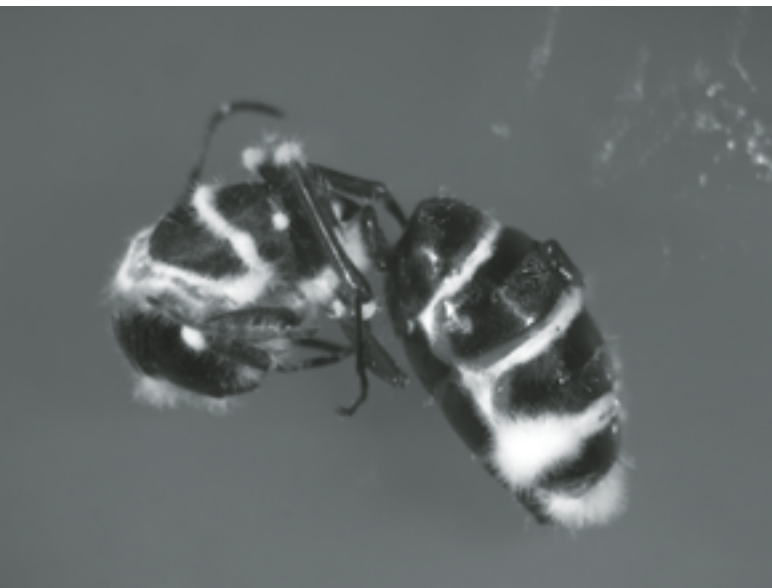
Biopesticide derived from mold has promise as a greener method for eradicating unwanted insects

by Stephen K. Ritter

The following article is reprinted in part from Chemical and Engineering News (December 4, 2006, Vol. 84, No. 49) with permission from the American Chemical Society.

When Paul E. Stamets, the proprietor of gourmet and medicinal mushroom provider Fungi Perfecti, Olympia, WA, bought an old farmhouse in the mid-1980s, he quickly discovered a homeowner's nightmare: A wood-digesting fungus known as an artist's conk had invaded the home and was destroying the floor. The fungus and the softened wood are favorite foods of some insect pests, and Mr. Stamets soon found his slumping house under attack by carpenter ants that left tiny piles of sawdust all about.

But unlike the average homeowner, Mr. Stamets is a fungus expert. He took matters into his own hands. The end result was his discovery of a now-patented pesticide technology that takes advantage of chemical cues produced during one stage of the life cycle of the green mold fungus *Metarhizium anisopliae* to attract carpenter ants and other insect pests and infect them with the fungus, which later kills them. An additional benefit is that chemical cues produced by spores in a subsequent stage of the fungal life cycle help shoo ants and other insect pests away indefinitely.



The green mold *Metarhizium anisopliae* turns into a white fuzzy growth during the mycelial stage of its life cycle. The mycelium produces chemicals that attract insects and make it a favorite food. But when infected with subsequently produced spores, the insects are overwhelmed by the growing mycelium, as shown protruding from a dead carpenter ant, making the mycelium an effective biopesticide.



The technology is being licensed through Mycopesticide LLC, a company Mr. Stamets created. It could have significant economic impact as an alternative to traditional chemical pesticides, while reducing harm to human health and the environment, he believes. For instance, only a teaspoonful of the fungus grown on a substrate such as rice and costing a few cents to produce is sufficient to treat a single home for years, Mr. Stamets says. In addition, *M. anisopliae* and the active compounds it generates don't appear to be harmful to humans, other mammals, fish, useful insects such as honeybees, or plants.

Mr. Stamets had heard about *M. anisopliae* and other mold fungi, called entomopathogenic fungi, that kill insects and use their carcasses to disseminate spores. The pesticide industry has been exploring the use of spores isolated from dead insects as natural insecticides for some time, but with limited success, he notes. One problem is that insects are sensitive to the spores and avoid them, and soldier insects guarding nests sense and intercept most spore-contaminated foragers to prevent them from entering and infecting the colony.

In search of a possible way to save his home, Mr. Stamets ordered a culture of *M. anisopliae* and began to experiment. Strains of the fungus produce chemical attractants in the mycelial state, the stage of the life cycle when a fuzzy mat of mycelium protrudes from a dead carpenter ant, making the mycelium an effective biopesticide.

The spores attach to insects and germinate, using enzymes known as chitinases to bore through the exoskeleton. Once inside the insect, the mycelium grows and produces a host of chemicals. These include destruxins, a class of hexadepsipeptides that compromise calcium ion channel function and are immunosuppressive, and cytochalasins, a class of compounds that affect cell mitosis. Other compounds, still being investigated, affect protozoans living in the insects' gut that are necessary to digest cellulose. In the end, the weakened insects die as the mycelium takes over.

The dead insects look mummified with the fuzzy mycelium, and they become a launching platform for more fungal spores. In the sexual form of the fungus, a tiny club-shaped Cordyceps mushroom grows from the insect carcass. The dead insects left in a decimated colony ward off subsequent insect invasions because the carcasses remain moldy with the repellent spores.

Mr. Stamets reasoned that if termites and ants could be attracted to the mycelium well before spores were produced,

they would eat it and carry fragments of it back to their nests without being stopped by the guards. When the spores were eventually produced, they could fatally infect the colony.

He isolated a small amount of the mycelium from the culture he ordered. Through several subsequent generations of culturing just the mycelium, he was able to create strains of *M. anisopliae* that delay spore production for several weeks. He then grew some of the modified mycelium on rice and tested it by placing a small amount of the rice on a foraging path of the resident carpenter ants in his house.

“That night, about four hours later, my daughter spotted a swarm of ants on the mycelium-covered rice,” Mr. Stamets recalls. “The ants became distribution vectors for the mycelium and promptly infected their nest. A week or two later, my old decomposing farmhouse was rid of carpenter ants.” The house eventually had to be destroyed because of the previous damage, but Mr. Stamets saw no signs of carpenter ants or termites for four years after his pilot test.

Mr. Stamets initiated a series of research trials carried out by entomologists Roger E. Gold and Kimberly M. Engler of Texas A&M University (Sociobiology 2004, 44, 211). Lab and field experiments found that the *M. anisopliae* mycelium was a preferred food for many insects and more effective against Formosan termites, eastern subterranean termites, and fire ants than a common commercial chemical pesticide. The research also showed that highly diluted water-ethanol extracts of the mycelium can be used to attract insect pests.

The Texas A&M research helped Mr. Stamets patent his discovery. The current patents broadly cover using the mycelium of all species of *Metarhizium* and *Beauveria* fungi directly or a mycelium extract as an attractant for all social insects—a significant milestone because social insects (insects with a queen) encompass more than 200,000 species.

The technology is being promoted by technology brokerage firm Yet2.com, Needham, Mass., which is working with a half-dozen interested companies so far in the U.S. and other countries to evaluate potential products. Some of the early *M. anisopliae* products developed by others have already met with Environmental Protection Agency approval for pesticide uses, so products derived from Mr. Stamets’ invention are ex-

pected to gain quick approval, according to Phillip B. Stern, chief executive officer of Yet2.com.

The *M. anisopliae* mycelium technology is “a platform for multiple applications,” Mr. Stern says. One type of product would be the active mycelium itself, which could attract and kill insects. Another type of product would be the isolated “chemical actives” that could be extracted from growing mycelium or synthesized and then used to attract insects to a bait station to feed. A second component would be used to kill the insects.

The suite of chemical attractants produced by the mycelium has not yet been pinpointed, Mr. Stern adds. Research currently being carried out in conjunction with the U.S. Department of Agriculture’s

Agricultural Research Service is “showing strong promise, but it’s in the early stages,” he says.

Mr. Stamets’ mycopesticide discovery could become an integral part of the lucrative pesticide market, which is estimated to be nearly \$9 billion per year in the U.S., with biopesticides representing a 5% market

share, Mr. Stern notes. The biopesticides sector is growing by approximately 15% per year, he says.

“Many insecticides and biocontrol agents are repellent to insects, and therefore the control is poor because the insects don’t come in contact with the product,” comments entomologist Pamela G. Marrone, who has pioneered commercial agricultural biofungicides and is CEO of Marrone Organic Innovations, Davis, Calif. “The significance of Stamets’ work is that it can improve the efficiency and efficacy of fungal-based biopesticides and could improve chemical-biopesticide combinations.” But many more field trials will be necessary to fully prove the technology for commercial use, she says.

*Paul Stamets spoke at Beyond Pesticides’ 24th National Pesticide Forum: Building the Movement and presented his data on the efficacy and applications for his mycopesticide invention. For more information on his presentation, to view his slideshow or for information on ordering his presentation on DVD or VHS (\$20), visit www.beyondpesticides.org/forum. Paul Stamets’ latest book, *Mycelium Running* (2005, Ten Speed Press) is available from Beyond Pesticides for \$35 ppd. For more information, visit Mr. Stamets’ website, www.fungi.com.*

Public Patent vs. Secret Exclusive Use

Mr. Stamets has decided to patent his mycopesticide, which provides for a transparent process that discloses all product ingredients (including so-called “inerts”) and engineering. Most pesticide manufacturers avoid the disclosure required by the patent process and instead use the “exclusive use” provision of the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA), which grants secrecy to chemical companies and only requires disclosure of active ingredients. Many inert ingredients, which can make up as much as 99.9% of a pesticide product, are known to state, federal and international agencies to be hazardous to human health.



The Future of Organics

Organic values, farmer enthusiasm, rural development and consumer leadership

by George Seimon

Eds. Note: The following are excerpts of a talk by George Seimon, CEO of Organic Valley, to the 24th National Pesticide Forum, on the occasion of Beyond Pesticides' 25th anniversary, May 20, 2006 in Washington, DC, in which he discussed the growth of organic, Organic Valley, the incredible successes and the challenges that lie ahead. He was introduced by Beyond Pesticides board member Tessa Hill, director of Kids for Saving Earth Worldwide in Minneapolis, MN.

George Seimon has been one of the nation's foremost organic agricultural advocates for nearly two decades, and is best known for his leadership in organizing farmers and building market support for organic agriculture. Mr. Seimon, himself an organic farmer, champions the system of farming that supports family farms, defends the ethical, humane treatment of farm animals, benefits the environment, and gives consumers high quality organic food.



In 1988, Mr. Seimon joined a half dozen neighboring families in Wisconsin to found the Coulee Region Organic Produce Pool, expanded to the Cooperative Regions Organic Producers Pool [CROPP], and is now known as Organic Valley Family of Farms™. Under Mr. Seimon's leadership, Organic Valley has become the largest organic farmer-owned cooperative in North America. As chair of the Organic Trade Association's Livestock Committee, Mr. Seimon was instrumental in developing national standards for organic certification, a process directed by the United States Department of Agriculture [USDA]. He is a past member of USDA's Small Farm Advisory Committee and served a 5-year term, ending in 2006, as an appointee to USDA's National Organic Standards Board. The Board advises the agriculture department on matters associated with organic industry, including reviewing and selecting acceptable organic ingredients and establishing standards of organic practice.

Mr. Seimon and his family have owned and operated an organic farm since 1977. The land is located in one of the many beautiful valleys called the coulees in southwestern Wisconsin. Vegetables, chickens, cows, pigs and horses can all be found on the Seimon farm. Mr. Seimon is a native of Florida. He received his bachelor's degree in animal science from Colorado State University, Fort Collins.

It's a pleasure and honor to be here. You know, a lot of people do a lot of work and you just heard a lot of credit I get. I think a lot of you here in the room deserve a lot of credit that organics gets because you are the ones who are really advocating for us and doing the work behind the scenes. So, I was glad to come here and present to you about organics. Organics is a big subject and I'm going to try to go through things pretty quickly here.

My family still has a farm. I have a hard time saying I'm a farmer, but my family still does run a farm. We have about 3,500 organic chickens, and we live in the beautiful part of the Midwest where the strip farming is. So, we started a coop. in Wisconsin, and, being one of the people who was not raised on farms, somehow I got naturally pulled into being the business leader. So, while my family still farms, I don't get to spend much time there. Still, it's always wonderful to be

able to return to the farm.

I've spent my time lately with Organic Valley Coop. I just want to tell our story a little bit and then get into organics. We started a coop in 1988 and have been wildly successful. A lot of that is just the mix of people, the timing, and the movement. It was just meant to be.

Our mission is pretty simple. Use organics as a rural development vehicle to bring economic stability. We believe that organics is much more than just how you treat the land, but it is a cultural issue and an economic issue too. It's as many issues as you can imagine. We didn't realize when we started out that we'd be a national coop with regional pools of milk and other products, and operate all around the country. But that's what evolved because that's what was needed.

As a coop, it's just been phenomenal to see the need in the farm community and in the consumer community. The CROPP producer pool locations span the country. It's a huge network of farmers. It is very exciting to have farmers working together and to see the differences and yet the commonality, and how exciting organics makes farmers.

Thanks to organic consumers

I really have to express the thankfulness from the farmers to the consumers because it's changed their lives to discover organics. It's just an awakening. Farmers love farming, but the economic treadmill has gotten them down, while organics has given them a new life. You can just see it in their vibrancy and you can see it in the youth.

Dairy is the biggest part of our business, but we do have a meat business and juice, soy, and vegetable businesses. It's a very complex business, but it's a lot about people – it's affected a lot of people. I always say I spend a lot of my time just making sure everybody gets along well and is keeping the faith. We also have 330 employees. So, certainly we never had any idea how much organics would touch so many families when we started with our little coop.

We work with such a diversity of farmers. It's been quite an experience, and I think organics is just something that's really meant to be.

Part of it is we've always defined organic as more than what has become the organic U.S. Department of Agriculture (USDA) standard. Organic has a lot of glorious history. It's not a new word. It was a school of philosophy in Greek times – the Organics. Just like there were Cynics. Organics has a lot of meaning and a lot of depth, and I think that the real future of organics is to go back to that. So, we've always seen it as a philosophy. We've talked a lot about: 'What does it mean to be an organic business; what does it mean to live an organic lifestyle?'

The coop numbers are overwhelming. We started in 1988 and last year we were \$240 million. This year we're growing \$80 million in one year. So, it's amazing. Thanks to you all. Next year we're projected to grow \$100 million. It's almost overwhelming what's going on. The reality of organics is truly a revolution right now. We just built a headquarters in Wisconsin, and it's all green. It's a wonderful building, a beautiful building – we learned a ton about green building.

Of course, Organic Valley is our vehicle that we speak through. It's about 75% of our bid milk. Our products go through our brand name and the rest goes through either ingredient sales or as a supplier to other companies. We are the major supplier to Stonyfield yogurt.

Knowing our roots

There is a great article in the *New Yorker*, "Paradise Sold: What are you buying when you buy organic?" by Steven Shapin, which I hadn't seen until just now. You all should really pick this up because it talks about the history of organics, some of the challenges we're going through now. I think it's really important to step back and get this perspective. I read a book about the organic movement, *Organic Inc.*, this last winter that explained the beginnings. It is really a great study. Organic is truly a holistic movement that has now become a booming trade. There are a lot of challenges now with this change of transitioning to a very commercial, big trade success.

The real issue we face on the future of organics is how we regain and retain that sense of movement and keep growing, without being run over by the trade part of it. At the same

time, we can't forget what a great success story it is.

Today, we'll talk about the challenges of organics, but we can't begin to forget how great a story this is and what a difference we're making in people's lives. I just heard at this conference that eating organic food has made a difference and how sensitive we've become to non-organic food and really sensing the pollution in those foods. Organics has really been a true people's movement. The real concern right now is whether we're



George Siemon, CEO, Organic Valley.



Organic Valley's 49,210 square-foot "green design" headquarters in LaFarge, WI.

losing that or not. But organics will go where the people lead. It has really been a Cinderella story that has a lot to do with support of organizations like Beyond Pesticides, which has been there from the very beginning to support us. Organics, really, is part of a bigger movement, a green movement where people are making a choice. You know, organics isn't perfect, but I think it's really important to remember how good it is. Organics has always been about doing better. I think that's the part we're really concerned about now.

The future of organics

The future of organics is really here in a lot of ways. I tried to think of all of the challenges I could imagine in the future and we're actually already facing them today. I just couldn't imagine anything that much different than we are now experiencing. Maybe I failed on that one, but if you think we are too big already, well get use to it. The organic marketplace is going to double its size again and double again. We are right now about 2% of the food trade. Where will we be in ten years? We really don't know – 4, 5, 6, 7, 8, 9, 10% of the food trade? Don't we hope it grows to 20%?

So, we have to get used to this 'big.' We have to accommodate some of our new family members, Wal-Mart and Kraft, because now they are a part of our community. It's not easy to accept that, but you're not going to double or triple or grow bigger and bigger without facing this challenge. I've been saying this: "pioneers hate settlers" a little bit. A lot of the organic pioneers are not happy with the new settlers, like Wal-Mart. Yet that's why you pioneer, isn't it – to end up with a village. So, here we are. We have a lot of controversy now over scale and over a lot of things. I think that's fine.

A lot of people are worried about the future. I think the future will be determined by who leads. So, it is real important that groups like Beyond Pesticides and the consumers are the



ones who are leading. Leadership is defined by those leading versus a void where other forces will take over. I think it's real important that we agree to disagree some, but work as a whole. Under my simple definition of organics, integrated parts makes a whole.

Out in the field, so to speak, organics has matured. When we passed the *Organic Foods Production Act* in 1990, there were a lot of commodities we couldn't grow organically. Now there's almost no commodity we can't grow organically, and very successfully.

We have farmers getting above state average yields with lower input costs and receiving a high premium. It's a great story at the farm level. It's working. Organics is not a marketing ploy; it's an agricultural system that works extremely well.

We're receiving acceptance in the farm community – almost. I say almost, but certainly compared to where we were 15 years ago. People got confused between the word organic and generic at that stage. Now, organics is really an acceptable thing because organic farmers are now community leaders. These aren't just oddballs. These are people that are the church leaders and the school board leaders. These are your community people that are organic now.

The new organic infrastructure

The infrastructure is really solidifying now. We have feed mills, veterinarians, and fertilizer salespeople. There is just so much more support compared to the lonely days where you had to look a long, long ways.

We are really getting a lot of support from the government, especially USDA extension – and the research is beginning. They are eager to see organics

thrive as an alternative. They're looking for something that works to tell their farmers. So, we've really gone through the dark days and now we're kind of a darling. The main thing is that organic really works.

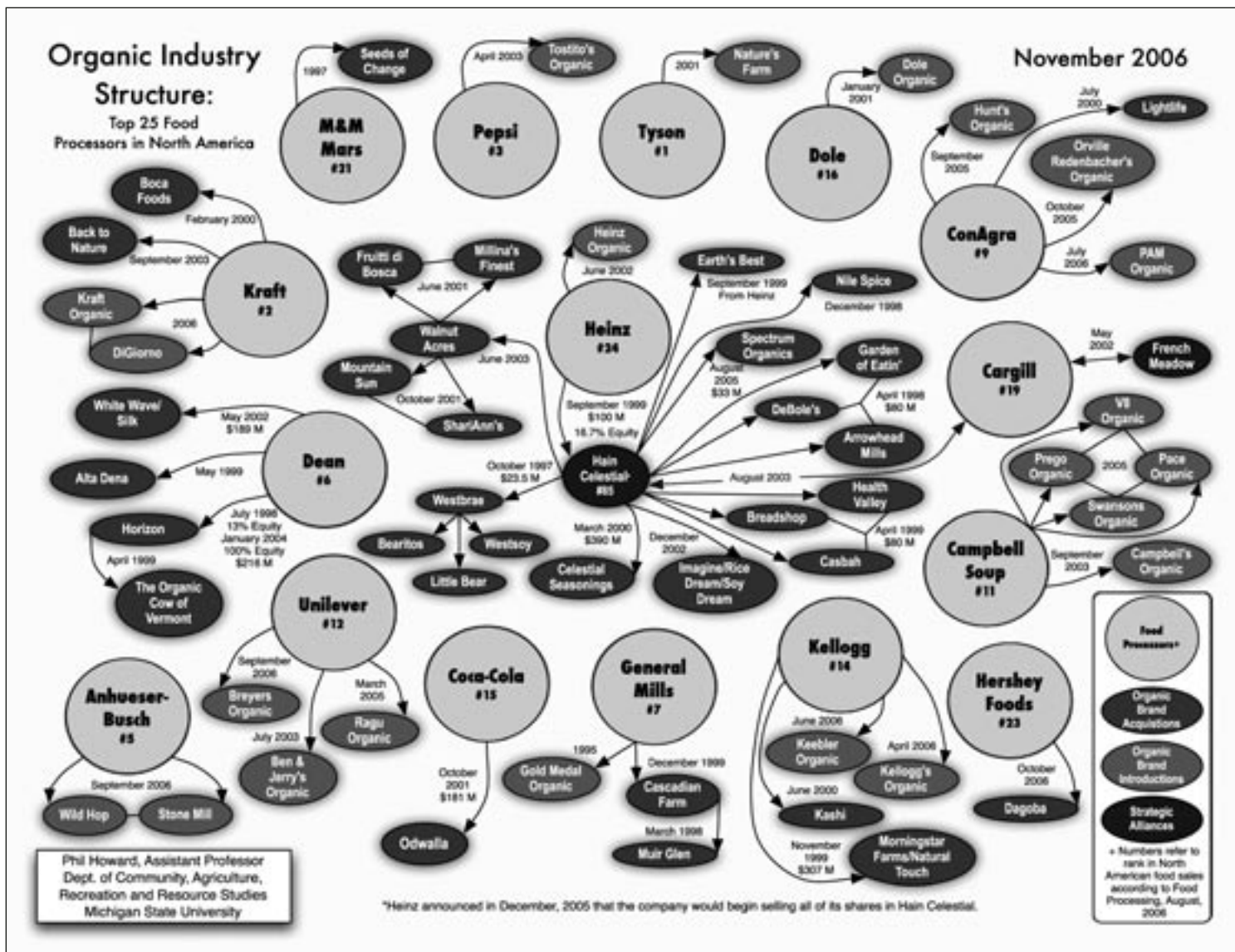
It always comes down to the consumers. We have the brand new consumers, the first time purchasers, and we have the true-blue consumer. We have this whole gamut. But, now we really have the mass-market, which is bringing in a whole new group of consumers in that never would have searched out the organic foods. That's very positive because they, then, are beginning on the organic road, so to speak.

Consumers, including young mothers, are still driving the ship and they don't want slick advertising. They want an educated presentation and they want to be treated like they are mature adults that are researching and thinking for themselves. Wal-Mart isn't talking organic because they've seen the light. No, no, no, no. It's all about the fact that the consumer is still driving the ship.

Influence of large corporations

There is a lot of concern about the corporations and the organic industry structure. [See flow chart on page 20.] The chart keeps changing as a lot the founders of the organic movement and organic food companies have, for whatever reason, ended up selling out. And who has bought them, but standard, corporate food companies. There's actually very few independent brands left. Again, we have to learn how to work with this. This is not anything we are going to change, except through your purchasing habits. If you don't like this, then search out the brands that are still independent. It's pretty simple, but still this is the vehicle. [Yeah, which one is Organic Valley?] There are still independent brands, but this is the price of success to some degree.





With pioneers selling to food corporations and venture capitalists, Organic Valley gets calls from big business. They have slowed way down now because you can only accept no so many times, but we get calls weekly to sell Organic Valley to some new venture capitalist firm. We've already gone through all the Deans and Krafts, and everybody trying to buy us. Now, it's just like an endless thing. They're trying to get in because investors like growth, and organic has lots of growth.

Our real concern right now is sourcing overseas. We just can't keep up in the United States right now and even companies that don't want to go overseas are going overseas. Overseas is a major issue in the future. It's just part of our success again. We now have a lot more manufacturing facilities. At one time, we had to beg to even get into a plant. However, when Wal-Mart meets with its top 70 vendors and tells them we want you to have an organic line, as they just did, of course, that's very disruptive. All of the sudden you have a whole new wave of

people trying to have organics. That disrupts the supply train. But nevertheless, that's what we're going through right now this second. Wal-Mart is engaging on sustainability right now, and low and behold, they're the largest organic produce mover in the United States, I understand. The positive, of course, is that more organic products are going to new consumers.

Organic milk is in high demand now, with over 4% in many mass markets. That's really high. It's one of these lead items for consumers and basically there's a shortage right now of organic milk. The intent, of course, is to pull more upscale shoppers in too. Wal-Mart figures if you're going in there to buy a lawn chair, they can get you to buy some organic items. They call it leakage. They want that money to stay in their store. They're after your dollars and there's a blurring line. I don't know if you've heard, I haven't seen it yet, but Wal-Mart came out with a natural food store near Austin, Texas. I've heard a lot of positive things about it but I haven't seen it. But it's blurring the line. Their way of dealing with the mass

market, I'm happy to say so far, is to raise the bar on standards. If everybody else is going to carry organic food, how will they differentiate? They'll do that by becoming more selective of the brands they carry, and have higher standards, and do their own research on what their food standards should be. I think you'll see that all over but Whole Foods is certainly taking that strategy – to push the bar up and not to be satisfied with USDA standards.

USDA's organic program

Enforcement. Of course, the USDA organic seal is our friendly devil. We needed to protect organic, and the way to do that was to go to USDA. I think we all knew how difficult it would be, and it's certainly lived up to our expectations. I couldn't spell bureaucracy, otherwise it would be the first word on my slide about USDA's organic program. It's pretty frustrating. As I say, you have to drive a stake to see if you're moving sometimes. There's no logic in some of the decisions being made. You can make a decision, as we did on the National Organics Standards Board, in 2000 that still isn't implemented today. You just go, "Why - why not?" Sometimes you start worrying about conspiracy, but you just don't know. I think a lot of it is bureaucracy. More disturbing is the lack of enforcement. There are issues out there that are clearly violations that they're just not getting to, and again you have to wonder whether it is bureaucracy, conspiracy, or what is it? I always lean toward bureaucracy, because it's just the nature of government agencies in my opinion.

Farm plan. One of the disturbing parts for me is that the farm plan has always been a big part of organics, which is intended to encourage continual improvement. If you have some issues, next year, the law says, we want to see you do better. That is being lost now. That's real disturbing to me. It's not black and white; it's supposed to be a continual process of improvement. So, how we get that back is a real concern I have. I don't think it's really gone yet, but it's a real concern I have right now.

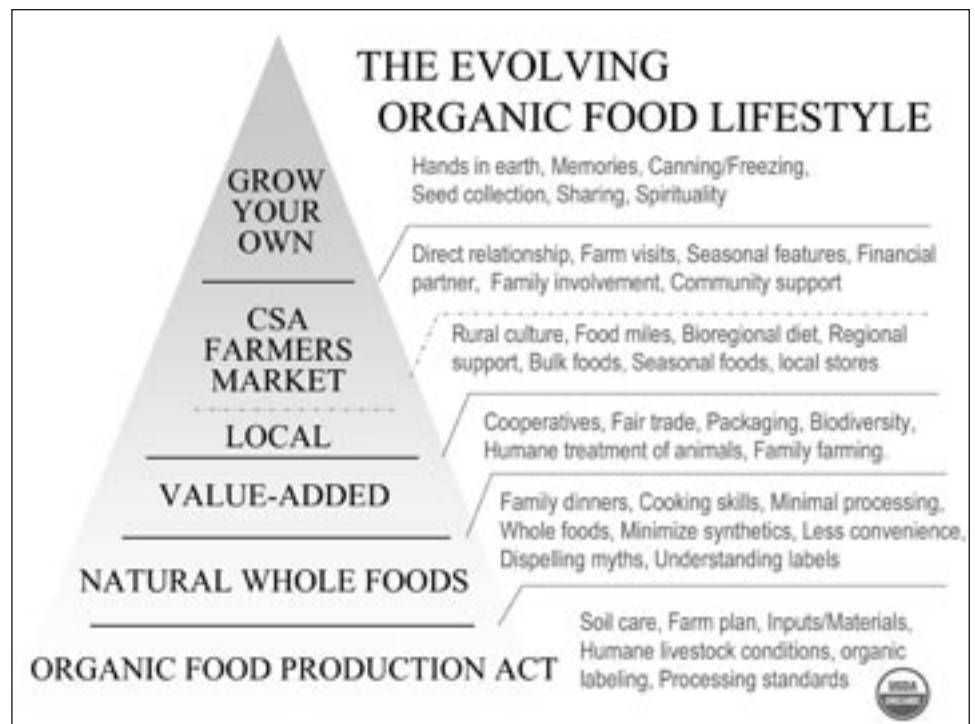
Transparency and labeling. There's a real lack of transparency in labeling of synthetics and processing aids, which I know is a big concern to Beyond Pesticides. I think that is something that really needs to be demanded by the consumers, that they want transparency. If you use something, be proud enough of it to put it on your label, or at least on your website, and explain what and when you do it. When the controversy came up as something we did, we were proud to say we hardly use any synthetics. By the way, an example of synthetics is calcium added to orange juice. I, personally, was against that, but it's the #1 item in our business right now. It is something that the consumers want, so the consumers pushed some of these things forward. So, that's an example of one of the few synthetics we use in our business.

National Organics Standard Board. The NOSB is really a unique committee. It's a great group process. It's not perfect but it is one of the rarest parts of our government where we actually have some authority and we actually have a public discourse. But we can't forget that the standards are, overall, very high. It's really important to remember that. The standards in the United States are very high.



The organic food lifestyle pyramid

Organics has its own life, and it's not going to be easily taken over. Because of that, because it has its own life, because it's an evolution of consumers' understanding of food, relationship to food, it is something very personal. It is not something that can be canned. So, I developed the evolving Organic Food Lifestyle Pyramid (see chart to right). The different levels, starting at the bottom, include *Organic Foods Production Act*, natural whole foods, value-added, local/CSA farmers market, grow your own. At the top of the pyramid a lot of people are talking about beyond organics, or what's wrong with organics.



Source: Organic Valley

Organics – the way we understand USDA – is just a foundation to direct how food is produced. It doesn't go nearly far enough, in my opinion, for what we want out of organics. Yet, we needed that protection to make sure that organic food production is well-defined. But just because it is USDA Organic does not mean it is really natural, whole foods. We already have what I call organic twinkies, but some health conscious mothers would rather feed organic twinkies than conventional twinkies to their children. I guess that's their choice. See, you quickly get into, natural foods, the second level, as being very important. USDA is not necessarily ensuring you of natural, whole foods. You have to make that choice yourself.

Value-added, the third level, is, I think, one of the most important things. It encompasses the following: cooperative,

fair-trade, packaging material, biodiversity, humane, and family farming. There are a lot of values and issues to be added on top of the USDA standards that the USDA seal does not address. There's no way we can expect the USDA to do what we want.

Then we get to fourth level, local, which I think this group all understands is as important as any part of this. But local has to be on organics. To have local that is chemical is really not a statement that I want to make. I want organic local. Then, you have the Community Supported Agriculture (CSA) farmers market, the fifth level. You're building relationships with farmers. You're getting more and more connected to food production.

Then, to me, people ought to grow their own food, the top of the pyramid. With this pyramid, I am trying to show the evolution that people need to go through and understand. It's not the USDA. In fact, I don't want the USDA doing more than they're already doing. We have to go further. The pyramid captures federal oversight, personal choice, and personal action.

Beyond organic and other labels

We're at the stage now that the future of organics is about getting beyond USDA and building this movement through education for the rest of the values that we think belong in organics.

There is a cartoon (see to the left) that depicts a consumer in a grocery store aisle viewing dozens of different label claims on different fruits and vegetables



saying, "I say standardized labels can't come too soon." They're not going to come. They're not going to come, because the truth is USDA Organic does not go far enough for everybody. So, we're going to have other labels. We're going to have other claims. I hope it is not as bad as the cartoon suggests, but we're not going to get to one label.

Organic integrity

Consumer and farmer passion is crucial for integrity. The control of the future is really up to the consumer and the farmer. We're going to double and triple, and I think education is where we're at right now. We always said once we get past regulation, we need to start education and research. We're really at that stage now, where we're just doing a lot more research about the benefits of organic, and we have to find ways to educate consumers. I think that's where Beyond Pesticides does a great job. Of course, brands have to be constantly improving to address this growth in the consumer's awareness about organics.

The large-scale and imported commodities will be the majority of the production. We may not like it, but the rest of the world is discovering organics and they're going into it in a big, big way right now. Whether it's in Argentina, Brazil or China, the organic production coming out of these countries is huge right now. It's just starting now; the engine is just warming up. They're going to produce a lot of organic food. There are some real issues there about supporting local, about integrity, and those are the challenges we're going to face in the future. I believe additional labels will be part of the future. We're actually part of a group right now looking into a fair trade type label for the United States that incorporates a lot of these values. I have a lot of misgiving about another verification system, but still there are issues unaddressed by the USDA.

I think local will become a critical issue. In addition to being increasingly embraced by environmentally conscious people, I think eating organics from day one will be advocated by the health community as the best preventive medicine.

So, lead with your dollar. I think organics is a movement by definition. We were kind of pirated by the USDA and the trades now. I think it's the people, you all – all of us, who make it a movement. It's really crucial that we do that.

Organic policy

We've had our divide now in the organic community. I think it's really important to keep the discussion going and your open letter about the organic community was really good (download a copy from the Winter 2005-06 issue of *Pesticides and You* at www.beyondpesticides.org/infoservices/pesticidesandyou). I think we just need to keep the faith and



stay involved. When I look I always see that they're following us. They're not leading. The extension service is not saying we need to develop organics. They're following us, saying this is something we need to be involved in. You know, the corporations are really following us as a people. I think it's real important that we keep leading as we move to the future.

Honoring the organic movement's roots

I think it is really rare to be part of something as positive as organics. I think it's certainly been a blessing for me to be in my position. It's really neat – organics – how it's a never-ending relationship that you can deepen in your understanding and your relationship with food. I think food is one of our true avenues to speak to nature. I had earlier described on one of my slides 'food as a hobby.' I think people should go back to canning, growing your own food, and going out into the countryside and getting food. I think we have a long way to go to rediscover food. So, to me, organics is a big part of the discovery. Of course, organics is part of a bigger movement. We're still searching for that name for the bigger movement. I happen to think organics is a great name, because it does encompass all of the parts working together as a whole. There is no doubt that we're part of a bigger green movement that is just now going to explode. All of us are a big part of the future. What organics will be is really a matter of how active we and the next generation are in keeping it true to its movement roots.

In closing, I hope somehow we're all here in another 25 years and can look back and see how well we've done. Thank you.

George Seimon's presentation at the Beyond Pesticides' 24th National Pesticide Forum: Building the Movement is available on Beyond Pesticides' website at www.beyondpesticides.org/forum or on DVD or VHS. For a copy of the DVD or tape (indicate which you would like), please send \$20 to Beyond Pesticides with your mailing address. Other speeches from the Forum are also available.

Invasion Biology: Critique of a Pseudoscience

by David I. Theodoropoulos

I was led to *Invasion Biology—Critique of a Pseudoscience* through a listing in the *Horizon Herbs* catalog. The short blurb by Richo Cech suggested that this was a book I'd been looking for—a book challenging the notion of “invasive plants,” which seems to be the newest justification for noxious weed extermination programs.

In the preface, David Theodoropoulos refers to his book as an “abstract.” It is an abstract only in that it is terse and somewhat unpolished in its presentation. It is, however, densely populated with examples and citations and is by no means simply an outline of an argument.

The author's argument is fascinating and provocative. I had concluded before reading this book that chemical companies had come upon a clever way of capturing a wider group of biologists and inducing them to support noxious weed programs by focusing on weeds as invaders of natural ecosystems. In fact, though, I saw little evidence that these “noxious weeds” are invading intact ecosystems. Instead, they are colonizing places that we have disturbed—by plowing, overgrazing, building roads, constructing buildings, poisoning, and so forth. Whenever I asked for evidence that “invasive species” fit what I thought the definition was, I got blank looks. “It's there and it's taking over,” seemed to be the extent of the “evidence.”

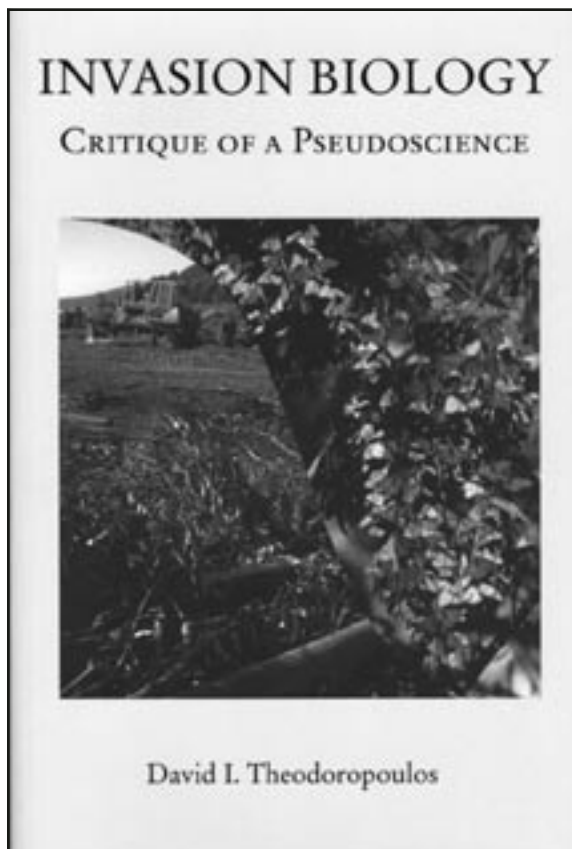
Mr. Theodoropoulos provides a lot of evidence that supports my casual observations. But he goes a lot further. He claims that “invasion biologists” are unable to give a rigorous definition of “invasive species” or other terms in their lexicon. He says the science just isn't there to support the idea that invasive species pose the threat that is claimed. So far, I'm with him. But much of the book is devoted to explaining the psychology of the fear of non-native species. He says, “A comparative examination

of the content and structure of the foundational concepts of invasion biology, and the recurring motifs of its narratives, has demonstrated that these are identical in all key points to those of racist, xenophobic, nationalist, and fascist ideologies. The origin of invasion biology as an organized movement in Germany during the Third Reich confirms this. Implicit in invasion biology is an inevitable destructive outcome identical to these other delusions, and this is currently manifesting itself in the field.” [Emphasis in original.]

I'm not convinced that “invasion biologists” are driven by the motivations of racism and xenophobia, though I find provocative the idea that the fear of invasive species might be driven by the language that has, in other circumstances, proven successful in promoting racism and xenophobia. It is certainly worth considering, when faced with the “need” to spray herbicides to eradicate an “invasive plant,” how language is being used in the campaign and how it might be combated.

Mr. Theodoropoulos argues that dispersal into new settings has always been a part of the structuring of ecosystems. New species come; they may or may not persist. If they do persist, the community will change, but change is not bad. What is new is not dispersal of new species by humans, but the widespread disturbance on a grand scale.

This book presents an argument that needs to be part of our discussions of “weeds” and “pests.” It is certainly an aid in going beyond pesticides by going beyond “pests.” I would suggest to the reader that beginning with a glance at Chapter 13, “Towards a New Theory of Anthropogenic Dispersal” would help in understanding the author's perspective. This book is written as a critique, and as a critique it is really valuable. But I found it difficult to wait until Chapter 13 to find the author's alternative.



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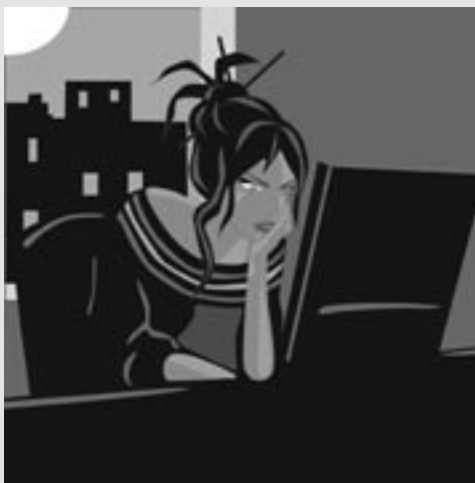
NEW ONLINE TOOLS FOR INFORMATION AND ACTION

Gateway on Pesticide Hazards and Safe Pest Management

www.beyondpesticides.org/gateway/about.htm

Beyond Pesticides has created a new database tool that is intended to provide decision and policy makers, practitioners and activists with easier access to current and historical information on pesticide hazards and safe pest management, drawing on and linking to numerous sources and organizations that include information related to pesticide science, policy and activism.

Currently, the Gateway lists 81 chemicals and has 8 categories of information: chemical name, factsheet and popular product and manufacturer names; chemical class; pesticide uses and information on less and non-toxic alternatives; toxicity rating; health and environmental effects; regulatory status; other information (brochures, factsheets, databases, websites, etc.); and, key studies.



Daily News Blog

www.beyondpesticides.org/dailynewsblog

On January 16, 2007, Beyond Pesticides converted its Daily News feature into a Blog, enabling readers to post comments and additional relevant information that will further inform or give perspective to the issue(s) being discussed.

Daily News is a service of Beyond Pesticides that is intended to keep activists, academicians, policy makers, the health care community, and pest managers informed on key issues and actions that are ongoing and important to the protection of public health and the environment. Daily News is intended to provide a tool for action

as we seek to effect a shift in policies, practices and products to safeguard the health of people and the environment.

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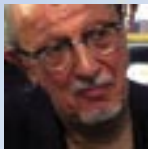
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Forum topics:

Global warming: consequences and the organic connection; **Environmental Justice;** Elevated risks of **pesticide mixtures;** The hazards and fate of common **antibacterials;** The truth about **nanotechnology;** **Asthma** and the pesticide link; New legislative **opportunities;** Passing local **policies;** Great Lakes/**water** contamination; **Sustainable agriculture,** nutrition and urban gardens; **Scientific integrity;** and more.

The Forum begins Friday afternoon with a **Chicago City Hall green roof tour** and ends Sunday at noon.

Partial Speaker List:



Samuel S. Epstein, M.D., (2007 Dragonfly Award recipient): international authority on the causes and prevention of cancer, professor emeritus at the University of Illinois School of Public Health, and chairman of the Cancer Prevention Coalition. Dr. Epstein has published over 260 peer reviewed articles and authored 11 books including the prize-winning *The Politics of Cancer*.

Rolf Halden, Ph.D., P.E., co-founder, Johns Hopkins Center for Water and Health; **Tyrone Hayes, Ph.D.,** professor of Integrative Biology, University of California Berkeley; **Paul Hepperly, Ph.D.,** New Farm research and training manager, The Rodale Institute; **Peter Orris, M.D.,** associate director, Great Lakes Center for Occupational and Environmental Safety and Health, University of Illinois; **Lisa Madigan** (invited), Illinois Attorney General; **Peggy Shepard,** executive director of West Harlem Environmental Action (WE ACT); **Cynthia Willard-Lewis** (invited), New Orleans City Councilmember; and many more.

Register online at www.beyondpesticides.org/forum and see more details as they become available



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