

~ Chapter 2 ~

**Pesticides:
Still Toxic After
All These Years**



**“We can’t solve problems by using the same kind
of thinking we used when we created them.”**

~Albert Einstein

“About one billion pounds of conventional pesticides are used each year in the United States to control weeds, insects and other pests.”

—*U.S. Geological Service, 2005 report on “Pesticides in the Nation’s Streams and Ground Water, 1992-2001”*

“Until EPA can state with scientific confidence that these pesticides will not harm the neurological development of our nation’s born and unborn children, there is no justification to continue to approve the use of the remaining (organophosphate and carbamate) pesticides.”

—*Letter sent to EPA Administrator Stephen L. Johnson by the heads of nine EPA-affiliated unions in May 2006*



What’s in a name change?

There could be a lot if it involves a transition from a long-established company name to one that has an entirely different connotation. That’s the kind of name change that was implemented by the company formerly known as ChemLawn, which first expanded its name to TruGreen ChemLawn and now simply calls itself TruGreen, because, according to its web site, “one word is all you need for a great lawn.”

Maybe so, but the real reason might have a lot more to do with the negative imagery that associating



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lawns with chemicals now evokes in a large segment of the public. By the same token, the company is now using generally less-toxic pesticides and herbicides than it did when it bore the “Chemlawn” name, according to a representative we spoke with on the phone.

Given the increased amount of negative publicity that such products have received in the past decade or more, that’s really not surprising. And many people have begun to discover less-toxic ways of doing things, such as caring for their lawns (a subject discussed at length in *Chemical-Free Kids*). Creating a nontoxic “lawn culture,” in fact, is the focus of the SafeLawns Foundation (<http://safelawns.org>), a Maine-based group seeking to create a coalition of organizations and companies “committed to educating society about the benefits of environmentally responsible lawn care and gardening, and effect a quantum change in consumer and industry behavior.”

But make no mistake: toxic, hazardous and health-destroying pesticides have not disappeared from the marketplace, the landscape or our food supply—despite a major government program launched in the 1990s to identify the worst offenders and curtail their use in the products we eat for breakfast, lunch and dinner.

THE PEACE-OF-MIND DELUSION

It was supposed to have been a “peace of mind guarantee” for American families.

That was the term used by President Bill Clinton in 1996 in describing the intent of the Food Quality Protection Act, or FQPA, as he signed it into law.



The purpose of the Food Quality Protection Act,

as was noted in *Chemical-Free Kids*, was to establish “reasonable certainty that no harm will result to infants and children from aggregate exposure” to any particular pesticide.

What that means is pesticides aren’t to be individually evaluated in terms of their safety or lack of same. Instead, the impact of all pesticides must be looked upon as a whole, the way we’re exposed to them in real life—that is, through multiple exposures to multiple sources.

The FQPA also recognized the fact that children, infants and fetuses are most vulnerable to the harmful effects of pesticides. Accordingly, the U.S. Environmental Protection Agency (EPA) was charged with reviewing all pesticide tolerances (meaning allowable residue levels) in effect up to that time, and given 10 years to complete this entire task.

Some experts in the field, however, were highly skeptical about the ability of this legislation to achieve its stated goals and considered the criteria used to determine tolerances highly inadequate for that purpose. Particularly at issue was the additional “tenfold margin of safety”—for example, if the residue allowed by the EPA was 10 parts per million in a food, it would be reduced to one part per million—that the EPA was supposed to use when evaluating any pesticide for which “reliable data” was lacking on toxic effects to embryos and newborns, and on the amounts to which infants and children were routinely exposed.

To David Wallinga, a former senior scientist with the Natural Resources Defense Council (NRDC), that meant having to review a whole list of data, including toxicity findings based on embryonic test animal studies and actual levels of pesticide from all sources to which children



were exposed. In fact, that's what he advised the EPA. But the agency, he said, decided that the existing tests had already provided "complete and reliable data."

That's why (as was originally noted in *Chemical-Free Kids*) while it may all have sounded very reassuring, "whether this much ballyhooed legislation can even begin to live up to that covenant" is "one that inspires little confidence among consumer advocates."

Ultimately, such doubts were borne out in dramatic—if somewhat underreported—fashion some three months before the August 2006 deadline for completing the task rolled around when some 9000 EPA staffers weighed in with their view that the agency they represented had dropped the ball in carrying out the mandate of the FQPA.

'Mission (Not) Accomplished'

The anger of the people who had been assigned the mission of mitigating the perils posed by pesticides took the form of an open letter to EPA Administrator Stephen L. Johnson. Signed by the heads of EPA unions representing scientists, risks managers and related staff, it accused the agency of bowing to industry pressure, leaving the public in general—and children in particular—insufficiently protected from the toxic effects of these chemicals.

Another concern expressed by the EPA staffers in their letter to Johnson was that agency "risk assessments cannot state with confidence the degree to which any exposure of a fetus, infant or child to a pesticide will or will not adversely affect their neurological development."



They also contended that:

- Their colleagues in the Pesticide Program felt besieged by political pressure from their bosses at the EPA, as well as from former agency officials who had become affiliated with the pesticide industry and agricultural communities;
- In the rush to meet the deadline, “many steps in the risk assessment and risk management process” were being “abbreviated or eliminated in violation of the principles of scientific integrity and objectivity...”; and
- The prevailing belief among managers in the Pesticide and Toxics Programs was “that regulatory decisions should only be made after reaching full consensus with the regulated pesticide and chemicals industry.”⁸

Such overwhelming dissent within any organization is not something that can be simply dismissed as the complaints of “disgruntled employees.” So rather than address the massive revolt from within its own ranks, EPA top brass simply opted to ignore it by taking what amounted to a “mission accomplished” position with a couple of cursory, self-congratulatory press releases issued on the 10-year deadline for the FQPA review.



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“Americans today can be confident that pesticides used in the United States meet the highest health and safety standards in the world,” said one such release. It then went on to quote EPA Administrator Johnson as saying that the agency’s “ground-breaking effort is being welcomed at dinner tables across the nation,” and that “the Bush Administration is ensuring pesticides used to grow the fruits, vegetables and other foods families are serving meet the highest protective standards in the world.”

“By maintaining the highest ethical and scientific standards in its pesticide review, EPA and the Bush Administration have planted the seeds to yield healthier lives for generations of American families,” claimed the second EPA release.

Sounding as though nothing about them was in dispute (let alone by those who were most knowledgeable), these pronouncements were aimed at reassuring Americans that they need no longer be concerned about pesticides posing a hazard to their health. The releases also provide a few specific examples of measures that have been implemented under the review, although they contain no mention of any reductions in infants’ and children’s exposure levels (which are discussed in a report posted on the EPA’s web site).

Aaron Colangelo, a lawyer specializing in pesticide issues for the Washington, D.C.-based NRDC, was one of a number of leading environmental advocates who shared the EPA staffers’ sentiments. “I would say the statement that they’ve met the highest scientific and ethical standards is untrue,” he asserted. “In order to meet their deadline in evaluating all these pesticides, they’ve essentially ignored, disregarded or misapplied key safety measures written into the law to protect children.”



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Perhaps the most glaring omission, Colangelo maintained, was the EPA's having "routinely failed to use an additional tenfold margin of safety to protect infants and children" for many chemicals, especially "five key pesticides that are among the most toxic."

All of this isn't to suggest that the FQPA reevaluation was a total failure. One positive result, in Colangelo's view, was the voluntary cancellation of the remaining seed treatment uses of the pesticide lindane. "That was an important decision," he contends, since "lindane was one of the worst pesticides that was still registered." Another example he cites is the proposed cancellation of six minor agricultural uses of carbofuran during a four-year phase-out period. But Kristan Markey, a research analyst at the Environmental Working Group (EWG), noted that lindane is "already banned by 52 other countries—yet we're bragging that we have the highest standards in the world."

But another EPA claim—that the use of the organophosphate DDVP had been significantly restricted during the last decade—is also one that Colangelo called "misleading." The EPA, he said, actually negotiated a private deal about two months before with the manufacturer to allow DDVP to stay on the market for home usage, despite a recommendation in the mid-1990s that it be banned from such products as no-pest strips and flea collars. The actual restrictions, he noted, were intended to eliminate its use in cracks and crevices and to reduce the size of the strips.

"The EPA could have and should have restricted many of these pesticides and banned them entirely," he said.

Colangelo also felt the Bush Administration had "interfered on certain specific pesticides to weaken their regulation," probably one of the best examples



being atrazine, an herbicide used chiefly on corn. In his view, “the pesticide office at EPA is essentially a captive agency and they’ve just bowed to industry pressure.”

Compelling Evidence of a Cover-up

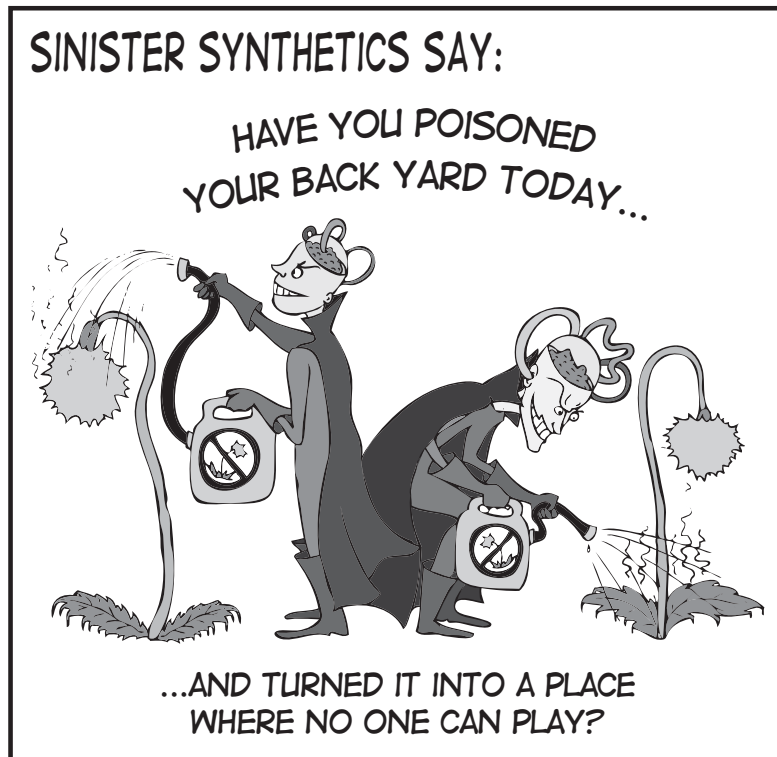
The position of the EPA staffers was also supported in a news release from Public Employees for Environmental Responsibility (PEER), a national alliance of federal, state, local and tribal resource professionals that works to promote environmental enforcement.

“In an unprecedented action, representatives for thousands of U.S. Environmental Protection Agency scientists are publicly objecting to imminent agency approval for a score of powerful, controversial pesticides,” the release stated. “The scientists cite ‘compelling evidence’ which EPA leadership is choosing to ignore that these ‘pesticides damage the developing nervous systems of fetuses, infants and children.”

PEER also noted that its members “are concerned that the Agency has not, consistent with its principles of scientific integrity and sound science, adequately summarized or drawn conclusions about the developmental neurotoxicity data received from pesticide registrants. Our colleagues within the Agency, including EPA’s inspector general, believe it would be premature to conclude that there is a complete and reliable database...upon which to base any final tolerance reassessment decisions as required by the FQPA.”



“The fact that this letter had to be sent at all is an utter disgrace but, even more disgraceful, is the likelihood that this warning will be disregarded by an



agency that is supposed to be protecting public health and the environment,” PEER Executive Director Jeff Ruch said at the time.⁹

Joining in the chorus of criticism of EPA officials was EWG’s Markey, who contended that “they’ve clearly ignored their own protocol and regulations for pesticide registrations and fallen short of their mission.”

“They had a clear mandate, a clear warning, a reminder of that warning from their scientists, but decided to side with the (chemical) industry and its profits... They don’t have the critical data studies that they should have on a number of these pesticides. If you don’t have them, you have to protect



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at the highest level with extra safety factors, and I couldn't see where they used them.”

Another authority on the subject, Dr. Margaret Reeves, a staff scientist with the environmental group Pesticide Action Network (PAN) based in San Francisco, charged that the FQPA reassessment represented “an egregious abandonment of EPA’s mission to protect the health and well-being of children, farm workers and rural residents — those most likely to suffer the short- and long-term health consequences of the continued use of these hazardous neurotoxins.”

“We do recognize and support the EPA scientists in their recognition of inappropriate industry influence,” Reeves said in a 2006 interview. “It seems like (the EPA’s) interest is in retaining the use of organophosphates, and therefore they conveniently perhaps are choosing to ignore information suggesting that they are hazardous to children. They’ve largely failed to consider one very important route of exposure, and this is pesticide drift. I know there’s very little residue testing, and I’m not at all confident that their models really do document real-world exposure from food.

“The use of hazardous pesticides continues to be very, very high, and there’s no national system for documenting or evaluating pesticide poisoning,” added Reeves, who said she’d give the EPA’s review “a failing grade.”

In the face of such a massive outpouring of criticism, one might have supposed the EPA would have made some attempt to restore confidence in its integrity through a concerted effort to



update and expand its store of information. Instead, it appears to have taken just the opposite approach.

The Great Library Lockout

A little over two years after the rebellion of the EPA's rank and file over the agency's failure to make good on its responsibilities under the Food Quality Protection Act, PEER Executive Director Ruch was asked whether he had seen any indications of significant improvement in its pesticide data updating and regulation performance.

"The situation within the EPA in regard to pesticide regulation has only deteriorated in the past two years," he replied, citing "increased unrest" among its scientists.

One of the chief reasons for such discontent among EPA staffers, Ruch explained, is the fact that their ability to do independent research on pesticides and other toxic chemicals has been severely curtailed during that period—as has that of outside investigators as well—through implementation of a plan he characterized as "designed to make the agency less capable."

Perhaps it was a mere coincidence (or perhaps not)—but it seems that not long after the unions' letter of protest arrived on Administrator Johnson's desk, EPA officials quietly began closing down the agency's research libraries, where the data required for much of this work was archived. Without such information readily available to them, Ruch observed, EPA scientists have been made "more dependent on industry submissions and less able to independently challenge them."

The main such facility at EPA headquarters, described by Ruch as having been "the nation's largest repository of materials on effects of pesticides and chemicals," was "shuttered without notice to agency scientists." This seemingly



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subversive move deprived investigators and researchers of an essential tool to independently evaluate any submissions. “The holdings have been crated up and are unavailable to this day,” Ruch said, with the plan “apparently being to secrete it away for years.”

Included in the EPA-led closures were a number of regional libraries serving 15 Midwestern states, including facilities in Chicago, Dallas and Kansas City. According to a PEER news release, the EPA offered a rationale that it was planning to digitize everything in its collection and make it all available someday on-line. This supposed plan, however, was announced “without any dedicated funds amid sharply reduced budgets,” as Ruch observed at the time, further noting the move was framed as being in accordance with President Bush’s proposed budget cuts.

Also casting this plan in a dubious light was the fact that “90 percent (of the materials involved) couldn’t be digitized because they were copyrighted,” said Ruch, adding, “It also made no sense to physically remove them before they were digitized.”

Like the agency’s failed response to the FQPA, the “great library lockout” drew sharp opposition from EPA staffers, thousands of whom signed a letter of protest, contending that the plan was designed to “suppress information on environmental and public health-related topics.”

Such organized protestation, while it may not have cut any ice with either the administrator or administration, did eventually succeed in influencing Congress to order the libraries restored—



something the EPA has only grudgingly agreed to do, according to Ruch.

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The headquarters library, for instance, will consist of what the EPA describes as a “consolidated operation,” but “won’t be fully restored,” he noted.

Plans also call for the Chicago regional facility, formerly the largest regional library, to be reopened in a vacant reception area on the 16th floor of a federal building, occupying “less than one-tenth the area of the closed library,” and “only slightly larger than the typical men’s restroom in that same building,” according to a PEER press release. Furthermore, “no provision is made to restore the unique Great Lakes ecological collection or to recover any of the other holdings from the former library.”

Another change is EPA’s installation of a political appointee, Assistant Administrator for Environmental Information Molly O’Neill, as library overseer, in charge of all library operations, including those serving laboratories and specialized programs. According to PEER, O’Neill will be overseeing a host of new rules, “including detailed directives on handling research and information requests and priorities for materials disbursal or destruction.”

“Even as many collections remain in crates, EPA has decided to micromanage what is left,” PEER Associate Director Carol Goldberg was quoted as saying, adding that the agency has still not accounted for many of the library holdings it removed.¹⁰

But while federal “regulators” may have managed to remove from circulation much of the existing data on pesticides and their effects, various private groups have dedicated a great deal of effort to coming up with new information on the amounts of these chemicals we’re being exposed to in our diet— and the impact that may be having on our health



and that of our children. One of these organizations, the Organic Center of Boulder, Colo., has been able to learn a good deal about how much of these small, cumulative doses of poison we're apt to be ingesting when we engage in what's usually considered "healthy eating."

PLAN TO HALT PESTICIDE REPORTING DRAWS STRONG OPPOSITION

If there's anything that rubs a researcher the wrong way, it's a threat to make the data on which he or she depends no longer accessible—as the U.S. Department of Agriculture discovered in May 2008, when it announced a plan to dispense with its annual Pesticide Reporting Program.

The proposed dismantling, which the USDA said was due to a lack of funds to continue the already scaled-back program,, drew the collective opposition of no fewer than 44 environmental, health advocacy and sustainable farming organizations, all of which signed a letter of protest to Secretary of Agriculture Edward Schafer.

The reports issued under the program, administered by the National Agricultural Statistics Service (NASS), are "the only reliable, publicly available source of data on pesticide and fertilizer use outside of California," the letter noted.

"Elimination of this program will severely hamper the efforts of the USDA, the Environmental Protection Agency (EPA), land grant scientists,



and state officials to perform pesticide risk assessments and make informed policy decisions on pesticide use. In particular, USDA and EPA will have difficulty tracking their progress in meeting their policy commitments to reduce the use of hazardous pesticides through adoption of Integrated Pest Management (IPM) practices and to support IPM research.”

“Americans are rightly concerned about the adverse impacts of pesticides on human health and the environment,” said Charles Benbrook, Chief Scientist at The Organic Center, in a press release. “Without USDA’s data, our organizations will be severely hampered in our ability to carry out research on the impacts of pesticides and offer informed input on decision-making regarding pesticide use and pest management systems in American agriculture.”

“Denying the public and regulatory agencies this critical information is bad science and bad public relations,” added Jennifer Sass, Senior Scientist at the Natural Resources Defense Council.

In addition to asking that the reporting program be continued, the coalition requested that NASS reinstate its more expansive program of the 1990s, which involved surveys of chemical use annually on major field crops (corn, soybeans and cotton) periodically on other field crops, and biennially on fruit and vegetable crops.

As of this writing, the groups were awaiting a response from the secretary, a former North Dakota governor who assumed the post in January 2008.



**PESTICIDES:
A NEW SUSPECT IN AUTISM**

Could pesticide exposure be linked to the current epidemic of autism? A recent California study indicates that there well might be a connection.

The study, conducted by the California Department of Public Health and published in July 2007, focused on maternal pesticide exposures for 465 children suffering from autism spectrum disorder (ASD) who were born during the period 1996-98, as compared to 6,975 control subjects—that is, non-autistic children living in the same area.

It found that mothers who had been exposed to the organochlorine insecticides dicofol and endosulfan (also known as Thiodan) during weeks one through eight of pregnancy had more than six times the chance of giving birth to an ASD-afflicted child than those living away from pesticide-treated areas. The period of time involved is considered critical to the fetal development of the central nervous system.

Children born to 29 women residing close to fields sprayed with the chemicals were found to have the highest rates of autism. The rates went down the farther away from the fields subjects lived.¹¹



**YOUR DIETARY RISK INDEX:
HOW ‘HEALTHY FOODS’ SCORE
IN TERMS OF TOXICITY**

What’s perhaps most disturbing about the apparent failure of government regulators to comply with the Food Quality Protection Act is that it continues to compromise the safety of many of the food choices American families are most encouraged by health and nutrition experts to make.

Not that all such risks are created equal. Some conventionally grown commodities are far more apt to contain toxic chemical residues than others, according to a breakdown of dietary risks provided in the Organic Center’s recent State of Science Review, “The Organic Option.”

To assess the health risk posed by a particular crop, the center has devised a “dietary risk index” or DRI. The method it uses is

**A ‘REAL-WORLD’ APPROACH
TO RESIDUE TESTING**

When produce is tested for pesticide residues, is it washed first?

That’s a question we put to Organic Center Chief Scientist Charles Benbrook. He answered that the testing is done in accord with “real-world” criteria set by the U.S. Department of Agriculture, meaning that each item is tested in the same state in which it would typically be consumed. A banana, for instance, would first be peeled, whereas an apple would usually be washed.



one that takes into account both the residue levels of pesticides typically found in various fruits and vegetables and how toxic each pesticide is considered to be. It may also reflect combinations of different pesticides found on a single item. But an important thing to keep in mind is that the higher the DRI number of a particular food, the more residues it has been found to contain.

According to the report, conventionally grown fruits and vegetables from domestic sources that scored highest on the dietary risk index were green beans (330), cranberries (178), sweet bell peppers (132), celery (104), nectarines (97), cucumbers (93), potatoes (74), tomatoes (68), peas (66), strawberries (956), lettuce and peaches (54), pears (48), apples (44) and cherries (32).

ANOTHER 15 GOOD REASONS TO GO ORGANIC

Domestic Produce DRI

Domestically grown fruits and vegetables with the highest pesticide Dietary Risk Score (always buy organic whenever possible):

- Green beans (DRI 330)
- Sweet bell peppers (DRI 132)
- Celery (DRI 104)
- Cucumbers (DRI 93)
- Potatoes (DRI 74)
- Cranberries (DRI 178)
- Nectarines (DRI 97)



Imported Produce DRI

Imported fruits and vegetables with the highest pesticide Dietary Risk Score (while this list includes most of the important winter imports in the U.S., some items, such as peppers, lettuce and tomatoes, can still be found organically—usually hothouse—grown in the U.S. during the winter months):

- Sweet bell peppers (DRI 720)
- Lettuce (DRI 326)
- Cucumbers (DRI 317)
- Tomatoes (DRI 142)
- Grapes (DRI 282)
- Nectarines (DRI 281)
- Peaches (DRI 266)
- Pears (DRI 221)

For the complete study, visit The Organic Center at: www.organic-center.com and download *Simplifying the pesticide risk equation: the organic option*.

Those figures, however, weren't nearly as high as the DRI for imported produce. In fact, the average DRI score for imported fruits found to have the highest residue levels was more than twice that of the domestically grown fruits on the list—152 vs.73. Imported vegetables averaged 212 as compared to 115 for those grown in the U.S.A., the figure for imported cucumbers, for example, being more than three times that of their domestic counterparts.



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The highest DRI for imported items went to sweet bell peppers at a whopping 720, followed by lettuce (326), cucumbers (317), grapes (282), nectarines (281), peaches (266), pears (221), celery (170), tomatoes (142), green beans (93), strawberries (78), broccoli (62), peas (48), cherries and cantaloupe (31), and carrots and apples (30).

By contrast, some fresh fruits and vegetables were found to contain minimal pesticide residues. They include citrus fruits (the 2006 DRI for grapefruit being around two), and bananas, pineapples and onions, all scoring less than one. Several dried fruits, such as raisins, also scored quite low. Other items found to contain “far fewer and generally less risky pesticide residues” included grain and grain-based products, except for relatively low levels of insecticides used during storage; beef, pork, lamb and poultry, and some processed foods (tomato paste, for instance, had a DRI 15 times lower than tomatoes themselves).¹²

What’s the best way to put this information to use? As a rule, if you have to pick and choose, try to purchase select organic fruits and vegetables rather than conventional ones that have high DRI numbers and avoid conventional imports whenever possible. This is especially vital if you are pregnant or have young children in your family.

But don’t interpret the fact some commodities might contain relatively small amounts of pesticides residue to mean there are no significant differences between the conventionally grown and organic varieties. In the chapters that follow, you’ll discover a



number of other important reasons to include as many organic foods as possible in your family’s diet.