



June 2009

## Sherman Mills grower named chairman of USPB

By Scott Christie, Managing Editor



Spring is a busy time of year at Three Oaks Farm in Sherman Mills, Maine. There are storage potatoes to ship out and the fields and equipment have to be prepared for the start of planting, said Tom Qualey, who farms with his brother John.

This season has started off with gorgeous weather, Qualey said, and some Maine growers were getting planted started early. The region was about a week ahead, and he had his planters lined up ready to go before Mother's Day.

The Qualey's, the fifth generation of Irish immigrants, haven't always been potato farmers, despite the Irish connection. Tom and John took over the farm from their dad, and at the time it was a dairy farm. Their dad convinced them to get away from that business, so they moved into growing potatoes and canola. Last year they had about 340 acres of potatoes, and their highest acreage is about 550 acres. Qualey said he's not sure where they would fall this season,

but it would probably be about the same as last year.

Sherman Mills isn't the area most people think of when they hear about Maine potatoes. The town is about 75 miles south of Presque Isle, Maine, where most of the state's potato production is. The area doesn't look very agricultural, either, Qualey said. It's heavily forested and the good land is tucked away behind trees, so anyone driving through might not even know there are fields. That lack of available good land has limited the production in the area, so there aren't many large farms like those in other areas.

Three Oaks Farm grows all processing potatoes - Frito Lay varieties - that are under contract. Although he hadn't seen the contracts as of early May, Qualey said he and other processing and chipstock growers were pleased with the price they'd been told. He said the McCain contracts should be up about \$2.25 and other chip contracts were up about \$2. Maine growers didn't receive an increase last year, so they're in pretty good spirits this season, Qualey said.

Maine has always been an important potato growing region, but the number of growers has dropped considerably in the last 25 to 30 years. Qualey said when he was in high school there were probably 25 potato growers and 25 dairy farms in the Sherman Mills area. Now there are only three dairies and three potato farms, including his.

"The last three of us picked up the good land," Qualey said.

The same thing is happening throughout Aroostook County.

"Agricultural opportunities in this area are dwindling," he said.

But that hasn't deterred the Qualeys. They're hands-on farmers who don't have plans on quitting any time soon. Tom's wife, Linda, is the CEO of a nonprofit organization in the area and she does the books for the farm, and when they're really busy he'll talk her into running some of the equipment. John has kids that help out on the farm, too, but Qualey said so far none of them seem interested in taking over the farming operations.

Qualey's been involved in the Maine potato industry and the national organizations for a number of years. He serves on the Maine Pesticide Board as an agricultural expert and has served on United States Potato Board committees for the last six years. At the 2009 annual meeting in Denver, Qualey was named chairman of the United States Potato Board, a spot vacated by Bart Connors of Pasco, Wash.

There are many exciting things happening, but there's a lot of uncertainty in the market as well. Qualey said he has a good roadmap to follow and his job was to make sure USPB activities stick to it.

"My goal is to really stay with the long range plan," he said. "If we stay on course with that then I'd be really, really excited."

One of the bright spots is the export market. Although the strong dollar has slowed that down a bit recently, the board is working to open new markets. One of the most promising he's seen is Vietnam. John Toasperm, vice president of international marketing, visited the Asian country in April and made headway into opening the country. Qualey traveled with the potato board to Hong Kong and Singapore last year to participate in chef training programs, where he had the chance to meet two Vietnamese chefs. He said they were very excited about the potato products and Qualey said there could be a lot of opportunity for growth in that market.

Maine growers don't typically export to the Pacific Rim, so other growers would ask why he would travel there with the board. He would tell them that it benefits all growers to open markets and increase exports, "because every potato that gets shipped over there is one fewer that comes over here."

With federal programs being cut, Qualey said the USPB was watching the situation closely because the export programs could be affected.

"We're hoping we're keeping our matching money for exports," he said.

Another opportunity for growth is here in the United States. The board is developing innovative new products for U.S. consumers to increase the consumption of fresh potatoes and position them as healthful, convenient products.

"We're working on some great things," Qualey said.

Hopefully, the economy will pick back up this year, but Qualey is working with the board to ensure that money gets spent on the right things so growers can see a positive return on their investment.

"We're in some tight budget times and since I've taken over we've been very careful about what we spend money on," he said.

Qualey will host the USPB summer meeting Aug. 3-7 in Bangor, Maine. It will be held at the Hollywood Slots Hotel, a brand-new hotel. The location isn't near the big potato growing areas of Maine, but Qualey said the site will be easier to travel to for board members from out of town and would help keep costs down with a good rate and eliminating the need for rental cars. Board members can register for the event by e-mailing Robin Vest at [rvest@uspotatoes.com](mailto:rvest@uspotatoes.com)

BY LINDSAY KNAPP  
PHOTOGRAPHS BY CARRIE BOSTICK HOGE

## *back cove's budding beauty*

A demonstration garden is designed to inspire better gardening practices

For years, whenever I walked the Back Cove in Portland, I shunned the noisier eastern path and kept to the relative quiet of the western curve, pulled along by the rhythm of the trees. These days there is reason to head east, where a new group of silver maple, shadbush, river birch, American hornbeam, white spruce, jack pine, and red oak trees, just to name a few, catches the eye. These plantings are part of a demonstration garden conceived by the Maine YardScaping Project, a group that came together over concern about the chemical pollution involved in certain methods of lawn and plant care and the increasing contamination of our waterways.

Spearheaded by Gary Fish, who manages Maine's Board of Pesticide Control, this group includes an impressive collection of volunteers, local businesses, and agencies from around the state. The City of Portland provided the land, a two-and-a-half-acre plot abutting I-295, and grants were obtained from

the Environmental Protection Agency and the Davis Conservation Foundation. Local nurseries either reduced their prices or donated the materials outright, and volunteers came from Master Gardeners, the Maine Conservation Corps, and the community at large. The idea was to create a landscape that would inspire Maine homeowners to create and maintain ecologically sound yards.

The first phase of the Back Cove YardScaping Demonstration Gardens, installed last June, used low-maintenance, pest-resistant plants most suited to the path's city and suburban milieu. Native plants represent a large percentage of the plantings, which includes 1,000 trees, shrubs, and perennials. They run the gamut from rugged jack pine to graceful, elegant river birch. There's my favorite elderberry, *Sambucus nigra*, along with bayberry, viburnum, and the under-used, under-rated sweetfern. There's bearberry and low-bush blueberry, both ideal groundcover substitutes for grass, but for those who can't live without, the site also contains three ornamental grasses.

In the center of the display appeared an intriguing feature that resembles a squared version of an infinity symbol etched in long, elegant pieces of vintage granite. It will be used for signage, as will a kiosk at the garden's entrance.

Still in its infancy, the state's first public YardScape project in Portland's Back Cove demonstrates how to plant for a more environmentally friendly home landscape. Echinacea and ornamental grasses (pictured here) are expected to fill out this year. In the works for 2009: a wildflower garden and an informational kiosk. The granite shape will be used for signage.



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## THOMAS CONNOLLY

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Like all new installations, the project hit some snags in 2008, a year Mother Nature was not exactly kind to gardeners. Although the weeds had a grand time, the garden struggled to gain its footing—the paths were often ponds, and a surprising amount of seedlings failed.

The potential for drama, for fun, for something new alongside an almost mundane showcase of every available variety caused me to feel a bit disappointed by this first phase of the project. The sacrifice of design for the broadest possible sampling of material seemed like an opportunity missed. Perhaps the trade-off was necessary, in order to exhibit the widest array of plants. For me, that very breadth dulled the overall effect and reduced the site to little more than a living encyclopedia. The space could use a bold stroke.

But maybe that's not the point. The YardScape Project urges us to reconsider the lawn, to plant things that require less care, to expand the definition of gardening. It's a noble goal. My own wistfulness aside, I'll be watching as phase two begins this year. Scheduled for installation June 18-20, it will be geared toward suburban and rural landscapes and will include a wildflower garden and a turf lawn that uses alternative means of pest and weed control. Drainage work on the paths is also planned. This will involve both mechanical means for diverting water and the shifting of some plants so that water-lovers are placed adjacent to moist areas.

That in itself may loosen the restraints and allow the designers to express a freer hand. I hope that the parts of this landscape that inevitably die off will be replaced with plants that, to paraphrase Thoreau, show an eye turned less to the civil and social and more toward the vigor and freedom of the forest and the outlaw.

In any event, the project has brought plenty of visitors and attention to the goal of healthy and appealing landscapes with a minimal use of water, fertilizer, or pesticides. The hope is that these visitors will consider environmental consequences as they maintain their own lawns and gardens. ★

## did you know?

A lawnmower pollutes as much in one hour as an automobile driving 350 miles. | Shrinking your lawn and growing hardy plants will reduce costs for gasoline, pesticides, fertilizers, water, plants and planting materials. | If used incorrectly, pesticides pose risks to people, pets, and beneficial creatures and plants. | The pesticides and fertilizers you apply to your yard may wind up in our waterways. At risk are lakes, streams, and eventually the ocean.

Source: *Maine Yardscaping*. To volunteer or find out more, go to [yardscaping.org](http://yardscaping.org).

## yardscaping principles

promote low-input lawns and landscapes | promote common-sense pest management | reduce reliance on pesticides, fertilizers, and water | reduce runoff | promote vegetative buffers | promote right plant, right place, right use | promote native and non-invasive alien plants | promote yardscape diversity | create wildlife habitats | reduce lawn area

# Dramatic Rise in Pesticide Use

A recent tabulation of pesticides sales in Maine shows that home use of pesticides and fertilizers has increased by 700 percent in just 12 years. Three-quarters of those purchases were weed and feed-type products, comprised of several fertilizer and pesticide combinations.

The cause? “The increase in usage can be attributed to suburban sprawl, expanded use on commercial and large condominium properties, and new products like mulch that has been pre-treated with herbicides that attack weeds before they sprout,” says Gary Fish of the Maine Board of Pesticides Control. He tracks the figures from manufacturers and wholesale distributors and the self-reporting (required by law) by lawn care service providers, such as Scotts, TruGreen, and Lawn Dawg.

Besides being the person responsible for licensing all pesticide users in Maine, Gary is one of the founders of BayScaping, the ecological lawn care education program started by Friends of Casco Bay and the Maine Board of Pesticides Control in 1999. Rather than being discouraged after nearly ten years of outreach education, he claims he’s optimistic. Gary predicts, “I feel that 2008 will be the peak year for lawn pesticide sales. I am seeing a change in people’s attitudes. A lot more people are listening to us. Surveys show many more lawn care businesses and customers want to manage their lawns and landscapes using less inputs.”

To our north, despite court challenges by lawn-spraying companies, many Canadian towns and entire provinces have banned the sale of lawn pesticides and fertilizers for “cosmetic

Pounds of Home Use Pesticides



Over the past 12 years there has been a dramatic 7-fold increase in the home use of toxic pesticides in Maine. Friends of Casco Bay’s BayScaping Program is spreading the word about effective alternatives to these chemicals.

purposes,” simply to maintain the appearance of lawns and gardens. Gary notes, “Here in Maine, some towns, including Camden, Rockport, Castine, Brunswick, and Kennebunkport, have limited the use of pesticides for aesthetic purposes through municipal policies or full-blown ordinances.”



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## Portland Press Herald    Maine Sunday Telegram

### DOWN TO EARTH

## Greener lawns not 'greener'

JOHN RICHARDSON

May 16, 2009

If the lawns in your neighborhood look thicker and greener than they used to, there's an easy explanation.

The use of lawn fertilizers and pesticides increased a whopping sevenfold during the 12-year period ending in 2007, according to the state Board of Pesticides Control. In 1995, Mainers spread about 800,000 pounds of products on their lawns. In 2007, the number was 6.2 million pounds.

Gary Fish, the board's manager of pesticide programs, compiles the totals from wholesaler and applicator reports and has been wondering how high they can go.

Lawn chemicals – and carpet-like front yards – were unheard of when he grew up in Farmington, Fish said. But in the past 12 years, suburbanization has hit much of the state.

"I think that it's a lot of new subdivisions, and a lot of people moving into those subdivisions come from south of here, where lawn care has been the standard for a long time," he said.

Fish knows, having worked as a horticulturist for ChemLawn in Massachusetts and New Hampshire in the 1980s. "They saw this trend a few years back. I think we're lagging behind," he said.

And, Fish said, one green lawn tends to lead to another.

"I also think that it's keeping up with the Joneses," he said. "People see it up and down the neighborhood, and they decide it's something they want, too."

It's no coincidence that at the same time lawns were getting greener, phosphorous and nitrogen began turning Maine's lakes and coastal bays greener, Fish said.

Fish and others have been trying to reverse the trend for several years with chem-free programs, including a Yardscaping demonstration project near Portland's Back Cove.

In the meantime, Fish is hopeful that our appetite for lawn chemicals has peaked.

For one thing, the number of commercial lawn pesticide applicators coming in to take licensing tests is down significantly, he said. That's mostly due to the economy, though, and might not be a long-term trend.

Other signs of change appear to be bigger than the economy.

Fish said he's getting more calls now from people who want to hire "green" landscapers who use fewer chemicals. And he's got a long list of companies helping to develop a certification program so they can prove to customers that they want the same thing.

The science of lawns has improved, too, so that landscapers are less likely to treat a yard the same way they treat a golf course. Some chemicals don't help the grass and can even make lawns more vulnerable to diseases or insects.

Hardware stores and other retailers around the state, meanwhile, are now posting state-mandated signs discouraging the use of lawn fertilizers with phosphorous, a nutrient that does little good for mature lawns but turns lakes green.

And a several coastal communities – Brunswick, Kennebunkport, Camden, Rockport and Castine – have adopted ordinances or policies that limit or discourage the use of lawn chemicals that can threaten groundwater or shellfish.

"I see definitely a lot more people who are trying to effect change who are not just the typical extreme environmental folks," Fish said.

That could mean the numbers are about to head down, even in the suburbs. Because if the Joneses are cutting back on the lawn chemicals, their neighbors probably won't be far behind.

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[<< back to story >>](#)

5/11/09 |

## EDITORIAL

# Pesticide Drift

Debate over notifying neighbors of agricultural spraying centers on a fundamental question: Who has the responsibility to protect residents from potential harm? It is the residents themselves or the companies doing the spraying?

So far, the state has left most of the responsibility to the residents. A bill currently under consideration in the Legislature would change that. It should be carefully considered.

LD 1293, sponsored by Rep. Seth Berry, D-Bowdoinham, would require land managers to notify neighbors prior to the application of pesticides using aircraft or air-carrier equipment, which can allow the chemicals to drift onto nearby properties. It would leave it to the Board of Pesticides Control to establish a registry of residents wanting notification of pesticide spraying within 1,320 feet of their land. The existence of the registry would be publicized through notices at town offices and on the pesticides board's Web site.

This is a good concept, although many details remain to be addressed. First, the state, with shrinking financial resources, should not be responsible for managing a registry. It should be up to growers and land managers who use aerial spraying to contact neighbors and compile a list of those who want to be notified before spraying occurs. This could be done for a couple of years with a report back to the Legislature about how this system is working.

A major objection to notification is that calling numerous abutting landowners can be onerous. The process can be simplified by using e-mail. This would allow a landowner to prepare one notice and instantaneously send it to dozens or even hundreds of people. Phone calls could be made to the few people without e-mail access.

Such details have stalled progress on notification improvements, which have been discussed by the Board of Pesticides Control for more than two years. The result of that discussion is LD 972, which establishes a notification registry, but leaves it up to people who want to be notified to put their names on the list. This is insufficient.

Pesticides play an important role in pest management and have increased yields for many crops. At the same time, pesticide exposure has been linked to cancer and birth defects. The U.S. Geological Survey has been assessing pesticides in streams and groundwater for decades. In its most recent study, it found at least one pesticide in every stream it surveyed in the country and in half the wells.

It seems only reasonable that growers should want to protect their neighbors from the potential detrimental effects. It should not be up to the neighbors to ensure they are protected.

5/13/09

## Panel to forward pesticide recommendations

By Kevin Miller

BDN Staff

AUGUSTA, Maine — A legislative committee has failed to reach consensus over the hot-button issue of aerial spraying of pesticides and, instead, will send at least three recommendations on a bill to the full Legislature.

The Board of Pesticides Control has been working with various interest groups for more than two years to adopt revisions to Maine's pesticide application laws that would better protect the public without placing an undue burden on the farming community.

Earlier this year, the board completed work on new rules that would have created a 200-foot buffer zone between "sensitive areas likely to be occupied," such as homes and schools, and areas where pesticides are being sprayed by plane or helicopter.

The rules, which are subject to legislative approval, also stated that any detectable pesticide residue in off-target areas was enough proof to trigger a possible review of whether the "pesticide drift" rules were violated.

But the majority of lawmakers on the Agriculture, Conservation and Forestry Committee disagreed with the proposed rules.

Six committee members voted Tuesday to eliminate the 200-foot buffer and, instead, make any buffer site-specific. The six lawmakers also said they were uncomfortable with the threshold of "any detectable residue" on pesticide drift and, instead, went with a 1 percent residue level. The current drift standard is 20 percent.

Two committee members voted to accept the rules, as presented by the board. Two lawmakers voted to reject the rules altogether.

"We're making rules to punish 99 percent of the farmers because of the one person out of 100 who breaks the rules," said Rep. Peter Edgecomb, a Caribou Republican who voted to reject the Board of Pesticides Control proposal.

Representatives of the Maine Farm Bureau and the Wild Blueberry Commission of Maine expressed concerns about the rules' effects on the agriculture community.

But Heather Spalding, associate director of the Maine Organic Farmers and Gardeners Association, disagreed that the board's proposed rules would be overly punitive on farmers. Organic farmers want tighter drift standards to keep their produce and fields from being inadvertently tainted by use of pesticides on nearby fields.

"If there is a detectable level, then it just gets the conversation started," Spalding said after the vote. "It doesn't necessarily mean a violation or an automatic fine."

Spalding also pointed out to the committee that the board's proposed rules already contained significant compromises from those who want tougher regulation of pesticide spraying.

The committee did not take up another controversial board proposal dealing with farmers' and pesticide applicators' obligations to notify neighboring property owners before spraying. The committee is expected to hold a work session on that issue on Thursday.

# Bills Zero In On Aerial Pesticide Applications

May 12, 2009    *Reported By: A.J. Higgins, Maine Public Radio*

A legislative panel is making progress in its efforts to merge several bills designed to address the problems of drift and contamination from aerial pesticide applications. Proponents of the new restrictions want better notification before spraying takes place, as well as increased buffer zones and precise thresholds set to determine what level of contamination constitutes drift. Opponents maintain there haven't been enough cases of pesticide drift in the state to warrant the legislation.

In attempting to craft bills that protect farmers who use aerial pesticides and those who do not, state Sen. John Nutting, a Leeds Democrat, says the enforcement of any new laws will fall to the Maine Board of Pesticides Control, a panel that continues to struggle with what constitutes aerial spray drift. "If we enact this into law and down the road we get a totally different board that's a concern of mine. That could go about this very very differently than the current board. What the answer is I don't know."

Nutting and the other members of the Legislature's Agriculture, Conservation and Forestry Committee spent the afternoon wrestling with what percentage of drifting pesticide spray constitutes drift to another farmer's field. Should it be as much as 20 percent or something as little as 1 percent? Heather Spaulding, associate director of the Maine Organic Farmers and Gardiner Association says that members of her organization lose money every time they can't certify their crops as 100 percent organic.

"Right now the rule is that you can drift up to 20 percent of a direct hit onto somebody else's property and that's legal under Maine law. So they're hopeful that they'll be able to bring that down to a more reasonable level and if there is a detectable level of residue then that gets a discussion started and that allows somebody to say 'my property has been drifted on and I'd like to have an investigation'."

In addition, Spaulding and other organic farmers want a quarter-mile buffer zone between spray areas to ensure their products are free from chemicals they perceive to be contaminants. She says other states observe similar buffer zone sizes. "New Hampshire has a rule on their books for aerial spraying requiring notification for aerial spraying in rural areas, and also two of the biggest agricultural counties in California have quarter mile buffer zones around schools and sensitive areas likely to be occupied."

However, John Jemison, a member of the Maine Board of Pesticides Control, says his panel simply lacks the criteria needed to establish what threshold of pesticide drift constitutes contamination.

Says Jemison, "We can't scientifically come up with a what is a reasonable amount of drift necessarily to allow. We don't have enough scientific data to suggest that my child or my neighbor's child could be walking around, crawling around the backyard, and if you have one part per billion, one part per million, one percent...we don't know what's going to be safe for those young people or my daughter."

State Sen. Roger Sherman, a Houlton Republican, has a different view:

"I guess the question would be...what's the problem?"

Sherman says the pesticides control board has only received five complaints about pesticides drift over the last five years. He believes that many organic farmers are simply trying to legislate an exclusive policy for themselves at the expense of non-organic commercial growers who use pesticides. "I think you have a group of people sitting there that wants to wrap up some areas of the state for organic, grown material, and this is a way to do it. There's a half a dozen bills here and like bills across the country where they've been using fear tactics. People aren't aware of how sprays operate. Any drop would - people are scared to death, have been made scared to death of sprays in general."

The Committee ultimately found themselves locked in a three-way split over the pesticide drift bill.

# KENNEBEC JOURNAL

## Morning Sentinel

### Maine may get cease-fire in pesticides war

05/18/2009

It shouldn't be this hard.

For years, state lawmakers, regulators and farmers have discussed, debated, argued about and then discussed some more how to establish an effective program to notify neighbors when farmers spread pesticides.

The arguments have pitted conventional farmers against organic ones, and the Maine Department of Agriculture against environmental activists who charge the state is too closely aligned with pesticide users. The stakes, say advocates engaging in hyperbole on both sides, include the survival of either conventional agriculture or organic farming, as well as the health and safety of Maine residents.

Here's the issue, minus the hyperbole: Pesticides are toxic and have been linked to cancer and birth defects. They're meant to be toxic to pests, of course, which is why they're used. But if and when pesticides drift or find their way into groundwater or adjacent farms' crops, they can pose a danger to humans, not just crops and wildlife. And if an organic farm adjoins a conventional farm where pesticides are used, contamination of the organic farm's crops by pesticides used next door can endanger the organic farm's certification -- and thus that farmer's livelihood.

So knowing which farms use pesticides is important for neighbors. And knowing when they're going to be used allows neighbors to protect themselves and their crops.

But as usual in Maine, change is hard. Why should conventional farmers have to start notifying people they're spraying pesticides, when for decades, they haven't had to? And farmers are very busy people who operate on razor-thin margins. Would a notification requirement be too onerous, especially for farmers with huge spreads?

For too many years, conventional farmers have resisted this reasonable accommodation to the changing world and the needs of Maine's growing organic farming sector. But this legislative session may finally provide a breakthrough on the stalemate over notification.

Just last week, lawmakers on the committee with jurisdiction over agriculture appeared to have come to agreement that there should be some sort of requirement for farmers spraying pesticides to notify their neighbors.

While the details of the amended bill have not yet emerged from the committee analyst's office, here's what we believe should be made law:

- \* All farms that use pesticides should notify the state that they do so. A list should be kept by the state for public view, both in hard copy as well as online.
- \* Those abutters to farms who want to be notified when pesticide applications occur may register with the state. Farms that do aerial pesticide spraying and use ground-based sprayers (such as those used in Maine orchards) must consult that list and notify any abutters when they're going to spray.

Over the years, the arguments about such notification requirements and lists have bogged down in what kind of notification, who should keep the lists and whose responsibility it is to do the notifying.

It's time to get past the details and get an effective set of laws and rules on the books that allow Maine residents and farmers to protect themselves from the potentially toxic effects of pesticide spraying.

*Editorials represent the opinion of the Editorial Board of this newspaper: Publisher John Christie, Executive Editor Eric Conrad and Opinion Page Editor Naomi Schalit.*

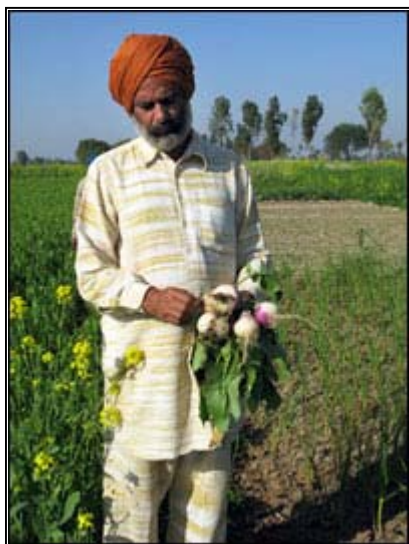
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June 1, 2009

World

**In India, Bucking The 'Revolution' By Going Organic**

by Daniel Zwerdling

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Daniel Zwerdling/NPR

Amarjit Sharma, a farmer in India's Punjab region, grows organic vegetables for his family of seven. Until four years ago, though, Sharma had embraced synthetic fertilizers, pesticides and modern, high-yield seeds — and been part of the the so-called Green Revolution of the 1960s and '70s.



Daniel Zwerdling/NPR

Sharma, other organic farmers and a visitor stand in a field growing a mix of wheat, mustard and beans. Conventional farmers normally plant only one crop in a field to maximize production. Organic farmers grow a mix, which replenishes the soil and helps control pests. Sharma says that he grows more food than his

Morning Edition, June 1, 2009 · Indian farmer Amarjit Sharma grows wheat and other crops on five acres in the heart of the region known as "the breadbasket of India," the fertile fields of Punjab.

Until four years ago, he was the kind of farmer whom government leaders and agricultural scientists hailed as a model in the developing world.

But now, he has gone organic and is part of a quiet but growing rebellion, which could affect the world's food crisis.

Decades ago, when the modern, chemical-reliant system of farming — the so-called Green Revolution of the 1960s and '70s — swept across his region, Sharma became one of its biggest boosters. He abandoned traditional methods and embraced synthetic fertilizers, pesticides and modern, high-yield seeds, much like any farmer in Iowa.

And for about 20 years, Sharma says, the Green Revolution worked wonders. His crop yields and his income soared. But then, things unraveled.

"The Punjabi farmer's problems had reached such levels, he wasn't making any profit," Sharma says, through an interpreter, as he walks through rows of his waist-high wheat crop.

**Kicking The Chemical Habit**

Sharma's soil was deteriorating, so he had to buy more and more fertilizer every year to grow the same amount of crops. No matter how much pesticide he sprayed, insects still destroyed large portions of his crops. Sharma says he "realized the vicious circle in which we were stuck."

In 2005, Sharma kicked the chemical habit.

Environmental groups in India estimate that more than 300,000 farmers like Sharma have switched to organic growing methods in recent years, or have started the transition from conventional to organic farming. Comparisons between India and the U.S. are difficult because their economies and cultures are so different. But consider this: India has about three times the population of the U.S., but 30 times more organic farmers than the U.S.

Sharma's story symbolizes the dilemma that developing countries are facing around the world: What's the most sustainable way to grow enough food? The answers will eventually affect people from India to Indiana, because the world's population is booming — and if fast-growing countries like India can't feed themselves, it could trigger more global instability.

family can eat, so he shares with other families.



Daniel Zwerdling/NPR

Sharma's daughter-in-law performs one of her morning rituals, making chapatis for the family. The family grows the wheat for the chapatis.



Daniel Zwerdling/NPR

Sharma and other organic farmers from the village of Chaina run a seed bank out of Sharma's house, where they collect and sell seeds from heirloom crops that are disappearing in India.



Daniel Zwerdling/NPR

Sharma's wife forms patties out of cow dung in the courtyard of the family's

Agribusiness leaders and many government officials are convinced that genetic engineering will help prevent a world food crisis. Firms like Monsanto Co. have been inserting genes from animals and bacteria into plants so they can grow faster with less water and resist insects.

Monsanto's India spokesman, Christopher Samuel, says the company's advances will double the yields of major crops over the next 20 years, while reducing the amount of land, water, fertilizer and pesticides needed — in the process "protecting the environment and its natural resources," he says.

But activists in India are trying to block Monsanto and other companies from introducing genetically engineered food crops. They point out that it took decades to raise the alarm about serious, long-term side effects of the Green Revolution. They also say that, so far, there are not good studies examining whether biotech food crops could cause long-term problems.

### Organic Farming Spreads In India

So a network of environmental groups has been traveling from village to village, preaching that organic farming is the only way that farmers can survive.

Sharma heard their sermon and became a believer.

He argues that organic means much more than simply not spraying synthetic fertilizers and pesticides. It requires farming in a more thoughtful way, he says.

For example, government policies under the Green Revolution have rewarded farmers for growing "monocultures" — vast areas of a single crop, such as wheat or rice. That can help boost yields, but studies show it has leached crucial nutrients from Punjab's soil, requiring farmers to use five to 10 times as much fertilizer as they used to about two decades ago.

Organic farmers like Sharma grow a mixture of crops in the same fields as their wheat or rice, including types of beans that replenish the soil — so they don't have to buy fertilizer. By growing a variety of crops, they also attract beneficial insects, which take the place of synthetic pesticides.

The difference between Sharma's farm and his chemical-using neighbor's is visible. The neighbor's fields are like an endless green shag carpet. Sharma's farm is like a busy quilt — a patchwork of wheat, beans and mustard plants exploding in bunches of bright yellow flowers.

### Mixed Results, Hope For The Future

In the courtyard of his house in the village of Chaina, Sharma reviews his balance sheets.

"Our rice yields under the organic system are almost as good as before," he says, as his wife scoops up cow manure with her hands and pats it into disks to fuel the cooking fire. "And we're spending much less money on inputs, since we're not buying pesticides and fertilizer — although labor costs have increased."

On the downside, Sharma concedes that since he went organic, his wheat yields have fallen in half.

compound. After the patties dry, the family uses them to fuel their cooking fires.

But he is optimistic. "I've been farming organically only for four years now. My land is still recovering from the Green Revolution. So I'm sure my yields will increase," he says.



Daniel Zwerdling/NPR

A local vendor sells his morning harvest to a villager on the street outside Sharma's compound. Sharma says his family only eats their own organic produce.

Imagine how much organic farmers might be able to produce, Sharma says, if India's government spent even a fraction of the billions of dollars it has spent promoting chemical farming.

"We are not worried about how much yield we will get," he says. "We are worried about our families, and our children. We want them to be healthy. We will never sell or eat poison."

India's organic movement is getting some support from influential voices in the agriculture industry. Late last year, the Punjab State Farmers Commission, which advises the agriculture department, published a report that angered organic activists by concluding that if all farmers across India went organic — including in Punjab, the most intensively cultivated region — food production would drop and "seriously jeopardize the national food security."

But the commission's chairman, Gurcharan Kalkat, says the researchers reached another conclusion: "For 70 percent of the area in the country (outside Punjab), farmers must go for organic farming," he says, because organic methods will replenish the soil and improve their productivity. As for Punjab, the report concluded that 20 percent of its farmers could go organic and remain productive, too.

And the report says government scientists should begin to help them now.

"They should collect all the new [organic] techniques," Kalkat says, "so that over the next two years we are in a position to say, 'If you want to do organic farming, this is the way to do it.'"

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June 1, 2009

World

## In Punjab, Crowding Onto The Cancer Train

by Daniel Zwerdling

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Daniel Zwerdling/NPR

Each night, "the cancer train," as locals have dubbed it, departs from this platform at the station in Bathinda, in India's Punjab state. It travels overnight to the town of Bikaner, where the government's regional cancer center is located.

[All Things Considered](#), May 11, 2009 · Every night at about 9:30, Train No. 339 pulls into the shabby station in the northern Indian farm town of Bathinda, in Punjab state.

Locals call No. 339 by a chilling name — "the cancer train." It routinely carries at least 60 cancer patients who make the overnight journey with their families to the town of Bikaner for treatment at the government's regional cancer center.

People say they never used to see so many cancer patients in this farm region. Cancer was considered an urban disease, suffered by people who lived in cities choked with industry and pollution.

But research by one of the most respected medical institutes in India recently found that farming villages using large amounts of pesticides have significantly higher rates of cancer than villages that use less of the chemicals.



Daniel Zwerdling/NPR

The train carries roughly 60 cancer patients and their families each night. Some people say that cancer, once thought of as an urban disease, seems to be increasingly afflicting farm villages.

Researchers caution that the findings do not prove that pesticides are causing cancer. But they say the passengers crowding the cancer train are part of a medical mystery that could have repercussions around the world: Are the modern farming methods brought by the so-called Green Revolution of the 1960s and '70s making people sick?

### 'Everyone Is Getting Ill'

On a recent evening, just before the train arrives, waiting passengers wrapped in shawls sit glumly on the bare pavement. Vendors hawk tea and chapattis.

"He has blood cancer," says one man, explaining his upcoming journey by gesturing at his skinny, pale 16-year-old son, Jassa Singh, beside him. Another man points toward his little boy, and says bone cancer has attacked his hip.

A gaunt but dignified-looking man wearing a bright yellow turban says he is going to Bikaner for treatment of cancer in his throat. "It's difficult to talk," he says, pushing a button in a device inserted in his throat that makes his voice sound like a computer synthesizer.

They are all from farm families. "The thing is, production is good," one of them says. "But everyone is getting ill. The health of people around here is deteriorating."

The [Green Revolution](#) swept across Punjab and much of Asia in the 1960s and '70s. In the context of the times, "green" did not refer to what it means today — organic, pesticide-free farming methods. This Green Revolution



Daniel Zwerdling/NPR

Farmer Jarnail Singh helped spur research into whether the Green Revolution — a movement in the 1960s and '70s to introduce American farming methods such as the use of pesticides, fertilizers and high-yield seeds — has been hurting the public's health. The first clue Singh noticed was that peacocks — India's national bird — disappeared from the fields.

## India's 'Green' Revolution

April 14, 2009

['Green Revolution' Trapping India's Farmers In Debt](#)

April 13, 2009

[India's Farming 'Revolution' Heading For Collapse](#)



Daniel Zwerdling/NPR

At the Acharya Tulsi Regional Cancer Treatment and Research Institute in Bikaner, a crowd waits to receive vouchers that will enable patients to get reimbursed by the national railway for taking the cancer train.

## Studies On Pesticide-Cancer Link

[Epidemiological Study of High Cancer Among Rural Agricultural Community of Punjab in Northern India: Researchers at Punjab's School of Public Health conducted this study, published in the \*International Journal of Environmental\*](#)

was led by a loose network of politicians, scientists and philanthropists in the U.S. and other nations, driven by a combination of humanitarian zeal and Cold War-era politics.

They were convinced that if farmers in developing countries like India switched from traditional methods to the American way of farming — with pesticides, fertilizers and high-yield seeds — they could fight hunger and prevent the region from going communist.

The Green Revolution helped India transform itself from a nation that chronically begged for food aid to one that often exports grains. But many farmers in Punjab now wonder if they're paying a price.

## Troubling Signs Led To Study

In the Punjab village of Jajjal, farmer Jarnail Singh played a role in spurring university researchers to study whether the Green Revolution has been hurting the public's health.

Singh says he noticed one of the first troubling clues in the late 1980s and early '90s: Peacocks — India's national bird — disappeared from the fields. Over the years, seven people in his family got cancer — and three of them died. People in Jajjal and surrounding villages got cancer, too.

Singh says he saw that many fellow farmers were overusing pesticides and not handling the toxic chemicals safely.

Many farmers "get totally covered" by pesticides when they spray them — "in their hair, on their body, in their eyes," he says. "And that got me thinking about, why aren't we really looking at that, how that may affect the farmers?"

Critics say government leaders pushed the Green Revolution before they had safeguards in place to protect the population. Although pesticide containers have warning labels, many farmers in countries like India cannot read well. Government agents hold workshops to teach farmers how to use chemicals safely, but those infrequent lessons may not sink in.

## Overuse Of Pesticides

Some farmers in the area say they spray their crops a dozen times or more a season, not one or two times as the pesticide labels instruct. And many say they do not bother wearing protective clothing.

Singh started speaking out about the issue, first at a meeting in the village square, and then at environmental conferences. Several years ago, medical researchers at Punjab's School of Public Health, at the Postgraduate Institute of Medical Education and Research, launched a study to see if the fears were founded.

The study, based mainly on interviews with thousands of families in farming villages, and reviews of their medical records, was released last year. It found that Singh's hunch was right: There was a [significantly higher rate of cancer](#) in villages where pesticide use was heavy.

But the head of the School of Public Health who supervised the study, Rajesh Kumar, cautions that the research does not prove that pesticides were the culprit. He says it is important to remember something about health studies

*Research and Public Health*, to assess whether a correlation between pesticide use on farms and cancer in the Punjab farming community exists. Based on data collected from 1993 to 2003, they found a statistically significant increase in cancer rates in high-pesticide areas, although the study also suggests that industrial pollution, tobacco use and other factors could cause the elevated cancer rates in addition to, or instead of, pesticides. Also, researchers caution that a lack of detailed, long-term records of cancer incidence in India make it difficult to form firm conclusions at this point.

[Effects of Pesticide Exposure](#) on Developmental Task Performance in Indian Children: This study, published in *Children, Youth and Environments*, found that children living in Indian villages that had high pesticide use performed significantly worse, as a group, on memory and coordination tests than children in villages that used less pesticides. The study, conducted in 2003, was modeled on a similar study in Mexico, which set off alarm bells about possible effects of farm chemicals. The director of the study is an independent researcher and writer and a former Greenpeace campaigner.

in general: They are difficult to carry out and often inconclusive, especially in developing countries.

Even in the U.S., which keeps better medical records than most countries, it takes years of research to link a certain chemical in the environment to cancer or other health problems in people. Even then, an epidemiological study can generally suggest a link but not prove it.

### More Years Of Research Needed

Kumar says it would take many more years to demonstrate whether pesticides actually triggered the elevated cancer rates they found in some farming areas.

"It could be industrial pollution," says Kumar, mulling the other possibilities. Or perhaps as many farmers have improved their standard of living, they have smoked more tobacco and changed to unhealthful diets. Or a combination of all those factors, including pesticides, might have driven cancer rates higher, Kumar adds.

Meanwhile, other recent research suggests that pesticides might be linked to other health issues in Punjab. [One study shows](#) that children in villages that use high levels of pesticides score worse on memory and coordination tests.

Scientists caution that this research is not conclusive. But it's potentially troubling, particularly as the world's population keeps booming and the pressure remains for farms to produce high yields.

### Cancer Train Commute Goes On

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The cancer train lurches to a stop in Bikaner's station, under a fat, full moon, at 6 a.m. The passengers file silently down the platform, as though they are sleepwalking, and line up for the motorized rickshaws idling outside.

Soon, scores of them are crowding the hallways of the Acharya Tulsi Regional Cancer Treatment and Research Institute. There is a long line at one counter to get appointments. A crowd presses against another counter, where an employee fills out vouchers that will enable the patients to get reimbursed by the national railway for taking the cancer train.

Jassa Singh, the 16-year-old who has blood cancer, says he is "feeling well," but he and his family look anxious. He is about to get his blood test, which will tell him whether the treatments are working — or whether his life might be running out.

When they get the results, his family and most of the other passengers will head right back to the station for the eight-hour ride home — on the cancer train.

# Beyond Pesticides Daily News Blog

## [EPA Awards Citizens Group for Successfully Banning Pesticide Use in Its Community](#)

(*Beyond Pesticides*, May 11, 2009) The Maine advocacy group, Citizens for a Green Camden, has been presented with a 2009 [Environmental Merit Award](#) by the U.S. Environmental Protection Agency (EPA) in recognition of their significant contributions to environmental awareness and problem solving. This group of concerned citizens works “to make their community a better and healthier place to live [by] focusing specifically on the elimination of poisons being used on lawns in their community,” according to the [EPA press statement](#). Beyond Pesticides applauds EPA and urges more awards like this to end harmful and unnecessary pesticide use.

Citizens for a Green Camden’s [first milestone victory](#) provided information which led to the passage of its policy to eliminate the use of pesticides in parks and on playing fields, which led to a similar policy in neighboring [Rockport](#). They also compare notes with other citizen groups.

The organization continues to work to educate homeowners about the dangers of using poisons on their lawns, running programs and providing written educational materials for residents at the town office. It was able to convince the town Bed and Breakfasts to join their efforts by not using pesticides on their properties, advertising those partners at the local Chamber of Commerce for visitors to see. “The organization continues its education outreach through various other community-based methods to eventually eliminate poisons being used on lawns in the entire Camden community,” continues the EPA press release.

Camden’s [pesticide policy](#) states, “All pesticides are toxic to some degree and the widespread use of pesticides is both a major environmental problem and a public health issue. Federal regulation of pesticides is no guarantee of safety. Camden recognizes that the use of pesticides may have profound effects upon indigenous plants, surface water and ground water, as well as unintended effects upon people, birds and other animals in the vicinity of treated areas. Camden recognizes that all citizens, particularly children, have a right to protection from exposure to hazardous chemicals and pesticides.”

Given out by EPA since 1970, the merit awards honor individuals and groups who have shown particular ingenuity and commitment in their efforts to preserve the region’s environment. This year’s competition drew approximately 49 nominations from across New England. Besides Citizens for a Green Camden, three other awards were given in Maine. The winners were among 31 from across New England. Awards were given in the categories of individual; business (including professional organizations); local, state or federal government; and environmental, community, academia or nonprofit organization.

Award Citation:

### **Environmental, Community, Academia, & Non-profit Organizations Environmental Merit Award:**

#### **Citizens for a Green Camden**

Citizens for a Green Camden are a small group of concerned citizens working to make their community a better and healthier place to live, focusing specifically on the elimination of poisons being used on lawns in their community. Their first milestone victory was successfully passing a pesticide policy to eliminate the use of pesticides on the town’s parks and playing fields, which has since been adopted by the neighboring town, Rockport. They also compare notes with a citizens group in Castine. The organization continues to work to educate homeowners about the dangers of using poisons on their lawns, running programs and providing written educational materials for residents at the town office. They were able to convince the town Bed and Breakfasts to join their efforts by not using pesticides on their properties, advertising those partners at the local Chamber of Commerce for visitors to see. The organization continues its education outreach through various other community-based methods to eventually eliminate poisons being used on lawns in the entire Camden community.

## **Lawn care could impact lobsters (April 23, 2009)**

Posted by Biddeford-Saco-Old Orchard Beach Courier Editor at [4/24/2009 8:46 AM](#)

Categories: [Emma Bouthillette](#), [Environment](#)

**By Emma Bouthillette**

*Staff Writer*

Now that snow has melted off lawns, it's time to get outside for landscaping and working to turn that grass nice and green. But if you're laying down pesticides and fertilizers to keep insects at bay and soil nutrient rich, you might want to consider a caution from local lobstermen.

When lobsterman and Kennebunkport Selectman Alan Daggett looks back at the shore to see a patchwork of brownish green, bright green and almost blue lawns, he said it becomes obvious which homeowners use fertilizer on their lawn.

"I'm not an expert to say what that does to the watershed, but with the chemicals in pesticides and fertilizers it can't be good. It could go into your wells and it will go down with watershed," Daggett said, adding he does not want to consider how chemicals may affect lobsters, which are distantly related to insects targeted by pesticides.

In collaboration with local fishermen, lawn care companies and students in Christine Feurt's introduction to environmental studies course at the University of New England in Biddeford, Kennebunkport had a presentation Wednesday, after *The Courier* deadline to inform residents of detrimental affects pesticides and fertilizers have on watershed and aquatic life, as well as how to follow the best management guidelines.

Feurt said students expected to present a PowerPoint slideshow about information they gathered throughout the semester course.

"It's a local issue with concerns voiced by lobstermen who are worried about runoff. When it rains on people's lawns the chemicals wash off and run into the ocean. With the same toxins that kill insects, the concern is the impact on baby lobsters and the affects of over-fertilization," Feurt said.

The Friends of Casco Bay in South Portland have expressed similar concerns as Daggett after 17 years of water-quality monitoring in the bay. The group has found evidence of ingredients in pesticides and fertilizers in the watershed at levels that can have a detrimental affect on aquatic life, Associate Director Mary Cerullo said. She said if people do not follow application directions closely or apply too much pesticide or fertilizer to their lawns, the chemicals run off with rainstorms and end up in the ground water.

As chemicals enter the ground water, find a way to streams and rivers, then end up in bays and oceans, Cerullo said the chemicals can cause "dead zones." She said dead zones in the Gulf of Mexico result in low dissolved oxygen levels many organisms cannot survive in.

"We're encouraging people to practice better lawn care and minimize the demand for fertilizer and pesticides," Cerullo said.

In 1995, Maine Board of Pesticide Control Manager of the Pesticide Program Gary Fish said 800,000 pounds of fertilizer were brought into the state or applied by lawn care companies. He said by 2007 that number had "dramatically" increased to 6.2 million pounds. With nearly eight times as much fertilizer being brought into the state, Fish said the increase indicates a trend related to more development and people moving in from where lawn care "is the norm."

Fish and Cerullo said landscaping with the environment in mind – referred to as "bayscaping" or "yardscaping" – can help reduce dependence on fertilizers and pesticides and the impact on a watershed.

Cerullo said the first step is to test the soil to see what, if any, nutrients are needed.

"People will rarely have to add pesticides or fertilizers to their lawn," Cerullo said. "If they have to, wait and try not to fertilize until late August or early September when it will absorb and not run off."

Fish said the board encourages people to plant fine or tall fescue grass rather than Kentucky blue grass because it requires less fertilizer and has fewer problems with insects and disease. When planting grass, Fish said it is good to over-seed because it leaves less room for weeds to sprout. When mowing the yard it's best not to cut grass too close to the soil to maintain a higher grass density, also preventing weeds from growing.

These steps to improving the environmental friendliness of a yard are all part of the "Best Management Practices for the Application of Turf Pesticides and Fertilizers" as outlined by the Maine Board of Pesticide Control, and as recently accepted by the Kennebunkport Board of Selectmen.

Kennebunkport Conservation Commission Chairman Nancy Kling said the group has been actively investigating how pesticides and fertilizers affect the coastline, and after Daggett brought to their attention the chemicals were affecting fishermen's catches, they recommended the "Best Management Practices" be accepted as a town policy.

"We didn't want to set out to ban the use, but let people know there are other ways and if you insist on using chemicals follow the rules," Kling said.

*Staff writer Emma Bouthillette can be reached at 282-4337 ext. 237.*



**FOR IMMEDIATE**

**RELEASE**

May 11, 2009

4:12 PM

**CONTACT: American Bird Conservancy**

Steve Holmer, 202-234-7181, ext. 216,

**sholmer@abcbirds.org** ,

## **EPA Bans Deadly Pesticide Responsible for Millions of Bird Deaths**

WASHINGTON - May 11 - The U.S. Environmental Protection Agency (EPA) today announced its final decision to revoke all food tolerances for the highly toxic pesticide carbofuran, which is sold under the name "Furadan" by FMC Corporation. The agency's announcement confirms a proposed action first announced in July 2008. FMC Corp. will have the opportunity to challenge the decision within 90 days with a petition to stay the rule. When the rule becomes final, EPA will proceed with the cancellation of registration for all uses of the pesticide.

**"Carbofuran** causes neurological damage in humans, and one of the most deadly pesticides to birds left on the market. It is responsible for the deaths of millions of wild birds since its introduction in 1967, including Bald and Golden Eagles, Red-tailed Hawks, and migratory songbirds," said Dr. George Fenwick, President of American Bird Conservancy. "This EPA decision marks a huge victory for wildlife and the environment."

This rule becomes effective December 31, 2009 to allow for commodities in storage to be used. Most uses of carbofuran on food crops were voluntarily cancelled in March 2009, effective immediately, so that most uses of the pesticide have been cancelled for the 2009 growing season. Today's announcement is available at <http://yosemite.epa.gov/opa/admpress.nsf/0/30118530d0b774d7852575b30059aa8c?OpenDocument> .

In its 2005 ecological risk assessment on carbofuran, EPA stated that all legal uses of the pesticide were likely to kill wild birds. If a flock of mallards were to feed in a carbofuran treated alfalfa field, EPA predicted that 92% of the birds in the flock would quickly die. EPA analysis has also confirmed that carbofuran is a threat to human health through contaminated food, drinking water, and occupational exposure.

Following objections to the proposed ban by FMC Corporation, a government Scientific Advisory Panel reviewed the decision and agreed with EPA in 2008 that the pesticide poses an unreasonable risk to the environment, particularly birds, and that there was no evidence to recommend reversing EPA's decision to cancel carbofuran.

"Despite overwhelming scientific evidence of carbofuran's extreme toxicity and the availability of safer alternatives, FMC Corporation continued to do everything it could to keep this chemical on the market," said **Dr. Michael Fry** , ABC's Director of Conservation Advocacy. "We congratulate EPA for standing up for science and the public interest in the face of an industry pressure campaign."

Carbofuran first came under fire in the 1980s after an EPA Special Review estimated that over a million birds were killed each year by the granular formulation. Many of these die-off incidents followed applications of carbofuran that were made with extraordinary care. The granular formation was cancelled in 1994, but the liquid form has remained on the market.

“The **revocation of all food tolerances** has international implications, as imports of rice, coffee, bananas and sugarcane were previously allowed to contain residues of carbofuran,” said Dr. Fry. “After this revocation, countries wishing to export these foods to the US must stop using carbofuran on these four major crops.”

Rice and coffee are particularly important, as many US birds over wintering in Latin America use coffee and rice fields as winter habitats. American Bird Conservancy and the Natural Resources Defense Council petitioned EPA to cancel all import tolerances for pesticide residues on food, and this decision complies with the ABC/NRDC petition.

Incidents of bird poisonings by carbofuran are documented in the Avian Incident Monitoring System ([www.abcbirds.org/aims](http://www.abcbirds.org/aims)) operated by American Bird Conservancy in cooperation with the EPA and state and federal wildlife agencies. In addition to killing birds when used legally, carbofuran is often illegally used in poison baits intended to kill wildlife in agricultural areas and grazing lands. This abuse has resulted in the deaths of raptors including Bald and Golden Eagles in violation of the Bald and Golden Eagle Protection Act.

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## Beyond Pesticides Daily News Blog

### [Manufacturer Pulls Deadly Insecticide, EPA Allows Year End Phase-Out](#)

(*Beyond Pesticides*, May 12, 2009) The Environmental Protection Agency has revoked regulations that permit residues of the pesticide carbofuran in food. This follows a request for cancellation by the chemical's manufacturer FMC Corporation in September 2008. Carbofuran is a toxic insecticide that does not meet current U.S. food safety standards. EPA's action will eliminate residues of carbofuran in food, including all imports, in a move to protect people, especially children, from dietary hazards. The action [will also force the removal this pesticide](#) from the market.

The final carbofuran tolerance rule becomes effective December 31, 2009, a time frame that EPA says growers need to use up existing stocks and transition to alternatives. Phase out periods of known hazards (without notice to the public at point of sale) have long been criticized by advocates who argue that recalls be adopted in similar fashion to other consumer products that are pulled off the market at the time a danger is defined.

EPA is proceeding to cancel the remaining carbofuran registrations, or licenses, which will address risks to pesticide applicators and birds in treated fields. In 2006, EPA identified significant dietary, ecological and worker risks from the use of carbofuran and began negotiating cancellation with FMC. While the company voluntarily withdrew 22 uses of this pesticide, it was insufficient for the agency to conclude that dietary exposures to carbofuran are safe. Safety advocates have long maintained that EPA's regulation by negotiation with pesticide manufacturers has created an agency culture of unprotective compromises and delays.

EPA released the draft rule for public comment [last summer](#), an announcement which was greeted positively by activists. Carbofuran has been recognized as a danger to humans and wildlife, particularly migratory birds, since the 1980s. [Most recently](#), the National Marine Fisheries Service has released a Biological Opinion finding that carbofuran harms endangered salmon and steelhead.

[For more information on the tolerance revocation and further actions, visit EPA's cancellation process page.](#)

EPA is encouraging growers to switch to safer pesticides or other environmentally preferable pest control strategies. Environmental and health risks connected to carbofuran and other toxic agricultural chemicals can be reduced by buying and growing organic food. For more information, visit Beyond Pesticides' [program page](#).



**FOR IMMEDIATE  
RELEASE**

April 8, 2009  
4:12 PM

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**Conservationists Applaud EPA Decision to Not Seek Reversal of Victory  
Protecting Local Water Supplies, Fisheries & Wildlife  
Agriculture Secretary Vilsack asked the EPA to seek reversal of a decision that ended  
the Bush rule exempting pesticide applications near waterways from Clean Water Act  
protections.**

WASHINGTON - April 8 - Rebuffing the Department of Agriculture, the Justice Department today announced that it will not seek rehearing of a recent significant environmental decision. In a letter dated March 6, 2009, Agriculture Secretary Vilsack had asked EPA Administrator Jackson to request reversal of the 6<sup>th</sup> Circuit's **decision** in January that invalidated a Bush EPA rule exempting pesticide spraying around waterways from the Clean Water Act regulations.

"This decision means that EPA recognizes its responsibility to move forward with implementing the Clean Water Act, instead of trying to circumvent this bedrock public protection statute as was attempted by the Bush EPA", stated Charlie Tebbutt of the Western Environmental Law Center, who argued the case for the environmental challengers. "We now look forward to working with EPA and the states to bring about meaningful changes in site specific uses of pesticides to protect our nation's waters" continued Tebbutt.

In this same announcement, the EPA stated that it will seek to continue the Bush rule for two years, despite the court ruling it illegal. "This part of the EPA's decision is troubling" said Tebbutt, but he added "I expect that the 6th Circuit will deny the request to keep an illegal rule in place." The court decision simply reinstates the law as it was before Bush's intervention in 2006 and numerous states had permits in place prior to the rule change. "It will not be the great hardship that the pesticide industry has concocted. It is time to reinstate the full protections to our nation's rivers, lakes and streams envisioned by the Clean Water when it was passed in 1972" Tebbutt concluded.

In January, the 6<sup>th</sup> Circuit Court of Appeals reversed a Bush EPA decision that the spraying of pesticides into the nation's waters should no longer be regulated by the Clean Water Act. The Court held that pesticide residuals and biological pesticides constitute pollutants under federal law and therefore must be regulated under the Clean Water Act in order to minimize the impact to human health and the environment. (Click here for more information.)

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Western Environmental Law Center provides free or reduced-fee legal services to conservation groups, communities and individuals, challenging corporations and government agencies that violate environmental laws in the West. Our legal advocacy brings about long-lasting protections to preserve the region's air, water, public lands and forests, wildlife and habitat, and communities.

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# OAC ALUMNI TACKLE THE ISSUES



Pierre Petelle

## SCIENCE NOT ENOUGH TO STOP PESTICIDE BAN

**W**HEN ONTARIO politicians moved to restrict the use of pesticides in urban areas, the scientific and agricultural community asked why. Why prohibit a product that is already regulated by the federal government and available for sale only if it meets strict safety guidelines?

The Ontario government initiated a provincial pesticide act in an effort to unite a patchwork of municipal bylaws restricting pesticide use on lawns and gardens, as well as to limit the potential dangers if these chemicals are misused. In response, scientists and the agriculture industry set out to help the provincial government develop regulations that would incorporate scientific evidence and proper training of pesticide applicators.

Pierre Petelle, B.Sc. (Agr.) '95, director of regulatory affairs for CropLife Canada, lobbied for changes to the provincial act. The environmental biology graduate had previously worked with the Pest Management Regulatory Agency, a branch of Health Canada responsible for national pesticide regulation.

Petelle sees a sharp contradiction between the intentions of the new urban pesticide regulation and what has been proposed. "The reg-

ulations I've seen from Ontario are not the typical science-based regulations I'm accustomed to. They're extremely arbitrary, with no scientific criteria on where pesticides fall in the province's evaluation."

CropLife Canada is a trade association for pest-control products. Experts there are also worried that the provincial ban doesn't have clear criteria on what and how pesticides are restricted, which will hurt its members and those who rely on these products, including farmers, in the long term, he says.

If the ban goes ahead, he predicts innovation will suffer. "Companies continually work to improve their products, but the millions of dollars in research investment and the intensive process of seeking federal registration won't be justified if Ontario's act can then turn around and ban a product."

According to Petelle, another gap in the provincial act is the exemption for agriculture and golf courses, which use many of the same pesticides as urban settings to control weeds, fungi, insects and bacteria.

"The provincial government has spent the better part of a year telling the public that pesticides are harmful, making links to illness without scientific evidence. This is unjustifiably eroding public confidence in our regulatory and food-safety system."

He notes that the province's claims are in sharp contrast to research findings presented at the Canadian Cancer Society's 2008 conference. Those findings pointed to Canada having a very robust health regulatory system and a pesticide industry that invests heavily in producing research that ensures minimal risk to humans, he says.

Richard Blyleven also attended the conference and says he left confident in Canada's food system. "Many groups attended the conference looking for a smoking gun to find pesticides harmful, but they didn't find it," he says.

Blyleven, a third-generation farmer, attended Ridgetown before returning to the family

farm. He is now chair of AGCare, which represents Ontario's 45,000 growers of field and horticultural crops and provides science and research-based information and policy initiatives on pesticide use, crops biotechnology developments and related environmental issues on behalf of its membership. Blyleven's farm produces organic and conventional livestock and crops.

"About 30 per cent of my production is organic, which averages 60 per cent of the yield my conventional fields produce. Although the organic produce gets a higher financial return, organic production isn't going to feed a global population that will grow by 50 per cent by 2050."

AGCare was formed 20 years ago to promote responsible pesticide use and pesticide safety training for farmers. The grower pesticide safety course is mandatory under the Ontario Pesticides Act, and the organization continues to promote and support this important training initiative. Farmers and vendors must recertify every five years to keep current on advancements in pest management science, safety and regulations.

Training and improvements to products and the science of pest management have led to a 52-per-cent drop in pesticide use on Ontario farms since 1989.

## EASTERN ONTARIO FARM POWERED BY WASTE

**M**ICHAEL KLAESI graduated from the agricultural program at Kemptville in 2006 and says he uses what he learned there every day.

"Although I knew 'how' to perform many tasks as part of the daily farming routine, my time at Kemptville helped me understand 'why' and 'how' to determine what's best for my current operation," he says. "Since then, we've changed our calf-raising techniques, and I manage our nutrient management plan."

Klaesi believes one of the biggest issues fac-

# Dow sues Canadian government over Que.'s pesticide ban

**Juliet O'Neill, Canwest News Service**

Published: Thursday, April 9, 2009



Pesticide

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OTTAWA — U.S. Dow AgroSciences has gone ahead with a threatened suit against the federal government under the North American Free Trade Agreement, seeking a repeal of Quebec's ban on lawn pesticides containing 2,4-D and at least \$2 million in damages.

William Amos, a lawyer for environmental organizations intervening in the case, urged the parties Thursday to move forward quickly in choosing the three-member NAFTA arbitration panel that will decide the case. It is urgent, he said, to remove a cloud over other provinces considering pesticide bans.

Dow's claim asserts the ban is tantamount to "expropriation" of Dow investments, and accuses Canada of breaching "basic due process, transparency, good faith and

natural justice."

Dow says Quebec's ban is not based on science, and should have been reviewed after the federal Health Canada pest-management regulatory agency declared 2,4-D safe if used as directed.

It accuses Canada of breaching its obligations under Chapter 11 of NAFTA, and seeks damages "without limitation" covering loss of sales, profits, goodwill, investment and other costs related to the products.

"We don't want the government or Dow to sit on this," Amos said in an interview. "Let's have an open, transparent debate."

Amos is staff lawyer for the University of Ottawa's Ecojustice Environmental Law Clinic. He will represent the David Suzuki Foundation and Equiterre, a Quebec environmental group, as interveners in the case.

Last month, Trade Minister Stockwell Day vowed a "vigorous defence" of Quebec's ban, and asserted that NAFTA preserves Canada's ability to regulate in the public interest to protect health and the environment. Quebec is declining comment, leaving the matter up to Ottawa.

The suit comes on the eve of Ontario introducing similar pesticide controls that put 2,4-D on a list of banned products.

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## Pesticide ban rejected

May 5, 2009, 4:40 pm

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Agriculture Minister David Carter has rejected a call to ban pesticides which put bees in jeopardy.

Green MP Sue Kedgley yesterday urged the Government to follow the European Union in phasing out pesticides that kill bees.

But that would be "totally impractical," Mr Carter said.

"Prohibiting all pesticides capable of killing bees would expose farmers and growers to the risk of significant crop losses," he said.

Many crops were damaged by bees and insecticides were developed to limit that damage. However, bees could be harmed if products were applied incorrectly.

"Minimising the risk to bees is as much about education, which is why beekeepers and growers regularly work together on the correct use of agricultural chemicals," Mr Carter said.

He heard the message on the importance of bees directly from beekeepers today at the launch of Bee Week, held to highlight the value of bees and honey to the economy.

Beekeepers' Association chief executive Jim Edwards said bees were crucial to the primary sector, with many crops needing bees for fertilisation.

About a third of all food was pollinated by bees and many crops would not be viable without them, he said.

New Zealand produces about 10,500 tonnes of honey a year, with exports valued at about \$71 million.

The New Zealand honey crop for 2007/08 was estimated at 12,375 tonnes, up 28 percent on the 2006/07 crop of 9666 tonnes.

There are 2675 registered beekeepers in New Zealand managing 354,603 hives and 11 percent of beekeepers have more than 250 hives and control 96 percent of the registered hives.

There are 788 registered hobbyist bee keepers managing less than 11 hives. Another 470 beekeepers have between 50 and 250 hives.

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Originally published April 29 2009

## Residential Pesticides Linked to Childhood Brain Cancer

by Louis Lazaris, citizen journalist

(NaturalNews) Children who live in homes where parents use pesticides are twice as likely to develop brain cancer, according to the results of a new study published in the journal *Environmental Health Perspectives*. The study evaluated more than 800 fathers and more than 500 mothers that live in residential areas in four Atlantic Coast states in order to better understand the science behind the cause of childhood brain cancers.

The parents' exposure to various pesticides at home and at the workplace was assessed through computer-assisted telephone interviews with the mothers. The researchers analyzed intensity and probability of exposure levels based on information on residential pesticide use and jobs held by the fathers during the 2 years before the child's birth.

"Parental exposures may act before the child's conception, during gestation, or after birth to increase the risk of cancer," wrote the study's authors. "Before conception, exposures may cause mutations or epigenetic alterations in gene expression... in the sperm or egg."

According to the researchers, previous studies have suggested association between childhood brain cancers and parental pesticide use. Those associative links are what motivated this more extensive study that involved participants in Florida, New Jersey, New York (excluding New York City) and Pennsylvania. New York City was excluded "because the unique characteristics of the city make tracing cases and identifying controls very difficult."

A significant risk of astrocytoma was associated with herbicide exposure from residential use. Astrocytomas are cancers of the brain that originate in star-shaped brain cells called astrocytes. Primitive neuroectodermal tumors (PNET) were not associated with any of the pesticide classes or exposure sources considered. Thus, the researchers conclude that the results of this study are consistent with previous studies associating parental pesticide exposures to childhood brain cancer.

Significantly, according to the study's report, the risk of childhood cancer was dramatically reduced for children of fathers who washed immediately after any pesticide exposure, or who wore protective clothing.

Data for the study were obtained from the mothers through the telephone interviews during a 13-month period between 2000 and 2001. These included details on lawn and garden care and specifics on job industries for the working parents in the household.

Potential effects from four ranges of pesticide were evaluated. These were insecticides, herbicides, agricultural fungicides, and nonagricultural fungicides. "Nonagricultural fungicides" refers to disinfectants, germicides, and similar chemicals used to control bacteria.

More than 1,200 jobs for fathers, and about 1,000 jobs for mothers were assessed for exposure probabilities and levels. Other factors that were considered included the mothers' education levels.

Parental exposure to pesticides at the workplace was significantly less common than for residential pesticide exposure.

According to the report, the United States Environmental Protection Agency (EPA) has classified many pesticides as "probable or likely human carcinogens" while others are categorized as "suggestive or possible carcinogens."

# Sun Journal

## Burns linked to meds

By **Lindsay Tice** , *Staff Writer*

Friday, May 8, 2009 05:00 am



When Sherri Poulin couldn't get to her veterinarian to pick up her dogs' regular flea and tick medication, she didn't think twice about grabbing a similar product at a local grocery store.

Three days later, one of her dogs was dead, euthanized after suffering from severe chemical burns that Poulin's vet said came from Sergeant's Silver Flea and Tick Squeeze-On for Dogs.

Ten days later, Poulin's three other Lhasa apso-poodle mixes - Fanny, Tazzi and Birdie - are on antibiotics and steroids. They're still in pain.

"Fanny lays on her back and just whines," said Poulin, who lives in Lewiston.

It's the kind of situation that concerns the U.S. Environmental Protection Agency, which announced in April that it's intensifying its evaluation of all registered spot-on pesticides, including Frontline, K9 Advantix and Sergeant's products.

The reason? A growing number of pets are getting sick or dying.

Sergeant's said it welcomes the scrutiny from the EPA. A company spokeswoman said most adverse reactions are reported by pet owners who used too high a dose, who put the dog product on a cat or who otherwise misused it. "It's imperative that people follow the directions," Jennifer Windrum said.

But Poulin's vet, Robert Clark of the Lisbon Road Animal Hospital in Lewiston, said Poulin used the correct dosage, and did everything right.

He said he sees reactions to topical flea and tick products every other week, including from pets whose owners followed the directions exactly.

"It's tough stuff," Clark said. "It is a chemical."

Topical flea and tick medications are generally placed on the back of a dog or cat. As pesticides, the products are designed to kill fleas and ticks. Different companies use different chemicals.

Frontline, which is usually sold through vets' offices, is one of the best-known products. Poulin used it for years without a problem and Clark, her vet, said he finds it to be safer than those sold in stores.

Still, he said, "Any chemical can have a reaction."

Frontline is on the EPA's list of pesticides under scrutiny. So is Sergeant's.

In 2008, the EPA recorded about 1,300 major incidents associated with spot-on pet products. About 1 percent resulted in death.

Poulin noticed a problem with her dogs within an hour of using Sergeant's. They started scratching, rolling around on the ground and whining. Her oldest, 17-year-old Chippy, was walking into the wall.

Poulin called her vet's office. The people there advised her to bathe the dogs using Dawn dish-washing liquid.

It didn't help.

"They were still acting peculiar, crying, going crazy," Poulin said.

Poulin called her vet again, then Sergeant's hot line. Then her vet. Then Sergeant's. She tried everything they recommended, she said, including cold compresses and Neosporin. Nothing seemed to help. The dogs cried all night.

"I was up at 2 in the morning giving them cold baths again trying to calm this down," Poulin said. "The next day I saw the wounds on Fanny and Birdie. And Chippy's whole back, the fur was gone. She was the oldest. She never stood up again."

Chippy wouldn't eat, wouldn't lift her head, Poulin said. She continued to cry.

Soon after, the elderly dog was euthanized. Poulin's other three dogs were treated for chemical burns and infections.

Clark said their reaction to the pesticide was "definitely pretty severe." He's seen reactions range from scratching to full-blown seizures.

He saw a lot of reactions last year because the fleas were bad, he said, and the products were used more.

"We're just kicking back in again, so you're seeing a lot of them all at once," he said.

He advises owners to tell the maker of their product when they have a problem. Some people do; some don't. To be sure the companies know what's going on, Clark has called manufacturers, including Sergeant's. He said he's told doctors on staff about his clients.

"Basically, they all say the same thing, that they're not seeing a lot of reactions and just to wash them off," Clark said.

Windrum, the Sergeant's spokeswoman, confirmed that Poulin and her husband called with problems with their dogs. She said a transcript of the conversation showed the dogs' reactions didn't seem to be severe at the time.

In a written statement, Windrum called the loss of Chippy "unfortunate" and "devastating."

But without an investigation, she said, the company couldn't tell whether its product was at fault or not. She said Chippy could have had an underlying medical condition, which is why the product's packaging tells owners to consult a vet before using it on aged pets. She also said Poulin could have used the product wrong, despite the vet's assurance that she did everything right.

Windrum said Sergeant's would like Poulin and her vet to contact the company so it can start an investigation.

"One pet having any reaction is one too many," Windrum said.

If the investigation shows Sergeant's product made Poulin's animals sick, Windrum said, the company will pay the vet bills.

Poulin said she is considering her legal options. She wants something more than money.

"My mission is to get this off the shelf," she said.

Experts' advice:

- Consult your vet before using any flea and tick product, even those sold in stores.
- Consult your vet before using a flea and tick product on an older or pregnant pet, even if you've used that product before.
- Follow the dosing directions on the package.
- Don't use a dog product on a cat, even if their weights are the same. Dog products can kill cats because they have different metabolisms.
- Don't try to save money by buying a product meant for a larger animal and then splitting the dose among several smaller animals.
- Call your vet, the hot line number on the back of the package or the ASPCA Poison Control Center (1-888-426-4435) if your pet has a reaction to a product.

# Boom in tiny bedbugs is causing big trouble



By Barbara Barrett, McClatchy Newspapers Fri May 15, 5:50 pm ET

WASHINGTON — The biggest bedbug outbreak since World War II has sent a collective shudder among apartment dwellers, college students and business travelers across the nation.

The bugs — reddish brown, flat and about the size of a grain of rice — suck human blood. They resist many pesticides and spread quickly in certain mattress-heavy buildings, such as hotels, dormitories and apartment complexes.

Two shelters have closed temporarily in Charlotte, N.C. , because of bedbugs, a Yahoo chat group dedicates itself to sufferers and countless bedbug blogs provide forums for news, tips and commiseration. State inspectors say that more emphasis may be needed to tackle the creatures.

Federal officials have taken notice of the resurgence. Last month, the Environmental Protection Agency held its first-ever bedbug summit, and now a North Carolina congressman wants to take on the insect.

Democratic Rep. G.K. Butterfield just introduced legislation that would authorize \$50 million that's already in the Department of Commerce budget to train health inspectors how to recognize signs of the insects.

The Don't Let the Bed Bugs Bite Act of 2009 also would require public housing agencies to submit bedbug inspection plans to the federal government. It would add bedbugs to a rodent and cockroach program in the Department of Health and Human Services . It also would require the Centers for Disease Control and Prevention to research bedbugs' impact on public mental health.

Butterfield's letter to congressional colleagues about the legislation attracted lots of attention: It was topped with a full-color picture of the insect sitting on human skin.

"Unfortunately, in recent years, the United States has seen a resurgence in bedbugs," the letter reads. "That's right — they're back in the sack — and biting."

Bedbugs have hit hotels and homes in every state. The creatures are amazing hitchhikers, experts say, and easily travel in suitcases, boxes or packages. They can live for up to a year without food.

Apparently no state has a central reporting system for bedbugs, according to Butterfield's office, and since the bug carries no known diseases, many health departments don't consider it a public health threat.

That leaves the critters falling through the cracks among regulators, said Michael Potter , an entomologist at the University of Kentucky and one of the country's bedbug experts.

"Most health departments say, 'Hey, we don't deal with bedbugs,' " Potter said.

Those who've suffered outbreaks say that the anxiety it induces can be debilitating. Potter said many sufferers tossed out furniture and could spend thousands of dollars on repeated treatments from pesticide companies. They call him about anxiety, insomnia, shame and the incessant annoyance of itchy red welts on their skin.

"They're, like, ready to blow their brains out," Potter said. "It's emotionally distressing. Anyone that has never had a bedbug problem is not one to judge whether we're dealing with a medical, emotional public health issue."

In Congress , Butterfield first introduced his bill a year ago after hearing from a constituent who'd brought bedbugs into her home from a hotel trip. The bill died in committee last year, but Butterfield aides say they hope that higher attention will help the measure this year.

The co-sponsors include Reps. Don Young , R- Alaska , Ben Chandler , D- Ky. , Bobby L. Rush , D- Ill. , Betty McCollum , D- Minn. , Corrine Brown , D- Fla. , Steve Cohen , D- Tenn. , Brad Miller , D- N.C. , and Eddie Bernice Johnson , D- Texas .

Butterfield also has received support from the National Pest Management Association , which says that bedbug calls to pest control companies are up 70 percent in the past five years.

Greg Baumann , a Raleigh, N.C. , pest control expert and the vice president of technical services for the National Pest Management Association , said that a decade ago few pest control companies dealt routinely with bedbugs.

"Now it's everyone today," he said.

Baumann said companies could use pesticides on the bugs but that they also tried such alternatives as extreme heat, freezing and isolating the insects through mattress covers.

Since the EPA restricted the use of several effective pesticides in the 1980s, bedbugs have built resistance to the chemicals that now are on the market, said Potter, the University of Kentucky entomologist. Public education is important, he said, but the industry also needs a good insecticide.

"Whether that bill is going to solve the problem — certainly it's a start," he said.

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## Heat Technology Eliminates Two Million Pounds of Toxic Greenhouse Gas-Producing Pesticides From the Environment

ThermaPureHeat(R) Praised as "The Most Important New Technology to Emerge in Pest Control in Modern Times."

On Tuesday April 14, 2009, 2:54 pm EDT

VENTURA, CA--(MARKET WIRE)--Apr 14, 2009 -- Thanks to an emerging new and highly effective pest control technology millions of pounds of highly toxic fumigants proven to contribute to global warming have been kept from the atmosphere.

Traditional pest control companies have relied on effective but dangerous pesticides, including sulfuryl fluoride. Scientists at the Massachusetts Institute of Technology(1), the University of California at Irvine (2) and other institutions have discovered that this gas, often used in tented structures to kill termites, stays in the atmosphere at least 30 to 40 years and potentially as long as 100 years.

The result, according to the researchers, is that the gas is blocking heat from escaping the atmosphere and adding to the overall greenhouse effect shown to be dramatically impacting our planet.

ThermaPureHeat® uses heat produced by clean-burning propane and/or energy-efficient electric infrared heaters along with HEPA filtration to kill insects and "pasteurize" the structure. The ThermaPure process has now been applied to thousands of structures across North America that normally would have been treated with pesticide gases, sparing the environment from an estimated two million pounds of greenhouse gas-producing pesticide.

"To visualize what we've done, picture 1,000, one-ton pick-up trucks rolling down the highway with their truck beds filled to the brim with some of the most poisonous chemicals known to man," said David Hedman, CEO of ThermaPure and co-patent holder of the heat process. "Thanks to the ThermaPureHeat process, we've prevented these chemicals from being released into our environment. I can't think of a better Earth Day contribution than that."

The ThermaPureHeat process has been university tested and shown to be 100% effective in killing insects like termites and bed bugs and their eggs when properly applied by trained technicians.

In addition, Hedman announced that Isotech, the Southern California pest control company that produces the Discovery Channel hit program "Verminators," has become a ThermaPure licensee and is praising the highly effective and environmentally friendly heat process.

"I think the ThermaPure technology is the most important new technology to emerge in pest control in modern times, and is the most important pesticide reduction tool that I know of," said Mike Masterson, host of the Verminators.

About ThermaPure

ThermaPure® ([www.thermapure.com](http://www.thermapure.com)) is a patented, DPR/EPA-registered non-chemical heat technology that sanitizes structures as well as kills insects, such as bed bugs, termites and their eggs.

The ThermaPureHeat® process is licensed by TPE Associates of Ventura, California to companies

around the world. Currently, more than 40 companies throughout North America have been granted licenses to use ThermaPure.

(1) The MIT study appeared in the March 2009 edition of Journal of Geophysical Research

(2) UCI study published January 21, 2009 in the publication Environmental Science and Technology

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## Scientists Develop "Green" Pesticide

Reported by: *RNS*

*Saturday, Apr 11, 2009 @09:46am*

Scientists report developing a new type of "green" fungicide they say could offer a safer, more environmentally friendly alternative to such agents.

Conceived with sustainable agriculture in mind, new fungicides called "paldoxins" would continue to do the work of conventional options - but in a way less threatening to other life forms and the environment.

The researchers explain most fungicides today are made from chemicals that can kill potentially beneficial organisms and have other adverse environmental effects.

Paldoxins are more selective - stopping fungi that cause plant diseases without harming other organisms. They work in a unique way - disrupting a key chemical that fungi use to break down a plant's normal defenses.

As a result, plants boost natural defenses and overcome fungal attack without harm to humans, animals and the environment, the scientists say. They also point to a renewable-energy component to their work. They say their fungicide would help protect corn, wheat and other crops increasingly being used to produce biofuels.

 **THE AUSTRALIAN**

May 08, 2009 06:18am AEST

## When farm sprays go astray

Leigh Dayton and Matthew Denholm | April 11, 2009

Article from: [The Australian](#)

**WHEN fisheries veterinarian Matthew Landos got his first look at the double-headed fish embryos in a Queensland hatchery, he had no idea he would soon team up with a Tasmanian doctor worried that the widespread use of agricultural and forestry chemicals was making her patients sick.**

"In hindsight it makes perfect sense. If exposure to agricultural chemicals could cause deformed and dying fish, as the evidence suggests, of course the chemicals had the potential to trigger serious health problems with other animals, including people," says Landos, who runs a consulting practice called Future Fisheries Veterinary Services and is a research associate and honorary lecturer with the University of Sydney.

Late last year hatchery owner Gwen Gilson hired Landos to find out why - after years of healthy hatchings - embryos and fish fry were dying in huge numbers, while others showed bizarre physical or behavioural abnormalities. His investigation suggested the problem was the result of a cocktail of chemicals sprayed on a nearby macadamia plantation.

Pathology reports on Gilson's fish, written by Roger Chong of Queensland's Biosecurity Sciences Laboratory, backed Landos's conclusion. It revealed the deaths, deformities and behavioural abnormalities of fish and fish fry were consistent with exposure to the types of agrichemicals used to treat macadamia trees.

Landos's work led to a report last January in *The Australian* of a possible cancer cluster among residents living close to the plantation. The residents have since asked Queensland Health to investigate. That coverage struck a chord for Alison Bleaney, a GP at St Helens on Tasmania's east coast.

About a decade ago Bleaney began wondering why so many of her patients were getting so sick. "I just started feeling something wasn't right. It just didn't make sense." She was seeing a rise in cancers, auto-immune diseases, diabetes, thyroid problems, reproductive difficulties, children with behavioural problems and lots of flu-like illnesses.

The situation puzzled her for years until, in 2003, a helicopter used for aerial spraying of agrichemicals crashed in a forest plantation in the upper George River catchment. A short time later, there were mass deaths of oysters in Georges Bay.

"Suddenly I thought, 'What is happening to our drinking water?'," Bleaney says. "There had been a rapid increase in plantation areas in the catchment and a corresponding increase in pesticide use. It struck me, and still strikes me, as being consistent with the timing."

Turning to scientific reports, Bleaney concluded that the rise in local cancer cases she had documented between 1995 and 2005 made sense. Agrichemicals and cancer go hand in hand, she thought, despite Tasmanian Director of Public Health, Roscoe Taylor, finding no evidence to back her fears.

Although Taylor found no proof of a cancer cluster in Bleaney's data, he remains concerned about some commonly-used agricultural chemicals which are applied by aerial spraying in drinking water catchments. He has called for an end to all aerial spraying.

Today, Landos and Bleaney are waving the warning flag for all Australians, not just Queenslanders and Tasmanians. They point to a growing body of international scientific and circumstantial evidence suggesting that the fungicides, pesticides and weed killers used on the nation's farms and forests can cause a range of human health problems. These run from transient stomach pain and headache to far more serious conditions such as reproductive and neurological disorders, and even cancer.

While many of the studies are conducted on experimental animals such as fish, experts suggest that because backboned animals share biological systems with people, the findings are worrying.

One scientist exposing human cells to agrichemicals such as endosulfan in the laboratory is Dayanthi Nugegoda, an ecotoxicologist with RMIT in Melbourne.

"Endosulfan is terrible," says Nugegoda. "We found it's very toxic in our in-house experiments."

The active agents in the so-called agrichemicals on Landos's and Bleaney's personal hit-list include wetting agents that break down into compounds such as nonylphenol, known to disrupt hormonal production, organophosphate, a known

neurotoxin, and carbendazim, a hormone disruptor which also causes developmental abnormalities in foetuses.

Farmers often use more than one of these toxic agents on their crops, says Landos.

"A NSW Department of Primary Industries study of vegetable residues found up to six residues on individual vegetable crops."

Worse, when two or more such chemicals are combined they may pack a mightier punch than each would individually. Earlier this year US researchers reported they had observed exactly that in a study of the effects on young fish of various mixtures of organophosphate and carbamate pesticides.

"Several combinations of organophosphates were lethal at concentrations that were sublethal in single-chemical trials," they wrote in the journal *Environmental Health Perspectives* (doi:10.12889/ehp.0800096).

Then there's atrazine and a related compound called simazine. Used to prevent weed growth in tree plantations and in most agricultural food productions in Australia, these "triazines" disrupt human hormones.

Developmental endocrinologist Tyrone Hayes, with the University of California at Berkeley, has conducted laboratory experiments that show atrazine promotes the growth of breast cancer cells by altering the production of the hormone oestrogen.

On a visit to Hobart last month, organised by Bleaney, Hayes told *Weekend Health* the triazine-cancer phenomenon had been neatly exploited by industry.

"The same company that makes atrazine (as a herbicide) spun out a new company that makes an anti-breast cancer medication that blocks its action," he says, noting that the company involved has complained formally to UC administrators about his public pronouncements on the subject.

Similarly, Landos's and Bleaney's concerns are not welcome in Australian industry circles. The Australian Macadamia Society and forestry giant Gunns Limited, for instance, dispute the suggestion that their agrichemicals make anyone sick.

They argue that they follow safety guidelines set by state authorities and the national regulator, the Australian Pesticides & Veterinary Medicines Authority.

Setting aside the possibility of misuse of the agrichemicals, both outfits are right. The chemicals are approved for use by the APVMA. And that's exactly the problem, the critics argue.

Speaking of the triazines, Hayes says: "My professional opinion is that I don't think they can be used safely. They harm the environment and human health and reproduction. We need to protect the people using it and manufacturing it".

Hayes may get his wish, at least in the US. Atrazine is at present under review by the US Environmental Protection Agency. As well, a bill to ban it outright is before Congress, where Congressman Keith Ellison is leading the push to get a full hearing on the matter in key committees.

In Australia, the APVMA has no plans to review atrazine. But the Tasmanian Government has requested a formal review of triazines due their persistence in waterways potentially sourced for drinking.

As to organophosphates, they too are approved for specific uses by the APVMA. And carbendazim? It's been under review by the AVPMA since 2007.

According to Hayes, they too should be banned, along with another group of insecticides, the pyrethroids.

"They're so toxic I don't study them because the harm they cause to animals is so early in development it's too early to study their endocrine systems," he says.

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**From:** NANCY ODEN [mailto:cleaneearth@myfairpoint.net]

**Sent:** Tuesday, May 19, 2009 8:16 AM

**To:** Jennings, Henry

**Subject:** imidacloprid and bees - for Board

[http://www.salon.com/env/feature/2009/05/18/bees\\_pesticides/](http://www.salon.com/env/feature/2009/05/18/bees_pesticides/)

## Pesticides indicted in bee deaths

Agriculture officials have renewed their scrutiny of the world's best-selling pest-killer as they try to solve the mysterious collapse of the nation's hives.

By Julia Scott

May 18, 2009 |

Gene Brandi will always rue the summer of 2007. That's when the California beekeeper rented half his honeybees, or 1,000 hives, to a watermelon farmer in the San Joaquin Valley at pollination time. The following winter, 50 percent of Brandi's bees were dead. "They pretty much disappeared," says Brandi, who's been keeping bees for 35 years.

Since the advent in 2006 of [colony collapse disorder](#), the mysterious ailment that continues to decimate hives across the country, Brandi has grown accustomed to seeing up to 40 percent of his bees vanish each year, simply leave the hive in search of food and never come back. But this was different. Instead of losing bees from all his colonies, Brandi watched the ones that skipped watermelon duty continue to thrive.

Brandi discovered the watermelon farmer had irrigated his plants with imidacloprid, the world's best-selling insecticide created by [Bayer CropScience Inc.](#), one of the world's leading producers of pesticides and genetically modified vegetable seeds, with annual sales of \$8.6 billion. Blended with water and applied to the soil, imidacloprid creates a moist mixture the bees likely drank from on a hot day.

Stories like Brandi's have become so common that the National Honeybee Advisory Board, which represents the two biggest beekeeper associations in the U.S., recently asked the U.S. Environmental Protection Agency to ban the product. "We believe imidacloprid kills bees -- specifically, that it causes bee colonies to collapse," says Clint Walker, co-chairman of the board.

Beekeepers have singled out imidacloprid and its chemical cousin clothianidin, also produced by Bayer CropScience, as a cause of bee die-offs around the world for over a decade. More recently, the same products have been blamed by American beekeepers, who claim the product is a cause of colony collapse disorder, which has cost many commercial

U.S. beekeepers at least a third of their bees since 2006, and threatens the reliability of the world's food supply.

Scientists have started to turn their attention to both products, which are receiving new scrutiny in the U.S., due to a disclosure in December 2007 by Bayer CropScience itself. Bayer scientists found imidacloprid in the nectar and pollen of flowering trees and shrubs at concentrations high enough to kill a honeybee in minutes. The disclosure recently set in motion product reviews by the California Department of Pesticide Regulation and the EPA. The tests are scheduled to wrap up in 2014, though environmentalists, including the Sierra Club, are petitioning the EPA to speed up the work.

For over a decade, Bayer CropScience has been forced to defend the family of insecticides against calls for a ban by beekeepers and environmentalists. French beekeepers succeeded in having imidacloprid banned for use on several crops after a third of the country's bees died following its use in 1999 -- although the French bee population never quite rebounded, as Bayer is quick to point out. Germany banned the use of clothianidin and seven other insecticides in 2008 after tests implicated them in killing up to 60 percent of honeybees in southwest Germany.

Imidacloprid and clothianidin are chloronicotinoids, a synthetic compound that combines nicotine, a powerful toxin, with chlorine to attack an insect's nervous system. The chemical is applied to the seed of a plant, added to soil, or sprayed on a crop and spreads to every corner of the plant's tissue, killing the pests that feed on it.

Pennsylvania beekeeper John Macdonald has been keeping bees for over 30 years and recently became convinced that imidacloprid is linked to colony collapse disorder. It's the only explanation he can find for why his bees, whose hives border farmland that uses the pesticide, started dropping dead a few years ago.

"There's the pernicious toxic effect -- it does everything nicotine does to our nervous system," says Macdonald. "There's the pathological effect, the interference with basic functions. They get lost, they get disoriented. They fall to the ground. They get paralyzed and their wings stick out. I can't think of anything in the environment that's changed other than farming, and virtually every farmer is using treated seeds now."

Bayer CropScience spokesman Jack Boyne says his company's pesticides are not to blame. "We do a lot of research on our products and we feel like we have a very good body of evidence to suggest that pesticides, including insecticides, are not the cause of colony collapse disorder," he says. "Pesticides have been around for a lot of years now and honeybee collapse has only been a factor for the last few years." (Imidacloprid has been approved for use in the U.S. since 1994 and clothianidin has been used since 2003.)

Scientists continue to investigate the causes of colony collapse disorder. Leading theories suggest a combination of factors that include parasitic mites, disease, malnutrition and environmental contaminants like pesticides, insecticides and fungicides. The current EPA review will provide further insight into the role of pesticides, as it will uncover whether honeybees sickened by exposure to imidacloprid spread it around by bringing contaminated nectar and pollen back to the hive.

EPA critics suggest that the agency allowed economic considerations to take precedence over the well-being of honeybees when it approved imidacloprid for sale in the U.S. 15 years ago. "I think the EPA and USDA [U.S. Department of Agriculture] have been covering up for Bayer, and now they're scrambling to do something about it," says Neil Carman, a plant biologist who advises the Sierra Club on pesticides and other issues. "This review should have been done 10 years ago. It's been found to be more persistent in the environment than was reported by Bayer."

Imidacloprid was approved with knowledge that the product, marketed as Gaucho, Confidor, Admire and others, was lethal to honeybees under certain circumstances. Today the EPA's own literature calls it "[very highly toxic](#)" to honeybees and other beneficial insects. Its workaround was to slap a label on the product, warning farmers not to spray it on a plant when bees were foraging in the neighborhood.

In its 2007 studies, Bayer applied standard doses of imidacloprid to test trees, including apple, lime and dogwood. Its scientists found imidacloprid in nectar at concentrations of up to 4,000 parts per billion, a dose high enough to kill several bees at once. (Honeybees can withstand a dose of up to 185 ppb, the standard amount it would take to kill 50 percent of a test population.) What caught the attention of California agricultural officials was that the test trees

contained the same amount of deadly imidacloprid as the citrus and almond groves regularly sprayed by farmers, and pollinated by bees. (California's almond industry has increased its use of imidacloprid by a factor of 300 in the past five years.) Agricultural officials were also surprised to learn that the imidacloprid can persist in the leaves and blossoms of a plant for more than a year.

The Bayer results don't surprise University of California at Davis professor Eric Mussen, a well-known entomologist and one of the country's leading experts on colony collapse disorder. Mussen has seen a variety of unpublished studies with similar results, including one at U.C. Riverside that found imidacloprid in the nectar of a eucalyptus tree bloom at concentrations of 550 ppb a full year after it was applied.

"From some of the data on the trees, it appears as though there are situations where honeybees can get into truly toxic doses of the material," says Mussen, who avoids spraying imidacloprid on his own demonstration fields at U.C. Davis. "This the first time that we've had something you put in a tree that could stay there for a long time."

But Mussen isn't convinced imidacloprid is a primary cause of the honeybee die-off. He explains that some bees settle on fields of sunflowers and canola treated with the chemical and then "fly right through to next year." So imidacloprid is not the only story. "Could it be part of the story?" he asks. "I'm sure. I think any of the pesticides the bees bring back to the beehive is hurting the bees."

Mussen adds that ongoing research into chronic exposure to insecticides will be crucial. It's likely, he says, that exposure to even low doses acts like a one-two punch: It can weaken the bees until a parasite or pathogen moves in to finish them off.

As the EPA begins its pesticide studies this year, skeptics wonder whether the agency can conduct an unbiased review. Back in 2003, they point out, the EPA reported that clothianidin was "[highly toxic](#) to honeybees on an acute contact basis," and suggested that chronic exposure could lead to effects on the larvae and reproductive effects on the queen. Although the EPA asked Bayer for further studies of its effects on honeybees, it nevertheless authorized the chemical for market.

"If the EPA had sufficient concern about harm to bees that they would insist on other studies, it seemed unwise to approve it anyway and ask for research after the fact," says Aaron Colangelo, an attorney with the Natural Resources Defense Council. "The EPA's job is to make a decision about whether a chemical is safe or not."

Colangelo envisions a similar scenario in coming years. The EPA has announced it will review clothianidin and other chemicals in the same family, but not until 2012. In the meantime, there's nothing stopping the agency from approving the insecticides for use on new crops based on existing policies. In the end, Colangelo has little confidence the federal agency will bring a hammer down on the agribusiness giant. The EPA, he explains, often keeps its test results confidential for proprietary reasons at a company's request. As a consequence, it's unclear where gaps or discrepancies occur until a company makes a disclosure similar to Bayer's.

"They're not making decisions about whether the pesticide can be put on the market based on impacts to bees, no matter how much evidence of harm there is," Colangelo says. "The EPA will just approve it anyway and put a warning label on the product."

Halting the sale of pesticides, though, would be no mean task. Over 120 countries use imidacloprid under the Bayer label on more than 140 crop varieties, as well as on termites, flea collars and home garden landscaping. And the product's patent expired a few years ago, paving the way for it to be sold as a generic insecticide by dozens of smaller corporations. In California alone, imidacloprid is the central ingredient in 247 separate products sold by 50 different companies.

In a statement, the EPA says that before banning a pesticide, it "must find that an 'imminent hazard' exists. The federal courts have ruled that to make this finding, EPA must conclude, among other things, that there is a substantial likelihood that imminent, serious harm will be experienced from use of the pesticide." The EPA did not clarify what is meant by "imminent hazard" and why the death of honeybees does not qualify.

As Mussen points out, though, a few million dead honeybees may be the cost of doing business. "If they didn't register products that were toxic to honeybees, there wouldn't be a lot of products on the market that were available for pest control."

All the more reason to start taking the world's most ubiquitous insecticide off the market and invent a safer one, argues Walker, of the National Honeybee Advisory Board. "It's on every golf course, it's on every lawn. It's not just an agricultural product. There's really not one part of our lives it's not touching."

**From:** NANCY ODEN [mailto:cleaneearth@myfairpoint.net]

**Sent:** Friday, May 08, 2009 9:13 AM

**To:** Jennings, Henry

**Subject:** pls get to Board

Henry - New study just out linking certain pesticides with diabetes. The Board needs this information, although I doubt they will act on it.

My hope is that the overwhelming evidence that pesticides are damaging everyone's health, including theirs, will someday SOON lead them to actually CONTROL pesticides, as is their duty.

Here's the link, please print out in full and give to Board members, thank you.

- Nancy Oden, Jonesboro, Maine

<http://aje.oxfordjournals.org/cgi/content/abstract/167/10/1235>

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## ORIGINAL CONTRIBUTIONS

# Incident Diabetes and Pesticide Exposure among Licensed Pesticide Applicators: Agricultural Health Study, 1993–2003

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Exposure to certain environmental toxicants may be associated with increased risk of developing diabetes. The authors' aim was to investigate the relation between lifetime exposure to specific agricultural pesticides and diabetes incidence among pesticide applicators. The study included 33,457 licensed applicators, predominantly non-Hispanic White males, enrolled in the Agricultural Health Study. Incident diabetes was self-reported in a 5-year follow-up interview (1999–2003), giving 1,176 diabetics and 30,611 nondiabetics for analysis. Lifetime exposure to pesticides and covariate information were reported by participants at enrollment (1993–1997). Using logistic regression, the authors considered two primary measures of pesticide exposure: ever use and cumulative lifetime days of use. They found seven specific pesticides (aldrin, chlordane, heptachlor, dichlorvos, trichlorfon, alachlor, and cyanazine) for which the odds of diabetes incidence increased with both ever use and cumulative days of use. Applicators who had used the organochlorine insecticides aldrin, chlordane, and heptachlor more than 100 lifetime days had 51%, 63%, and 94% increased odds of diabetes, respectively. The observed

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association of organochlorine and organophosphate insecticides with diabetes is consistent with results from previous human and animal studies. Long-term exposure from handling certain pesticides, in particular, organochlorine and organophosphate insecticides, may be associated with increased risk of diabetes.

agrochemicals; diabetes mellitus; environmental exposure; hydrocarbons, chlorinated; insecticides; pesticides; phosphoric acid esters

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Abbreviations: CI, confidence interval; OR, odds ratio

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