



Is Your Lawn Truly Green? *Sage Advice from Top Northeast Experts*

by Paul Schlein
Maine YardScaping Partnership

Concerns about environmental impact and effects on human health have brought the perfect, lush green lawn—an enduring symbol of American prosperity—into the spotlight. What it takes to create and maintain that lawn needs some scrutiny. A high-maintenance lawn can become dependent upon frequent pesticide, fertilizer, and water use to keep it “healthy” and looking green, and these potentially harmful substances may end up in our precious waterways, living rooms, and bodies.

CAN WE HAVE OUR LAWN AND A HEALTHY ENVIRONMENT?

Do we have to forego our lawns altogether to save ourselves and the planet? Probably not, if we are willing to rethink our idea of perfection. An attractive lawn *can* be grown without regular use of pesticides (weed, insect, or disease controls) and little or no added fertilizer. Researchers have been analyzing every facet of lawn production and maintenance to see what works and what doesn't. Old guidelines have been refined and new ones developed. Following these amended guidelines will help us to have truly “green” lawns that can significantly reduce the risks for our children, pets, and the environment.

The following information has been prepared with the help of four Northeast university turfgrass specialists*:

FERTILIZATION—REDUCED RATES OF NITROGEN ONLY, NO PORK (PHOSPHORUS OR POTASSIUM)!

Here's where critical new findings have come to light. When soils are adequate, only newly established and young lawns need fertilizer and, even then, only nitrogen—phosphorus and potassium are seldom needed, unless indicated by a soil test. The guideline of applying 2–4 pounds of nitrogen fertilizer per 1,000 square feet of lawn has been revised to one-quarter to one-half that amount. Basically, lawns need only one or two applications per year at half the labeled application rate.

Lawns 10 years and older store necessary nutrients and may never need fertilizer. Grass clippings are free fertilizer—if these are returned to the lawn with a mulching mower, chances are, additional fertilizer will not be needed.

When to Fertilize: Contrary to popular belief and common practice, spring is not the best time to fertilize a lawn. At that time, nitrogen will encourage top growth at the expense of roots and will promote germination of weed seeds. If and when fertilizer is applied, ideally it should be done

only once or twice a year in late August or September. This approach provides fertilizer when the grass can best utilize it, not when it is likely to run off into waterways (always sweep fertilizer back onto the lawn from sidewalks and driveways). Fertilizer should never be applied to frozen or saturated soils, or in advance of expected heavy rain.

OVERSEEDING—KEEPS OUT WEEDS!

At the first sign of thinning or bare spots in the lawn, loosen the soil with a rake or similar tool and apply perennial ryegrass at a rate of about 7 seeds per square inch, with nitrogen fertilizer at one-third the labeled rate. Ryegrass will germinate quickly (7–10 days), before the weeds get a chance to invade. Do this every few weeks in early spring and late summer. Overseeding is also an inexpensive method for replacing high-maintenance grass varieties with lower ones (*see Choose Appropriate Grass Species, below*).

CHOOSE APPROPRIATE GRASS SPECIES—THEY WILL MAKE YOUR LIFE EASIER!

Many problems with lawns are due to inappropriate grass species. Popular species, including most Kentucky bluegrass varieties, have high fertilizer and water requirements, are not shade-tolerant, and are more susceptible to disease. To survive and maintain quality, these species need a high level of pesticides and fertilizer. This increases the likelihood of water quality problems due to runoff and leaching of nutrients or pesticides, *and that's what we are trying to avoid*.

On the other hand, turf-type tall fescues and fine-leaf fescues require less fertilizer and water and are more shade-tolerant. These are the “green” species we want on our lawns. In small amounts, perennial ryegrass, because of its quick growth rate, is perfect for overseeding bare spots, but, for the same reasons mentioned for Kentucky bluegrass, it is not as suitable for covering an entire lawn.

Whichever species are used, be sure they are endophyte-enhanced (insect-resistant—*see Pest Management, below*).

Diversity Is Best: The “freedom” or “climax” approach to lawns is advocated by some turfgrass specialists. These lawns include a wide diversity of perennial grasses and other herbaceous plants, including chamomile, yarrow, and especially black medic and Dutch white clover—plants that fix nitrogen and provide free fertilizer. Rethinking the perfect lawn may also require redefining what constitutes a weed. Clover, now considered a weed by many, used to be very popular for lawns until widespread use of herbicides began, but plants that provide free fertilizer should be celebrated.

MOW HIGH—WITH A SHARP BLADE

3" or more does the trick! It is well established that the higher the cut when mowing the lawn, the deeper and more extensive the root system. Deeper-rooted lawns recover more quickly from drought. Higher mowing heights leave a lawn with more resistance to water movement, therefore reducing runoff. Higher cut grasses can also tolerate a higher population of pests without significant damage. Last, and certainly not least, taller grass blades shade out weeds and reduce the number of seeds that germinate.

WATER WISELY AND INFREQUENTLY

In the Northeast, except for a few weeks in the summer, most lawns rarely need watering. The case can be made for never watering (*see, Final Words from an Expert, below*). Only if absolutely necessary, deeply soak the lawn once or twice a week with a total of 1" of water. Frequent, shallow watering encourages shallow root growth, thatch buildup, and increases the potential for pesticide and fertilizer runoff.

CORE AERATION

Thatch is a layer of dead and decomposing grass plants that forms above the soil. A thin thatch layer prevents weed invasion and reduces soil compaction. However, if thatch gets too thick (more than 1"), water runs off, taking fertilizers and pesticides with it. Heavy thatch also provides harborage for insects and diseases. On older, heavily fertilized lawns, the thatch should be reduced to ¾"–½" by core aeration or by topdressing with ⅛" of

compost (look for a compost with less than 1% phosphorus). Similar to the action of earthworms, core aerators punch small holes in the lawn, allowing air and moisture to penetrate the soil, and bringing decomposers to the surface where they help break down the thatch.

MIND YOUR SOIL'S pH

If a soil test indicates the pH is below 6, or indicates a calcium or magnesium deficiency, consider applying lime. Liming helps release nutrients that are bound up in the soil.

PEST MANAGEMENT

Research has shown that there are effective means other than using traditional pesticides to minimize weeds, insect pests, and diseases in lawns. Keep in mind the concept of threshold: the mere presence of a few weeds or insects does not necessitate the application of a pesticide.

Weeds: Overseeding lawns to achieve maximum density is the most effective approach to weed management. Weeds take advantage of thin, less vigorous lawns.

Grass Species Diversity: The more grass varieties and herbaceous plants a lawn has, the healthier it will be. As in all horticulture, growing large numbers of a single species leaves plants more subject to disease or pest infestation.

Use Insect- and Disease-resistant Grasses: Endophyte-enhanced grass species harbor a beneficial fungus that produces alkaloid compounds. These alkaloids reduce disease and insect infestations, increase drought tolerance, and further reduce the need for fertilizer and pesticides. However, these grasses are not recommended for pasture areas.

Beneficial Nematodes: Grubs—the larva of certain insects, including Japanese beetles and European chafers—can be a major lawn problem. Even the most powerful pesticides are not fully effective. However, the use of beneficial or parasitic nematodes—microscopic, worm-like organisms that feed on grubs—has shown promise and presents less risk than insecticides. In fact, when applied properly, nematodes can be 95% effective in controlling grubs—and that's better than many chemical controls.

Nematodes are recommended for treating localized, high-priority lawn areas. Key to their effectiveness is to first identify the grub species and then match it with the right nematode species. Newly hatched grubs are targeted, usually in August to early September, when other susceptible organisms are not present. Different than using chemical controls, this biocontrol needs moisture and should be applied in the evening (*see For More Information to find out how to obtain nematodes*).

FINAL WORDS FROM AN EXPERT

In telling us how he cares for his own lawn, University of Connecticut agronomy professor Karl Guillard concisely summarizes the current approach to lawn care that will provide us with an environmentally sound but still beautiful lawn: *“I advocate the ‘Freedom Lawn’ approach on my property—allowing a wide diversity of perennial grasses and other herbaceous plants to dominate the lawn. I believe this is better for the overall ecology of the lawn and supportive of a greater overall biodiversity on my land. I will mow at least once every two weeks at 4”, sometimes once a week during very rapid growth periods, and return the clippings back into the lawn using a mulching mower. I never water my lawn and allow nature to take its course during dry periods. I overseed fescues (both fine and turf-type) and white clover into my yard, especially those areas that are thin due to poor tolerance of the existing species to low fertility, water stress, or shade. I only apply fertilizers to newly seeded areas. Once established, they rarely ever see a fertilizer again. Compared to some of my neighbors who choose a higher management approach to their lawn areas, my lawn is very comparable to theirs in quality and aesthetic appeal. I firmly believe that low-input lawns are not necessarily low-quality.”*

FOR MORE INFORMATION

- Maine YardScaping Partnership: www.yardscaping.org
- *Lawn Care without Pesticides*: www.gardening.cornell.edu/lawn/
- *The Homeowners Lawn Care Water Quality Almanac*: www.gardening.cornell.edu/lawn/almanac/index.html
- Fertilizer Calculator: www.cag.uconn.edu/ces/sustainability/fertcalc.html
- *Insect Parasitic Nematodes for Turfgrass Pest Management*: www.oardc.ohio-state.edu/nematodes/turfgrass_pest_management.htm
- Maine and on-line vendors of biocontrols: http://www.yardscaping.org/lawn/documents/local-online-vendors-biocontrols_5-08.pdf

YardScaping hopes to inspire Maine people to create and maintain healthy landscapes through ecologically based practices that minimize reliance on water, fertilizer, and pesticides. The MaineYardScaping Partnership was formed out of the rising concern among statewide businesses, organizations, and agencies over the possible pollution caused by yard care chemicals washing away into water bodies, as well as the risks of pesticide exposure to people, pets, and wildlife.

**Jennifer Grant, A. Martin Petrovic, and Frank Rossi, at Cornell University, and Karl Guillard at the University of Connecticut.*

THE EXPERTS' TURFGRASS TOP 10

- 1. Fertilize in Late August or September**
 - *Only if necessary and only on new or young lawns (less than 10 years old)*
- 2. Mow High**
 - *3" or more for vigorous roots and to shade out weeds*
- 3. Leave Clippings**
 - *They are high-quality, free fertilizer*
- 4. Plant Appropriate (Endophyte-enhanced) Grass Species**
 - *They require less water, fertilizer, and pesticides, and compete better with weeds*
- 5. Get Your Soil Tested**
 - *The only way to know just what the lawn needs is to do a soil test*
- 6. Keep Turf Cover Dense**
 - *Higher density means fewer weeds—overseed, overseed, overseed*
- 7. Core Aerate, Topdress, or Mulch Leaves**
 - *Reduces thatch, improves soil structure and releases nutrients into the soil*
- 8. Water Deep and Infrequently**
 - *Only if absolutely necessary, deeply soak the lawn once or twice a week with a total of 1" of water*
- 9. Keep Fertilizer and Clippings Off Sidewalks and Driveways**
 - *Prevents runoff of nutrients into our waterways*
- 10. Keep Mower Blades Sharp**
 - *A clean cut prevents disease*

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Portland Press Herald Maine Sunday Telegram

To cut down on lake pollution, please do park on the grass

Water district ideas for filtering runoff into Sebago Lake are put into action in Standish.

By JOHN RICHARDSON, Staff Writer

May 8, 2008



Jack Milton/Staff Photographer

Lynne Richard, the environmental education coordinator at the Portland Water District, shows a grass paver used to create a pervious parking area at the district's Sebago Lake Ecology Center in Standish.

STANDISH — The patch of freshly seeded lawn behind the Portland Water District's ecology center is actually one of the newest weapons in the effort to protect Maine's largest source of drinking water.

The new lawn will serve as a parking area, supported by a buried plastic framework that can hold up cars and trucks while allowing rainwater to soak into the ground so it doesn't run downhill and wash pollutants into Sebago Lake.

"You can drive on this and it won't become a muddy mess," said Lynne Richard, environmental education coordinator for the water district.



Jack Milton/Staff Photographer

Photos by Jack Milton/Staff Photographer

A rain garden at the ecology center in Standish features captures and filters storm water from the building's roof that might otherwise flow directly into Sebago Lake, carrying pollutants with it. As development increases, the number of rooftops and the amount of pavement around the lake is increasing, and subsequent runoff could harm the water supply.

Storm water flowing off rooftops, driveways, roads and chemically fertilized lawns is a growing threat to Sebago and lakes around the state, many of which now bloom with green algae because of the infusion of nutrients.

It's a problem that can spoil water quality and ruin the experience for swimmers, anglers and lakefront residents. It also could eventually cost water district customers throughout the Portland region more than \$50 million in additional filtration equipment.

"For a long time, factories and municipal treatment plants were the largest polluters to surface waters, but we're finding that now the biggest pollution is our own backyards," said Barbara Welch, a biologist and lakes education coordinator for the Maine Department of Environmental Protection.

As the threat and the awareness grow, so do efforts to keep polluted storm water out of Maine lakes.

A new state law requires retailers to notify customers that fertilizer containing phosphorous -- the primary threat to lakes -- should not be spread on lawns without first having the soil tested to find out if it is needed. The vast majority of Maine lawns have plenty of phosphorous in the soil already, so any more will just wash off in a heavy rain, according to soil scientists.



Jack Milton/Staff Photographer

Infiltration steps at Portland Water District's Sebago Lake Ecology Center are designed to slow and absorb storm water and keep it from running off into the lake.

STOPPING THE FLOW

Here are some tips for preventing pollution from running off lawns.

- Reduce lawn area and plant native shrubs and trees. The deeper roots absorb more water, plus there will be less mowing.
- Avoid lawn fertilizer with phosphorous unless a soil test indicates it's needed. (The second of the three numbers on fertilizer labels refers to phosphorous. The first number stands for nitrogen and the third for potash.)
- Test soil using kits available at garden stores, the University of Maine Cooperative Extension Offices, Soil and Water Conservation Districts or by calling the

The Maine Board of Pesticides Control and other agencies are working on a demonstration project next to Back Cove in Portland and hope to plant a variety of earth-friendly gardens this summer. The idea of yardscaping -- moving away from large, chemically fertilized lawns -- is catching on, said Gary Fish, environmental specialist for the board.

"In the last year, things have really changed. Interest has really grown," he said. "It has been, in my mind, a drastic reversal."

The grass pavers at the Portland Water District's Sebago Lake Ecology Center is part of a new demonstration project that officially opens with a public tour this morning. Called the "Pervious Pathway," the project displays more than 12 steps that property owners can take to make sure they don't contribute to the runoff problem.

The grass pavers are one of the newest technologies and essentially reinforce a part of the lawn so cars and trucks won't make muddy ruts or crush the lawn's roots. More traditional strategies include rain barrels to collect water from roof drains, gardens that capture and absorb storm water and landscape steps made out of wood and crushed stone.

"That really keeps the water from shooting right down into the lake," Richard said. "We want to encourage people to keep their rainwater to themselves."

Erosion from lake-front properties is an obvious concern, but dirty storm water also can reach the lake from miles away. Runoff that starts as far west as Bethel will eventually find its way into Sebago Lake, and potentially into the drinking water that comes out of a tap in Scarborough, Richard said.

The demonstration project will supplement the district's education programs, which include free property inspections and advice about reducing runoff and grants to help pay for improvements, Richard said. "There's nothing like being able to show a person."

Those efforts, and the fact that Sebago water remains relatively clean and algae-free, has so far allowed the water district to avoid adding special filtration equipment that's required in most reservoirs and could cost \$50 million, Richard said. "It's a huge deal for our ratepayers."

The risk of storm water pollution accumulating in the lake is mounting as development pressure brings more rooftops, roads and lawns to southern and western Maine. But Sebago has so far avoided problems with phosphorous that have turned other lakes green.

state soil lab at 581-3591.

- Leave grass clippings to feed lawns. Lawns older than 10 years need no additional fertilizer. Younger lawns need nitrogen.
- Use a rain barrel to collect water from roof downspouts. The Portland Water District is offering barrels for \$65 by calling 774-5961. Orders are due by May 15.

Sources: Maine Department of Environmental Protection, Portland Water District and www.yardscaping.org.

"I think it's within each of our control to keep it that way," Richard said.

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Pest infests Bangor lawns

Friday, May 09, 2008 - Bangor Daily News



Clyde Folsom shows a bare patch on his lawn in Bangor which he said is attributable to a grub worm infestation. (Bangor Daily News/John Clarke)

Many homeowners in the Bangor area are seeing brown instead of green this spring thanks to an invasive pest that is ruining even the most well-manicured lawns and is attracting other unwelcome guests.

And experts say that, unfortunately, there is no easy or quick fix to the lawn-killing infestation.

Lawn jockeys, landscapers and pest-control specialists report that grub worms have infested grassy areas throughout central and southern Maine, with the Bangor region and coastal areas bearing the brunt of the bugs' wrath.

Got grubs?

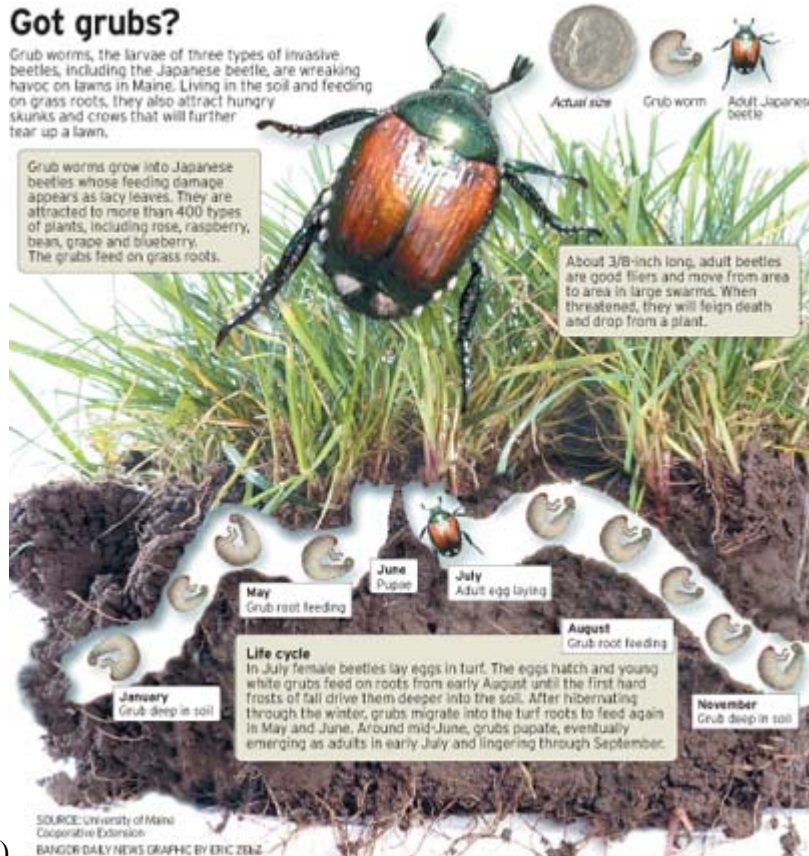
Grub worms, the larvae of three types of invasive beetles, including the Japanese beetle, are wreaking havoc on lawns in Maine. Living in the soil and feeding on grass roots, they also attract hungry skunks and crows that will further tear up a lawn.

Grub worms grow into Japanese beetles whose feeding damage appears as lacy leaves. They are attracted to more than 400 types of plants, including rose, raspberry, bean, grape and blueberry. The grubs feed on grass roots.



Actual size Grub worm Adult Japanese beetle

About 3/8-inch long, adult beetles are good fliers and move from area to area in large swarms. When threatened, they will feign death and drop from a plant.



"In Bangor, it's a real infestation and a real problem," said homeowner Clyde Folsom. "Half of my side lawn is gone, and every house on my street has been infested."

Grub worms are the larvae of three types of invasive and pesky beetles: the well-known Japanese beetle and the lesser-known but fairly widespread European and northern masked chafer beetles, both of which resemble common June beetles.

All three beetles lay their eggs in the soil during the summer. Those eggs soon hatch into small grubs that spend the next several months devouring grass roots. The larvae then spend the winter deeper in the soil and resume feeding in the spring before emerging as adult beetles in early summer.

Russ)

Jim Dill, pest management specialist at the University of Maine Cooperative Extension in Orono, said the patches of dead grass many homeowners and businesses are finding this spring are actually the remnants of an infestation last year.

A week or two of solid, below-zero temperatures usually helps keep populations of these beetles in check

in Maine, Dill said. But this past winter was relatively mild temperature-wise, and the early snow helped insulate the ground.

"So the grubs survived very well," Dill said. "Fast-forward to the spring. The grass is trying to grow but the problem is the roots aren't there because they've all been chomped off."

The result is large patches of dead and dying grass throughout the region. And if brown grass wasn't bad enough, skunks and crows make it even worse aesthetically by tearing up lawns in search of the fat, protein-rich grubs.

So what is a homeowner to do? That depends on whom you ask.

Alan Peters with NaturalLawn of America in Hampden said that, unfortunately, homeowners need to apply an insecticide to kill the grub worms. Re-seeding and then watering the lawn during the summer, especially in late July and August, will also help prevent another crop of beetles.

"You have got to treat them," Peters said. "If you don't get rid of them now, they are going to be back unless we have a very wet summer."

But the Cooperative Extension's official recommendation is treat in the late summer and early fall, when grubs are small and more susceptible to insecticides for the greatest effect.

Dill said the large, whitish grubs readily found under the soil now are fully grown so insecticides are less effective, meaning it will take more of the costly chemicals to have an impact. Besides, the damage to the grass was done last year and earlier this spring, he said.

"You can kill some of them, but you can't kill a lot of them," Dill said. "So you might as well wait."

Those who prefer to avoid insecticides can purchase a type of tiny worm known as a nematode that is a natural parasite to grubs. Nematodes can also be applied in late July or thereafter to target the small grubs, Dill said. But they cost more and are often less effective than insecticides, he said.

Milky spore, which is often sold as a remedy for grubs, is not effective in Maine's colder climate, Dill said.

Groundskeepers at Bangor's Mount Hope Cemetery aren't waiting to treat their grass.

Cemetery superintendent Stephen Burrill said the grubs are "devastating" large areas, especially where the grass tends to be drier. Last Thursday and Friday alone, cemetery crews went through five or six truckloads of hydroseed as they raked up the dead grass, re-seeded and then treated the area.

Burrill said he has one crew of workers whose sole job right now is fighting grubs.

"Every day I come in there's a new area," Burrill said. "It's a costly application. But until we get a cold winter, the problem is not going to go away."

Not far away on Essex Street, Folsom ripped up several chunks of dead grass in his yard with an easy pull of his rake. Underneath each clump of turf lay a handful of fat, white grubs that squirmed in the bright May sun.

Frustrated by the conflicting advice he has received, Folsom said he has not decided how to attack his grub problem. But he knows it won't be cheap no matter what course he takes.

"I tell you it's discouraging because I really try to take care of my lawn," said Folsom, a retiree and writer. "I treated this last summer and you can see what good it did."

Beleaguered by grub worms, Bangor turns to the experts

Thursday, May 29, 2008 - Bangor Daily News, by Dawn Gagnon

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Grub worms, such as this one found just under the surface of Clyde Folsom's lawn in Bangor, are typically the larvae of Japanese beetles and have become an increasing problem in many area lawns this season. (Bangor Daily News/John Clarke Russ) [Buy this photo](#)

the lawns of many private property owners all have been struck.

Asking the questions Wednesday were staff from the city's public works and parks and recreation departments, who are responsible for maintaining acres and acres of lawns in such places as cemeteries, parks and playgrounds.

Topics covered included the types of grub worms that have appeared in the area, chemical and organic options for managing them and when the cycle can be expected to end.

The upshot was that there are no easy answers. The grubs can't be eradicated, only managed.

According to Clay Kirby, an Extension entomologist, the European chafer is the culprit behind more than 90 percent of the problem, with the Japanese beetle accounting for the rest.

Kirby pointed out that the recently arrived chafer population appears to be "more active, more aggressive" than some of the other types that have preceded it.

Exacerbating the problem last year and this year were relative warm wintertime ground temperatures, added James Dill, Extension pest management specialist.

Some options for managing the grubs include pesticides, but those are best applied in late summer, Kirby said. He said the kind of pesticide depends on the type of insect being targeted.

A less toxic option is to apply nematodes, which are microscopic worms that carry bacteria that excrete toxins.

Gary Fish, manager of pesticide programs for the state pesticide control board, said homeowners and others trying to manage grub worms should choose the least toxic method they can.

Because the issue also has become a hot topic for residents, the city broadcast the session live over its

BANGOR, Maine - The recent rash of grub worms that have been devouring lawns in coastal and eastern Maine has prompted Bangor officials to call in the experts.

Two insect experts from the University of Maine's Cooperative Extension and a pesticide specialist from the Maine Board of Pesticides Control came to City Hall on Wednesday for a nearly hour-long question-and-answer session.

One need not look far to see the havoc the grub worms are wreaking in the area. Patches of dead grass, some of them quite large, have been appearing at random throughout the region.

Parks, cemeteries, historic districts and

cable access channel and taped it so it can be rerun in the weeks ahead.

Bangor residents who want to watch reruns of Wednesday's information session over the next two weeks can see it on channel 7 on the Time Warner cable network at the following times: 9 a.m. and 8 p.m. on weekdays beginning today, and 10 a.m. and 8 p.m. on Saturdays and Sundays.

The schedule is subject to change if the city should need to air live broadcasts that have not yet been scheduled.

For more information, the experts suggested visiting the state's www.yardscaping.org Web site.

<http://bangornews.com>

MAINE BIOBLOG

PUBLISHED BY THE MAINE BIOTECHNOLOGY INFORMATION BUREAU.

THURSDAY, MAY 22, 2008

Montville digs in its heels

The town of Montville, which [passed an ordinance](#) at town meeting banning the planting of biotech-enhanced crops, is girding for battle with the state. In April, the Department of Agriculture and the Maine Board of Pesticides Control sent letters to the town advising them the ordinance violated several provisions of state law. On May 13, Montville selectmen responded to Agriculture Commissioner Seth Bradstreet claiming Maine's right to farm law does not apply to the ordinance. In their view, Montville enacted a "valid municipal ordinance" in an exercise of "municipal sovereignty." The town has not responded to the Board of Pesticides Control.

Commissioner Bradstreet's letter of April 10 stated that 17MRSA 2805(4) requires the town to send the department a copy of the ordinance for review 90 days before the scheduled vote. Since that did not take place, the ordinance is "invalid" in the eyes of the state.

The letter from Henry Jennings, director of the Maine Board of Pesticides Control, advised the town it had a responsibility to submit the proposed ordinance to the BPC seven days in advance of the vote under 22 MRSA, Section 1471-U. The BPC has jurisdiction because one of the banned biotech crops is insect-resistant corn, a plant that is regulated in Maine as a pesticide. As a result, Jennings declared the ordinance to be "null and void."

[In its letter](#), Montville officials advanced the interesting theory that the state right to farm law prohibits towns from banning "farm operations," whereas the ordinance banned "products." And since the law requires advance notice of ordinances that impact farm operations, advance notice of an ordinance banning a product is not required. Since the statute makes a clear distinction between "products" and "operations," the selectmen concluded, "we believe the statute was not intended to apply to 'products.'"

The town's response begs the question of the Board of Pesticides Control's ruling that the ordinance is "null and void," but it is clear, Montville does not intend to cave in as other towns have done on

LINKS

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ABOUT ME

DOUG JOHNSON

Douglas R. Johnson, Ph.D., is executive director of the Maine Biotechnology Information Bureau and a partner in GreenTree Communications, a life sciences public relations firm located in Stonington, Maine

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this issue.

(For more information on this controversy, go to www.mainebioinfo.org)

POSTED BY DOUG JOHNSON AT 8:11 AM
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Town of Montville

Genetically Modified Organisms Ordinance

TITLE:

This ordinance shall be known and cited as the Town of Montville Genetically Modified Organisms Ordinance.

PURPOSE:

The purpose of this Ordinance is to ensure the right of Montville's residents to equitable access to life-giving seed; to protect Montville's native plants and trees from cross-contamination by genetically modified plants and to protect garden varieties bred using traditional plant propagation methods from genetically engineered or genetically modified organisms; to protect the health of Montville's inhabitants by ensuring they are confident of the integrity of the plants they grow and eat; and to defend the economy of the farmers, gardeners, and foresters in the Town of Montville. Therefore, the Town of Montville deems it necessary to prevent the cultivation of genetically modified crops in Town.

AUTHORITY:

This Ordinance is enacted pursuant to the inherent, inalienable, and fundamental right of the citizens of the Town of Montville to self-government, and by authority granted to the municipal government of Montville by all relevant Federal and State laws and their corresponding regulations, including, but not limited to, the following:

The Declaration of Independence, which declares that the people of Montville are born with "certain unalienable rights" and that governments are instituted among people to secure those rights;

The Maine Constitution, which declares in its preamble that governments are created to "establish justice, insure tranquility . . . promote our common welfare, and secure to ourselves and our posterity the blessings of liberty";

The Maine Constitution, Article I, Section 1, which declares that "All people are born equally free and independent, and have certain natural, inherent and unalienable rights, among which are those of enjoying and defending life and liberty, acquiring, possessing and protecting property, and of pursuing and obtaining safety and happiness";

The Maine Constitution, Article 1, Section 2, which declares that "All power is inherent in the people; all free governments are founded in their authority and instituted for their benefit; they have therefore an unalienable and indefeasible right to institute government, and to alter, reform, or totally change the same, when their safety and happiness require it";

Maine Statute Title 7, Section 1-A which states: " The Legislature finds agriculture to be a major industry in the State, contributing substantially to the state's overall economy, essential to the maintenance and strengthening of rural life and values and necessary to the preservation of the health, safety and welfare of all of the people of this State."

"The survival of the family farm is of special concern to the people of the State, and the ability of the family farm to prosper, while producing an abundance of high quality food and fiber, deserves a place of high priority in the determination of public policy. For this purpose there is established the Department of Agriculture, Food and Rural Resources."

Maine Statute Title 7, Section 1-B which states: “agriculture is significant to the State's economy and that a prospering, stable rural community contributes to the rural quality of life, the preservation of productive farm, farmlands and open space.”

“The Legislature finds that programs that improve the employment opportunity, rural skills, food supply, health and nutrition of the rural people of Maine will improve the economy of Maine and improve the rural quality of life and the health of people and are therefore in the public interest.”

“The Legislature further finds the preservation of rural life and values in the State to be the joint responsibility of all public agencies, local, state and federal, whose policies and programs substantially impact the economy and general welfare of people who reside in rural Maine, such as the development and implementation of programs that assist in the maintenance of family farms...”

The provisions of Title 30-A of the Maine Revised Statutes, which recognizes the authority of Maine municipalities to adopt any Ordinance or Bylaw on any subject not expressly prohibited by the Maine legislature, and which establishes a presumption that all Ordinances are valid as adopted pursuant to a municipality’s inherent home rule authority.

DEFINITIONS:

- A. “*Crop*” means a living, growing agricultural or forest product.
- B. “*DNA*”, or deoxyribonucleic acid, means a complex protein that is present in every living cell of an organism. It contains the genetic code for the organism’s development and transmits hereditary patterns.
- C. “*Genetically modified organisms*” (sometimes referred to as “*GMOs*”) means a specific organism or offspring of an organism containing DNA which has been altered or amended through genetic engineering. Such organisms are also sometimes referred to as “*genetically engineered organisms*.” Through pollination, the DNA of GMOs may crossover to non-GMO crops. Subsequent generations of the non-GMO crop will contain the genetically altered DNA and may or may not exhibit GMO traits.
- D. “*Genetic engineering*” (as defined by the USDA as part of the National Organic Program) “refers to a variety of methods used to genetically modify organisms or influence their growth and development by means that are not possible under natural conditions or processes and are not considered compatible with organic production. Such methods would include recombinant DNA, cell fusion, and micro- and macroencapsulation, and the following results when achieved by recombinant techniques: gene deletion and doubling, introducing a foreign gene, and changing the positions of genes. Such methods would not include the use of traditional breeding, conjugation, fermentation, hybridization, in vitro fertilization, or tissue culture.”
- E. “*Organism*” means any living thing.
- F. “*Produce*” means “to bring forth; bear; yield” (from Webster’s New World Dictionary, third college edition).

FINDINGS:

- A. Genetically engineered life forms and products are being developed with precipitous speed, and have been introduced into the marketplace before the potential risks and long-term effects of these products have been studied. There are inadequate long-term studies on the impact of genetically modified foods and their impact on humans and non-human organisms. It is necessary to protect Montville's agricultural industry, forest industry, natural environment, private property rights of our citizens, and the health and safety of our people by restricting the introduction of genetically altered crops, and other organisms.
- B. The impact on our natural environment from genetically engineered organisms and contamination from such is unpredictable, ultimately uncontrollable, and has received little study. It is undeniable that genetically engineered crops have the potential to contaminate other crops, plants, and trees at a distance, through cross-pollination. This may alter or displace existing species of plants (both native plants and those varieties grown by gardeners, farmers, nurserymen, and foresters), thereby threatening historically important preserved and cultivated varieties of food crops, potentially destroying local ecosystems and potentially irreparably and dramatically altering biodiversity.
- C. The planting of genetically modified crops may accelerate the development of resistant pest populations, thus limiting the types of pesticides and herbicides that can be used in the future to control those pests. Therefore, these crops may have the potential to produce "super weeds" and "super insects" that are difficult and expensive for gardeners, farmers, foresters, and communities to control.
- D. It is impossible for a farmer or forester who grows genetically engineered seed to contain the pollen (reproductive cells containing genetically altered material) from those crops, and to prevent the contamination of conventionally propagated crops belonging to others at a distance.
- E. The unintended presence of genetically modified plant material in agricultural products can have significant economic impacts for farmers and others who sell in organic markets and in other domestic and foreign markets that prohibit or reject products containing such material.
- F. Agricultural impacts related to the release of genetically modified plants into the open environment also effect non-commercial gardens, including but not limited to, residential gardens, community gardens, school gardens, and others. Many Montville residents sustain their families with produce grown in their home gardens. Sound human health and food quality concerns deserve the utmost protection in our community.

STATEMENT OF LAW:

- A. It shall be unlawful for a person, partnership, firm, or organization of any kind to produce genetically modified organisms in the Town of Montville for a period of ten (10) years.
- B. A person growing genetically modified crops at the time this Ordinance is enacted may not expand production of GMO crops and will have a period of two (2) years to phase out the growing of all GMO crops.
- C. Within thirty (30) days of the enactment of this Ordinance, a grower using GMO seeds must sign an agreement with the Health Officer that the phase-out process has begun.

- D. As they continue to grow GMO crops during the phase out period, the grower must register with the Health Officer the number of acres, seed variety or number, and seed source of GMO crops still under cultivation.
- E. At the end of two (2) years, the grower will cease to grow GMO crops as long as the moratorium outlined in the Ordinance is in effect and will provide proof to the Health Officer that he/she has transitioned to growing non-GMO crops.

SUNSET:

- A. The legal enforceability of this Ordinance shall expire ten (10) years after its date of passage.
- B. At any time previous to the expiration date of, or within thirty (30) days of the expiration date of this Ordinance, the issue of extending its expiration date shall be considered by the Town of Montville. At that time, the Town may, by majority vote, extend the legal enforceability of this Ordinance for another ten- (10) year term.

ENFORCEMENT:

- A. The Code Enforcement Officer is hereby designated to enforce this Ordinance and shall exercise such powers as are legal and necessary to carry out and effectuate its purpose.
- B. If a person currently growing GMO crops does not phase out such crops in the time specified in this Ordinance and an agreement cannot be negotiated with the Code Enforcement Officer, the grower may make an appeal to the Board of Appeals.

ADMINISTRATION:

This Ordinance shall be administered by the Select Board of Montville.

SEVERABILITY:

If any portion of this Ordinance shall be held to be invalid, such decision shall not affect the validity of the remaining portions of the Ordinance.

EFFECTIVE DATE:

The effective date of the Ordinance is the date of the adoption by vote at a Town Meeting.



John Elias Baldacci
Governor

STATE OF MAINE
DEPARTMENT OF AGRICULTURE
Division of Animal Health & Industry
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028



Seth H. Bradstreet, III
Commissioner

April 10, 2008

Scanned copy of the original

Abbie Hills
Municiple Clerk
414 Center Road
Montville, ME 04941
(207) 342-5544

Dear Abbie Gibbs;

On Friday, April 4, 2008, the Department of Agriculture received a copy of an ordinance that had been adopted by the Town of Montville on Saturday, March 29, 2008. That ordinance was entitled "Town of Montville Genetically Modified Organisms Ordinance". A search of Department records did not uncover any previous communication from the town regarding this ordinance.

A provision in Maine law, 17 MRS A 2805(4), requires that towns provide the Department a copy of any proposed ordinance that would impact agriculture in that town for review and comment as to whether the ordinance would interfere with the use of agricultural best management practices. The submission needs to be made at least 90 days prior to the public meeting where it would be adopted. It would be better to say that the proposed ordinance was not submitted to the Department for review and therefore is invalid due to the town's failure to meet the adoption requirements of 17 MRS A section 2805(4).

If you have any questions, you may contact my office at (207) 287-3419.

Sincerely,

X7 ^ ^ N

Seth Bradstreet, III, Commissioner
Maine Department of Agriculture
Food & Rural Resources

cc.
Ned Porter
Bob Batteese
Don Hoenig



JOHN ELIAS BALDACCI
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, FOOD AND RURAL RESOURCES
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

SETH H. BRADSTREET III
COMMISSIONER
HENRY JENNINGS
DIRECTOR

April 24, 2008

Scanned copy of the original

Abbie Hills
Municipal Clerk, Town of Montville
414 Center Road
Montville, ME 04941

COPY

Dear Ms. Hills:

It has been brought to my attention that the Town of Montville recently adopted a municipal ordinance regulating the use of genetically modified organisms, including genetically modified crops. Certain genetically modified crops, such as varieties of Bt corn, contain genes that are classified as pesticides under federal law. Under Maine statutes (22 MRS A, Section 1471-U), the clerk of any municipality adopting an ordinance regulating the storage, use or distribution of pesticides must file notice and a copy of the proposed ordinance with this Board at least seven days in advance of the meeting of the legislative body or public hearing at which the ordinance will be considered. The clerk shall also notify the Board within 30 days after the adoption of the ordinance.

Since the Board was not notified in advance of consideration of Montville's Genetically Modified Organism Ordinance, the ordinance is considered null and void with respect to any genetically modified organisms that contain genes classified as pesticides by the federal Environmental Protection Agency. A copy of the MRSA Section 1471-U is attached for your information. Readopting the ordinance in accordance with MRSA 1471-U will ensure that the ordinance is lawful with respect to the state pesticide law.

Thank you for your cooperation in this matter. Please feel free to contact me if you have any questions or comments.

Sincerely,

Henry Jennings
Director
Maine Board of Pesticides Control

Selectmen's OFFICE
Town Of Montville, Maine

414 CENTER ROAD
MONTVILLE, MAINE 04941

May 13, 2008

Seth Bradstreet, III, Commissioner
Maine Department of Agriculture
Food and Rural Resources
28 State House Station
Augusta, Maine 04333

Dear Commissioner Bradstreet:

This letter is a response to your letter of April 10, 2008 stating that the Town of Montville's Genetically Modified Organisms (GMO) Ordinance is invalid. Your stated reason is the Town's failure to comply with the reporting requirement of 17 MSRA 2805(4).

In our opinion, this reporting requirement does not apply to Montville's ordinance because the ordinance applies to plants, animals, and seeds, which by statute are "products" not "operations".

2805(1)(B) "Farm operation" means a condition or activity that occurs on a farm in connection with the commercial production of farm products and includes, but is not limited to, operations giving rise to noise, odors, dust, insects and fumes; operation of machinery and irrigation pumps; ground and aerial seeding; ground spraying and disposal of manure; the application of chemical fertilizers, soil amendments, conditioners and pesticides; and the employment and use of labor.

2805(1)(C) "Farm product" means those plants and animals useful to humans and includes, but is not limited to forages and sod crops, grains and food crops, dairy products, poultry and poultry products, bees, livestock and livestock products and fruits, berries, vegetables, flowers, seeds, grasses and other similar products.

2805(4) Application; municipal ordinances. This section does not affect the application of state and federal laws. After the effective date of this subsection, a municipality must provide the Commissioner of Agriculture, Food and Rural Resources with a copy of any proposed ordinance that impacts farm operations. The clerk of the municipality or a municipal official designated by the clerk shall submit a copy of the proposed ordinance to the commissioner at least 90 days prior to the meeting of the legislative body or public hearing at which adoption of the ordinance will be considered. The commissioner shall review the proposed

ordinance and advise the municipality if the proposed ordinance would restrict or prohibit the use of best management practices. This subsection does not affect municipal authority to enact ordinances.

By making a clear distinction between “products” and “operations” we believe the statute was not intended to apply to “products.”

Although 2805(4) requires the Commissioner to review a proposed ordinance with respect to best management practices, it is our understanding that there are currently no best management practices for GMOs. In fact LD1650, just signed into law on April 14, directs the Maine Department of Agriculture to establish best management practices for the use of genetically engineered crops.

And finally, the Town of Montville has enacted a valid municipal ordinance whereby its citizens have exercised their right of municipal sovereignty to ensure the genetic integrity of their food system.

Sincerely,

Jay LeGore, 1st Selectperson

Glen Widmer, 2nd Selectperson

Herman Peaslee, 3rd Selectperson



Camden's pest policy encourages toxin changes

By Lynda Clancy

VillageSoup/Knox County Times Reporter

CAMDEN (May 1): Camden is now incorporating less toxic methods of keeping its public parks and fields free from pests and weeds following approval by the town's select board of a new policy.

Advertisement

The work may be more laborious, but the new policy approved April 22 establishes a higher threshold for the application of chemicals to municipally owned land.

"All pesticides are toxic to some degree and the widespread use of pesticides is both a major environmental problem and a public health issue," the policy said. "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."

An advisory committee comprising town and school employees, as well as a few citizens, will keep an eye on how the public properties are treated for pests and weeds, encourage reduction and elimination of pesticide use on private property, and introduce cultural and management practices to prevent pest problems on town-owned land.

Jeff Kuller, director of parks and recreation for Camden, said Tuesday that the effort is under way to identify an organic fertilizer plan, and eliminate the pesticide application on the in-field at the Camden Snow Bowl's baseball field. Until now, an equivalent of Roundup has been used to keep the weeds from popping up in the sand.

"We will eliminate that now and go to all-mechanical systems," Kuller said. "It will be up to us, staff and users to drag it, perhaps hoe, and perhaps burn."

The committee will also explore using organic herbicides, such as vinegar, in areas where weeds are regularly culled.

Establishing such a policy was first introduced by Citizens for a Green Camden, a group of local residents concerned about pest management practices in general.

According to the policy approved last week, pests are considered undesirable insects, fungi, bacteria, viruses, nematodes, rodents, birds, animals, or other micro-organisms (except viruses, bacteria or other micro-organisms on or in living persons or other living animals) declared to be a pest under federal or state laws. Common examples in turf grass and the landscape can be, but are not limited to, crabgrass, knotweed, poison ivy, chinch bugs, grubs, and a variety of plant pathogens.

The committee will eventually include a school board member, the town parks and recreation director, and the town's director of Camden Harbor Park and Amphitheatre, as well as two citizen representatives, knowledgeable about organic approaches to pest problems and organic horticulture, one of which is a member of the Conservation Commission; and an arborist or horticulturalist with a Maine master pesticide applicator license, preferably committed to organic pest management/integrated pest management.

"Camden supports the precautionary principle (as defined by the wingspread statement of January 1998) as the basis for its pest management policy," the policy said. "The precautionary principle states, 'When an activity raises threats of harm to the environment or human health, precautionary measures should be taken, even if some cause and effect relationships are not yet fully established.'

"Therefore, it is the express policy of Camden to refrain from the use of pesticides upon property it owns, uses or controls, except in situations that pose an imminent threat of serious injury to persons, property or agriculture."

Legislation would force pesticide notification

by [Sea Stachura](#), Minnesota Public Radio

March 2, 2008

The Minnesota Legislature is being asked to force farmers and businesses to make their pesticide records public. A bill introduced in the House would require farmers to provide notice when they spray their crops with a pesticide such as atrazine. Currently the Department of Agriculture tracks pesticide sales in the state, but leaves it to farmers to keep track of what pesticides they apply, and how.

Rochester, Minn. — More than 200 pesticides are bought and sold in Minnesota. Some, like atrazine and metolachlor, have been found in significant amounts in streams and groundwater long after they were applied. Research has linked some farm chemicals to disease.

But who, what, when and where those chemicals are applied is not public information. The state doesn't track it.

The bill would create a public database of all pesticides applied in the state. Similar laws are in place in 27 other states.

People should have that information, according to Rep. Ken Tschumper, DFL-La Crescent.

"The bill is not that onerous. Pesticide applicators have to keep track of every application of pesticide they do. All we're simply saying is that data, that information, needs to be made public," he says.

"Pesticide applicators have to keep track of every application of pesticide they do. All we're simply saying is that data, that information, needs to be made public."

- Rep. Ken Tschumper, DFL-La Crescent

Tschumper is the author of the Pesticide Right to Know bill and a dairy farmer in southeastern Minnesota. Particularly high concentrations of pesticides like atrazine have been found in the area.

For example, let's say a farmer uses two pounds of Roundup on an acre of field at noon on March 30. The wind speed was 15 mph from the southwest and the temperature was 45 degrees. All of that information would have to be uploaded into a Department of Agriculture database that could be accessed online.

Tschumper's bill goes further. With restricted pesticides that are more volatile, farmers and commercial applicators would have to notify neighbors.

"The applicators have to give some sort of advanced notice -- like a day or two ahead of time when they're going to apply these pesticides, so that the public can be aware of that and protect themselves if there is spray drift, for example," Tschumper says.

Spray drift is illegal in Minnesota, but enforcement of the law is based on complaints. Restricted pesticides like atrazine easily convert to gas and wind currents carry the chemical off. It has been found in watersheds hundreds of miles away from where it was applied.

Research shows pesticides do long-term damage to humans and wildlife, according to Sara Rummel of Clean Water Action Alliance, which backs the legislation.

"We had one woman who was blinded; her eyes got burned. Another woman -- she and her children were exposed. They got very severe rashes and chemically-induced asthma," Rummel says.

Currently, the Department of Agriculture collects pesticide records after someone complains, though officials say they do some other spot checking.

The department doesn't have the funding for the requirements of the proposed legislation,

according to the Department of Agriculture's Assistant Commissioner Joe Martin.

"Looking at just the one part of the bill, of having farmers and applicators submit their records to us, and for us to post them we figure that would cost around \$2 million," he says.

Expenses would be covered in part by the state's Pesticide Registration Fund.

Funds from that account are being used for other department activities currently, like water quality management, Martin says. He doesn't think the bill would help his department enforce the law. He's also not sure it would help people who've been exposed to pesticides so long as they've sought medical attention.

"Physicians and all doctors have immediate access to applicator records. Once we get a complaint, we take them very seriously. We dispatch people within hours, less than a day," Martin says.

In the past, doctors have complained they've been denied access to pesticide records. When they are given access, it often takes several hours to learn what chemical has been used.

This bill has bounced around the state Legislature for years, but Tschumper says support for it has grown this year. The Environment and Natural Resources Committee will take up the bill this week.

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Water worries

'THIS RAISES A RED FLAG' | Potentially toxic bug repellent DEET turns up in Sun-Times tests of Chicago's drinking water

April 21, 2008 BY [STEPHANIE ZIMMERMANN](#) Staff
Reporter/szimmermann@suntimes.com

[Recommend \(27\)](#)

In this age of West Nile virus, Lyme disease and other insect-borne health threats, millions of Americans have made slathering and spritzing themselves with the powerful repellent DEET part of their summer routine.

The insect repellent is used by 100 million Americans each year, in total quantities exceeding the use of some agricultural pesticides.

But after we shower and wash our clothes, DEET winds up in rivers and lakes.

And now, testing done for the Chicago Sun-Times has found, it's in our drinking water.

The concentration detected in a sampling of Chicago tap water was low -- 8.3 parts per trillion. Health experts said the level found in the Sun-Times testing shouldn't pose a health hazard.

Still, said Mohamed Abou-Dania, a professor at Duke University who has done extensive research on the neurological effects of DEET, "This raises a red flag. [When] you have so many people using it, the risk is there."

And the chemical was detected in Chicago drinking water sampled in March, when one would expect the use of mosquito repellent to be low.

The U.S. government doesn't have standards for DEET in drinking water. Nor does it require the removal of other contaminants recently found in other water studies -- including pharmaceuticals, flame retardants and plasticizers.

Last month, Illinois officials announced that they are testing treated and untreated water around the state for chemical compounds. The cities whose water will be tested include Chicago, Elgin, Aurora, Rock Island and East St. Louis. State officials said they expect to release results of those tests in late June.

Chicago also is doing further sampling of raw Lake Michigan water and finished drinking water, said John Spatz, commissioner of the city's Department of Water Management. Spatz said the city is using multiple labs "to build a baseline database over time" and get a better idea of what's in the water. He stressed that the trace amounts found so far aren't hazardous but point to a need for better monitoring.

"The water is safe to drink," said Spatz. "The last thing we want is to erode confidence in the public water supply."

Used as directed, DEET is considered safe for people over 2 months of age. But at very high levels or when used long-term, DEET has been implicated in nervous-system damage. Medical literature on the chemical cites rare cases of children suffering poisoning or even death from overexposure or ingestion of DEET.

Abou-Donia's studies of DEET exposure to laboratory rats found no effect when a standard dose was used for 30 days. After 60 days, though, brain-cell death occurred.

When DEET was approved a half century ago for consumer use, no one considered the potential environmental effects.

But after DEET is washed down the drain, flushed down a toilet or thrown in the garbage, it doesn't degrade quickly. It has been detected in natural-water bodies throughout the United States, Europe, Australia and even in the North Sea.

Chances are that it has been in our water for some time but we didn't know it, said Paul Stackelberg, a hydrologist with the U.S. Geological Survey, because only recently has testing technology improved enough to detect it.

Citing potential health and environmental concerns, some countries have scaled back the amount of DEET allowed in consumer products. In Canada, the maximum-allowed concentration is 30 percent. But in the United States, consumers can readily buy repellents containing 100 percent DEET.

Abou-Donia said concentrations above 30 percent are overkill and not necessary, "especially if you have a child or infant."

The drinking water in the Sun-Times tests came from an unfiltered kitchen faucet in a home on the city's North Side -- sufficient to indicate whether a wide range of chemicals might be present in the city's drinking water, according to the Kelso, Wash., testing laboratory Columbia Analytical Services.

The lab tested the water for the presence of 57 chemical compounds, ranging from synthetic hormones and anti-convulsants to Prozac, acetaminophen, methadone, flame retardants and plasticizers. Such compounds are not required to be removed from drinking water, and conventional treatment processes aren't equipped to catch them.

Though pharmaceuticals have been found in public water supplies elsewhere, the only compound besides DEET that the Sun-Times sampling detected was caffeine -- at what was described as a safe concentration of 7 parts per trillion.

Benjamin H. Grumbles, assistant administrator for water for the U.S. Environmental Protection Agency, said in a statement that while "the United States has one of the safest drinking-water supplies in the world," his agency "is concerned about the detection of a growing number of pharmaceuticals and other personal-care products in water. These contaminants occur at very low levels in water, and we continue to evaluate their effects on public health and aquatic life."

Unlike some chemical compounds, DEET remains fairly intact as it passes through sewage or drinking-water treatment plants.

The U.S. Geological Survey's Stackelberg tracked water at a New Jersey water-treatment facility, testing it for contaminants when it began as source water and then after each step of the cleaning process. He found DEET at every step, in every one of the samples.

The insect repellent's resilience raises questions about whether it stays in the sediment of streams, and whether fish or birds -- to which DEET can be toxic -- could be harmed over the long term.

"A little bit seems to go a long way in the environment," said Dana W. Kolpin, a research hydrologist with the Geological Survey in Iowa City, Ia., who has studied DEET.

Ed Hopkins, director of the environmental quality program for the Sierra Club, said the U.S. EPA should be more aggressive about getting contaminants out: "They shouldn't be in our water supply, and we need to do much more to keep them out."

Said Stackelberg: "You wonder just how many human-related compounds there are in [a] sample, and what their cumulative effect would be. And right now, we don't really have an answer for that."

Ontario to ban cosmetic use of pesticides

Tom Spears

The Ottawa Citizen

Tuesday, April 22, 2008

The Ontario Liberals will introduce a law today to ban the sale and cosmetic use of pesticides on the province's lawns, Premier Dalton McGuinty announced in a news release Tuesday morning.

The law, which Mr. McGuinty said would take effect next spring if the legislature passes it, would replace all existing municipal anti-pesticide bylaws, and impose new rules on cities, such as Ottawa, that don't forbid the chemicals' use.

Some of the biggest pesticide users in Ontario would be exempt, Mr. McGuinty said, including farmers and forestry companies. Cosmetic pesticides could still be used on golf courses, but would be subject to rules meant to reduce their environmental impact.

The Home Depot said Tuesday it will eliminate traditional pesticides from its Canadian stores by the end of the year.

Annette Verschuren, president of The Home Depot Canada, anticipates that 62 of its 166 Canadian stores will be pesticide free as early as this June.

The decision will affect 60 products, including herbicides, insecticides and slug baits. Pesticides are already banned in 55 municipalities in Canada and the provincial government is introducing legislation to severely curtail their use in Ontario.

The Home Depot is working with suppliers "to develop pesticide alternatives that are environmentally friendly," said Ms. Verschuren.

More to come...

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You can do it.
We can help.



Guide to
**Natural Lawn
& Garden Care**
at The Home Depot





Natural Lawn & Garden Care

at The Home Depot

The Home Depot has made a commitment to green and natural lawn and garden care. As such, we have taken the initiative to phase out a number of synthetic pesticides in order to promote our vision of environmentally-friendly lawn maintenance. This may mean that some of the products you are used to are no longer available. A healthy lawn and garden, however, can still be achieved through the use of natural products. Below is a guide to help you make the transition.

Lawn Condition	Discontinued Synthetic Products		Active Ingredients	Preferred Products		Active Ingredients	Lawn & Garden Care Tips
Weeds	Weedout Roundup Wipeout Killax Laters Grass and Weed Killer		2,4-D Mecoprop Dicamba Glufosinate Ammonium Glyphosate	EcoSense Weed Control Safer's Top Gun		Acetic Acid	A healthy, weed free lawn can be promoted through overseeding, watering 2.5 cm (1") per week, allowing the grass to grow to a length of 7.5 cm (3"), spreading natural fertilizers in late fall, aerating in spring or fall, using natural weed control products, and manually weeding when necessary.
Outdoor Insects	Bug-B-Gon Ant & Chinch Wilson Bug-X Wilson Earwig Destroyer Wilson Ant Killer Dust		Carbaryl	EcoSense Insecticide EcoSense Insecticidal Soap Green Earth Insecticidal Soap Green Earth Ant & Roach Killer EcoSense Insecticide Dust Insectigone Cockroach and Ant Killer	Insectigone Earwig Killer Trounce Dormant Kits 	Pyrethrins Silicon Dioxide Soap Borax Lime Sulphur Fatty Acids Mineral Oil	Insecticidal Soaps require direct contact with the insects to kill, while insecticides sprays and dusts do not require direct contact. Ant and wasp traps provide a safe deterrent to ant colonies. Dormant kits can be used at the beginning of the season to kill wintering insects before they hatch.
Aphids, Molluscs, and Fungi	Wilson Malathion Sevin Garden Dust Fruit Tree Spray Bulb & Soil Dust Rose & Flower Dust Meta Slug Pellets Laters Slug & Snail Killer		Malathion Sevin Phosalone Captan Metaldehyde	Green Earth Insecticidal Soap Sevin Rotentone Insect Dust Green Earth Garden Fungicide Safer's Garden Fungicide Garden Sulphur Dust EcoSense Slug & Snail Bait Safer's Slug & Snail Bait BTK Biological Insecticide		Soap Rotenone Sulphur Ferric Phosphate Silicon Dioxide Bt	Natural pest control is especially important on vegetables or other food crops. Many natural products can be used up to and on the day of harvest (always read directions label). Garden pests can sometimes be naturally repelled through companion plant species – speak to a Designated Live Goods Associate to learn more.
Grubs	Grub-B-Gon Grub Out		Carbaryl	Critter Ridder			Grub damage can be minimized through lawn maintenance techniques described above. Grubs are buried deep within lawns and because natural products biodegrade quickly, they do not have a chance to sink into the soil. Critters like raccoons sometimes dig for them, damaging the lawn. Critter Ridder can be used around laws to repel animals.



homedepot.ca
**You can do it.
We can help.**

Eco Options

News Releases

Home Depot Canada Voluntarily Phases Out Pesticides Across Canada and Provides Consumers Over 50 Options in Natural Lawn Care

TORONTO, ON - April 22, 2008 - The Home Depot® today announced that it will voluntarily stop selling traditional pesticides and herbicides in its stores across Canada by the end of 2008 and will increase its selection of environmentally friendly alternatives.

The Home Depot is the first home improvement retailer to stop selling pesticides voluntarily across Canada and will phase out the products long before legislated deadlines. The Home Depot stores in Quebec do not sell pesticides. In addition, there are currently over 55 municipalities in Canada where the residential use, but not sale, of pesticides is banned. As the leader in the Canadian home improvement industry, The Home Depot will not sell any traditional pesticides and currently offers over 50 natural alternatives for its customers.

“Like our customers, we, at The Home Depot, are concerned about the environment,” said Annette Verschuren, president of The Home Depot Canada and Asia. “We are going above and beyond government regulations by working with our suppliers to develop pesticide alternatives that are environmentally friendly and produce excellent results on lawns and gardens.”

Pesticides will be phased out of The Home Depot stores across Canada starting today. By June 2008, The Home Depot anticipates that 62 of its stores nationwide will no longer sell pesticides, with all 166 stores offering additional environmentally preferred replacement products by the end of 2008.

“Our stores will prominently feature green pesticide alternatives, in addition to our current Eco Options products, and our trained associates will continue to provide customers with product information and tips, as well as on-line support,” added Verschuren.

Product categories currently affected by The Home Depot's voluntary phase-out include herbicides, insecticides, fungicides, slug baits, moss control products and lawn fertilizers with weed control. A total of 60 products will be affected.

As the environmental leader in the home improvement retail sector, The Home Depot Canada has developed a number of environmental initiatives to date. For the past eight years, the company has held its Mow Down Pollution lawnmower trade-in event to help consumers reduce smog emissions when trimming their lawns. The Home Depot Canada also offers more than 1,500 Eco Options products, including all-natural insect repellents, organic plant food and vegetables in biodegradable pots. The wide array of Eco Options also includes compact fluorescent light (CFL) bulbs, programmable thermostats, cellulose insulation, front-load washing machines, and certified wood. The company also offers the only national recycling program for CFL bulbs.

About The Home Depot

Founded in 1978 in Atlanta, Georgia, The Home Depot is the world's largest home improvement specialty retailer with 2,257 retail stores, including 166 across Canada. In fiscal 2007, The Home Depot had sales of \$77.3 billion and earnings from continuing operations of \$4.2 billion. The Company employs more than 300,000 people, including more than 30,000 Canadians.

Note to editors:

An announcement will be made at 11 a.m. today at the Home Depot Leaside store in Toronto at 101 Wicksteed Ave (near Eglinton and Laird) in the Garden Centre, where a demonstration on “How to Garden Without Pesticides” will follow.

For more information or interview requests, contact:

The Home Depot Canada Media Line
(416) 386-5847 Or Publicrelations_Canada@homedepot.com

[Beyond Pesticides Daily News Blog](#)

[EPA Orders Scotts To Stop Selling Unregistered Pesticides](#)

(*Beyond Pesticides*, April 25, 2008) The Environmental Protection Agency (EPA) Region 5 this week issued a “stop sale, use or removal” order against Scotts Miracle Gro Co. and three affiliates, all of Marysville, Ohio, for illegal, unregistered and misbranded weed and fertilizer products with a cancer causing and endocrine disrupting pesticide ingredient. EPA will also issue a stop sale order to Scotts Lawn Care Service. Scotts has agreed to recall two products from all retail locations across the United States and to set up a process for consumers to safely return any unregistered products they may have purchased. EPA ordered the companies, collectively an international producer and distributor of lawn care products, to immediately stop selling and distributing the products which can be identified by the invalid “EPA registration number” listed on the package. Invalid registration number 62355-4 is marketed under names including “Garden Weed Preventer + Plant Food” and “Miracle Gro Shake ‘n’ Feed All Purpose Plant Food Plus Weed Preventer.” The active ingredient of this product is trifluralin, an herbicide that is a possible carcinogen and probable endocrine disruptor, among its [health effects](#). Invalid registration number 538-304 is used primarily by Scotts Lawn Service, a lawn care company. It is marketed under names including “Scotts Lawn Service Fertilizer with .28% Halts,” “Scotts Lawn Service Fertilizer 0-0-7 Plus .28% Halts Pro,” “Scotts Lawn Service Fertilizer 14-2-5 Plus .28% Halts Pro” and “Scotts Lawn Service Fertilizer 22-0-8 Plus .28% Halts Pro.”

An EPA consumer hotline to answer questions about the action has been established at 888-838-1304 (9 a.m. - 4:30 p.m., Central Daylight Time). Questions may also be answered by the National Pesticide Information Center at 800-858-7378 (6:30 a.m. - 4:30 p.m., Pacific Daylight Time, including weekends). A fact sheet and regularly updated information are [posted online](#) by EPA.

At this time EPA considers the risks, if any, posed by these unregistered products to be unknown. EPA and its state partner Ohio Department of Agriculture are conducting a laboratory analysis of these products. EPA advises consumers not to use these products and to store them in a safe, cool and dry place such as a garage or utility shed, and not to dispose of them down the drain, in the garbage or at a community disposal site.

Under the Federal Insecticide, Fungicide and Rodenticide Act, all pesticides must be submitted to EPA for review, evaluation and registration to ensure that they do not pose an unreasonable risk to human health or the environment. The review process is not without its own controversies (such as approving [dangerous uses](#) or [misleading labels](#)), but a company bypassing the process eliminates the possibility for public comment on the potential risks of its product.

“A manufacturer such as Scotts cannot ignore the important legal requirement of registering its pesticides,” said Region 5 Administrator Mary A. Gade. “This is a serious violation of EPA’s system for protecting people and the environment from the potential harmful effects of pesticides. EPA will fully investigate this violation and take appropriate actions. We are committed to keeping the public informed about any health consequences and providing information to assure the safe recall of these products as soon as possible.”

Registered or not, Beyond Pesticides emphasizes the dangers of toxic lawn chemicals in fertilizers and herbicides. You can find out more, like the [health](#) and [environmental](#) effects of commonly used lawn chemicals or [tips on managing an organic lawn](#), on our Lawns and Landscapes [program page](#).

This entry was posted on Friday, April 25th, 2008 at 7:50 am and is filed under [Pesticide Regulation](#), [Announcements](#), [Scotts Miracle Gro](#), [Ohio](#). You can follow any responses to this entry through the [RSS 2.0](#) feed. You can skip to the end and leave a response. Pinging is currently not allowed.

5/8/2008 8:18:43 AM

Office of Pesticide Programs Note to EPA Regional Pesticide Programs and State Lead Agencies

Subject: Actions on Scotts Miracle-Gro Products

On April 23 and 25, 2008, EPA's Region 5 Office in Chicago issued Stop Sale, Use and Removal Orders for certain products of The Scotts Miracle-Gro Company. Two products were not registered with EPA and bear false registration numbers. Two additional products were sold and distributed before they were registered, which is a violation of Federal law, and were not properly labeled. Yesterday Scotts announced that it is beginning a voluntary recall of the four products from retailers and distributors and a recall of two of those products from consumers. EPA has commented on Scotts' recall plan and finds it acceptable, though EPA is not "approving" or endorsing that recall plan.

The Agency regards the sale of unregistered and mislabeled products as a serious matter. An EPA registration is granted on the basis of scientific data that enable EPA to determine that a product is effective as claimed and will not pose unreasonable risks to human health or the environment. Unregistered products have not been evaluated by EPA. Additionally, EPA reviews pesticide labels during the registration process. The pesticide labels are the primary tool for giving pesticide users needed information and precautions for the safe and effective use of the product. As this case shows, EPA Regional staff and our State partners in pesticide regulation have an important role in monitoring the marketplace to prevent the sale of products that are in violation of our regulatory system for protecting the public.

EPA is working with the Ohio Department of Agriculture to analyze the product ingredients. At this time the risks, if any, posed by these products are unknown. EPA expects to have those analytical results shortly. The entire matter remains the subject of an on-going enforcement investigation and additional details can not be provided at this time. Additional information will be provided when appropriate.

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Hotel Bedbugs Don't Warrant Punitive Damages, Judge Decides

Daniel Wise
03-31-2008

In a ruling of first impression, a Manhattan judge has scratched a request for punitive damages in a bedbug case.

But the judge, Acting Supreme Court Justice Judith J. Gische, let go forward the negligence claims of two Maryland tourists for bites they sustained during a two-night stay at the theater district's Milford Plaza.

The tourists, Debra Grogan and her adult daughter, Dana, are seeking \$2 million in compensatory damages and an unspecified amount of punitive damages.

In rejecting their request for punitive damages, Justice Gische referred to a New York City Department of Health pamphlet in ruling that the two women had failed "to raise a triable issue of fact whether bedbugs are anything more than a nuisance."

After spending the night of Jan. 17, 2003, at the Milford Plaza, Debra Grogan discovered red marks on her chest.

Her daughter, Dana, arrived at the hotel on Jan. 18. At about 4 a.m. the following morning, the two women testified in depositions, Dana was awakened after being bitten, and the two saw blood stains on her sheets and somewhere between 40 and 100 bedbugs. Mrs. Grogan noticed bugs crawling up the wall, and a live bug in her daughter's hand.

Mrs. Grogan described the bugs as being brown, flat and elongated with a little red dot in the middle.

In ruling out punitive damages, Gische distinguished the strongest precedent offered by the two tourists, the decision of the 7th U.S. Circuit Court of Appeals in *Mathias v. Accor Economy Lodging*, 347 F.3d 672 (2003).

The Circuit decision was factually distinguishable, Gische concluded in *Grogan v. Gamber Corp.*, 112008/03, because the hotel in the *Mathias* case was aware of the presence of bedbugs but decided not to lay out \$500 to fumigate the premises, and instead offered guests a refund if they complained of bedbug bites.

The Milford Plaza, in contrast, had under contract a pest control company, PAC Extermination Services, which was also

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sued in the case.

Evidence in the case showed that three weeks before the Grogans' stay, the hotel had asked PAC to exterminate bedbugs in two rooms near the room reserved by the Grogans. Work orders had been issued for rooms 1511 and 1512 on Dec. 22, 2002. The Grogans stayed in room 1540 from Jan. 17 to Jan. 19, 2003.

In support of their claims, the Grogans presented the affidavit of an expert in insects who teaches epidemiology and other courses at the University of Alabama School of Medicine.

The entomologist, Robert J. Novak, reported that bedbugs can "easily" migrate from one room to another and that "proper eradication techniques" require inspection of "adjacent or contiguous rooms, or even rooms on several floors above and below" the floor where the pests had been spotted.

With the defendants having offered no affidavit to counter Dr. Novak's assertions, Gische wrote, the Grogans had presented enough evidence that the hotel had "constructive notice" of the need to fumigate room 1540 to deny the defendants' motion for summary judgment.

The case must go to trial, Gische ruled, because Novak's affidavit "set forth genuine issues of fact about the life span of bedbugs, how they migrate and whether these factors should have been (or were) taken into consideration by the defendants in how rooms were treated following bedbug complaints by other guests."

PAC Extermination Services had argued that it should be released from the case because its obligations were limited to completing work in specific rooms the hotel had asked to be fumigated.

But Gische said a jury must decide whether the exterminator's duties were so "comprehensive and exclusive" that it had assumed a duty to keep rooms, other than those for which it received work orders, in "a reasonably safe condition."

Douglas Herbert of Press & Herbert, who represented PAC Extermination Services, said he anticipates that one of the two defendants will appeal the denial of summary judgment dismissing the case.

The Milford Plaza was represented by Andrew J. Funk of Smith Mazure.

The Grogans were represented by Hayley R. Greenberg of Greenberg & Merola.

[Beyond Pesticides Daily News Blog](#)

[GAO to Congress: Take the Reins at EPA to Stop Undermining of Science](#)

(*Beyond Pesticides*, May 1, 2008) In [testimony responsive to a request](#) last year by Senators Barbara Boxer (D-CA) and Hillary Clinton (D-NY), the Government Accountability Office (GAO) told the Senate Committee on Environment and Public Works on April 29 that EPA's risk review process is plagued by delays, a lack of transparency, and interference from the White House and other agencies. In short, GAO concluded that the agency's science is politicized, outdated, secret, and threatens the protection of people and the environment from harmful chemical exposures. In its testimony, GAO's director of Natural Resources and Environment, John Stephenson, urged Congress to suspend EPA plans for reform, which GAO believes would institutionalize bad science, and require the agency to adopt its recommendations.

The testimony comes on the heels of an April 10, 2008 EPA decision, effective immediately, to revise its Integrated Risk Information System (IRIS). The program was severely criticized by GAO in a March 2008 report, [Chemical Assessments: Low Productivity and New Interagency Review Process Limit the Usefulness and Credibility of EPA's Integrated Risk Information System](#) (GAO-08-440). While EPA said it would consider the report's recommendations, GAO said in its testimony this week, [Toxic Chemicals: EPA's New Assessment Process Will Increase Challenges EPA Faces in Evaluating and Regulating Chemicals](#) (GAO-08-743T), "EPA's new process is largely the same as the draft GAO evaluated, and some key changes also are likely to further exacerbate the productivity and credibility concerns GAO identified."

Key issues that were recommended by GAO and ignored include streamlining its lengthy assessment process and adopting transparency practices "that provide assurance that IRIS assessments are appropriately based on the best available science and that they are not inappropriately biased by policy considerations." The report cites the dioxin assessment as an "example of an IRIS assessment that has been, and will likely continue to be, a political as well as a scientific issue." In his testimony, Mr. Stephenson cites an example of clear Office of Management and Budget (OMB) interference in the IRIS process. "For example, without communicating its rationale for doing so, OMB directed EPA to terminate five IRIS assessments that for the first time addressed acute, rather than chronic exposure – even though EPA initiated this type of assessment to help it implement the Clean Air Act," he said.

In her [opening statement at the hearing](#), Chairwoman Boxer said,

"The GAO report I am releasing today criticizes the Bush Administration changes to the risk assessment process and makes clear the danger faced by the public when political interference and the influence of polluters affects EPA's ability to address the risks of toxic chemicals. Under EPA's new approach politics can be—and already has been—injected into multiple stages in the process.

Even worse, the new procedure effectively requires the White House the Department of Defense (DOD) - which contracts out much of its weapons programs — to agree with EPA on any risk assessment before it goes forward and is made public. The entire process of White House and interagency debate is kept secret, which GAO and EPA scientists say undermines the credibility of EPA's scientific assessments.

That is because EPA scientists are being pushed aside by White House operatives and polluters."

The result of the ongoing deterioration of the IRIS system is a database, according to GAO, that "is at serious risk of becoming obsolete because the agency has not been able to routinely complete timely, credible assessment or decrease a backlog of 70 ongoing assessments. IRIS was created in 1985 as a tool for agency consensus on the health effects of chronic exposure to chemicals. The current database contains assessment of more than 540 chemicals. The failure of IRIS characterizes the broader failure of the Toxic Substances Control Act (TSCA), which in 1976 authorized EPA to obtain information on chemicals and regulate those that cause an unreasonable risk to human health or the environment. According to GAO, EPA has used its authority to require testing for few of the over 60,000 chemicals that were in commerce when TSCA was enacted. GAO critiqued the program in two reports, one in 2005, [Chemical Regulation: Actions Are Needed to Improve the Effectiveness of EPA's Chemical Review Program](#) (GAO-06-1032T), and one in 2006, [Chemical Regulation: Options Exist to Improve EPA's Ability to Assess Health Risks and Manage Its Chemical Review Program](#) (GAO-05-458).

The GAO also compared TSCA and the European Union's new chemical control policy Registration, Evaluation and Authorization of Chemicals (REACH) in two reports, [Chemical Regulation: Comparison of U.S. and Recently Enacted European Union Approaches to Protect Against the Risks of Toxic Chemicals](#) (GAO-07-825) and [Chemical Regulation: Approaches in the United States, Canada, and the European Union](#) (GAO-06-217R). GAO concludes that REACH puts the burden squarely on the chemical industry to provide regulators with health and environmental effects information, while TSCA does not.



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New Iowa directory will help avoid pesticide drift damage

Wednesday, April 23, 2008, 3:02 PM

by Jerry Passer

Iowa secretary of Agriculture Bill Northey is encouraging Iowans with pesticide sensitive crops and apiaries to register their locations with the Department of Agriculture. A directory is being developed with the locations of crops that are most susceptible to damage from pesticide drift.

This new directory will be able to help both producers and pesticide applicators," Northey said. "By taking this extra step to help protect producers of pesticide sensitive crops and apiaries, we are trying to make sure Iowa communities continue to be a great place for all types of agriculture."

The intended crops for inclusion are vineyards, orchards, certified organic crops, and fruit and vegetable crops. The crops at each registered location must be intended for commercial use, be susceptible to pesticide drift damage and meet minimum acreage requirements.

To become a part of the sensitive crops directory, producers and beekeepers must complete the Producer Registration Form. The form can be found at <http://www.iowaagriculture.gov/>

Related Links:[Iowa secretary of Agriculture Bill Northey](#)*See other items about...*(choose a keyword...)

Iowa Department of Agriculture and Land Stewardship
Sensitive Crops Program
Producer Registration Form

Contact Information

Business Name: _____

First Name: _____ **Last Name:** _____

Street Address: _____

Mailing Address (if different): _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **Cell Phone:** _____

E-mail: _____ **County:** _____

(be sure to include your e-mail address; in the future, this will be the primary means of contact)

Note: Registration is based on location. If necessary, after filling out the Contact Information, please copy this form if more than three location registrations are needed.

Location of Sensitive Crops: The location of your site can be entered onto the registry by filling out the Township, Range, Section, and Quarter Section details **or** by providing the Latitude and Longitude. Fill out all or some of the Quarter Section details depending upon the size of the property. Please fill out two (or more) Sensitive Crops Location Information boxes if the property straddles two (or more) Sections.

Sensitive Crops Location Information

Township: _____ **Range:** _____

Section: _____ **160 Acre Quarter Section:** _____

40 Acre Quarter of the 160 Acre Quarter Section: _____

10 Acre Quarter of the 40 Acre Quarter Section: _____

2.5 Acre Quarter of the 10 Acre Quarter Section: _____

OR

Latitude: _____ **Longitude:** _____

Check all that apply:

Orchard Vineyard Fruit & Vegetable Apiary Organic

Total Number of Acres at this Location: _____

If Applicable, Name of Organic Certifier: _____

April 28, 2008

Less toxic pesticides will debut later this year

Don Curlee
Agriculture

Farmers and their friends who supply agricultural chemicals are always on the lookout for compounds that are safer and more effective. It looks like at least two new pesticides to fill the bill will be available this year.

While most agricultural chemicals result from tedious laboratory experiments, one of this year's award winners was discovered at the bottom of an abandoned rum still in the Caribbean. Why the guys in the white lab coats were poking around there is anybody's guess.

The discovery, which occurred in 1982, was the result of a joint venture between Dow Agro Sciences and Eli Lilly Company. Two and a half decades of screening and compliance with protocols of the Environmental Protection Agency have finally resulted in a marketable product.

Two years after the discovery, the first spinosyns (the natural active ingredient) were isolated in a process described as brewing, much as beer is brewed. Combination of two of the 20 known spinosyns has resulted in the new product's being offered by Dow.

A dry formulation is called Delegate, and a liquid formulation will be sold as Target. Both aim at some of the most persistent pests farmers deal with: codling moths, leafrollers, thrips and peach twig borers.

The compounds are hardly toxic to beneficial insects, and applying them requires no more than a hat, gloves, coveralls and shoes. Orchards can be entered within four hours after application, and the sprays can be applied as close as one day before harvest, if necessary.

Sharing the spotlight that is shining on new and safer pesticides for 2008 is a product by the duPont Crop Protection Division called Rynaxapyr. One of its features is the mode of action on the target Lepidopteran pests. When they encounter the compound, they stop feeding almost immediately. Life might continue for a day or two, but their destructive feeding on plant tissue ends.

The trade names for this synthetic compound are Coragen for vegetable crops and Altacor for permanent crops. It is the result of nine years of testing by the chemical company on 200 different sites in 15 states.

Because the target of the pesticide is the nerve-muscle joint of the destructive pests, it is not that toxic to beneficial insects or workers who apply it or work in the fields. In one of the trial applications in the Santa Maria area, the grower applied the material 3 inches beneath the soil surface at the time he planted celery.

He reported to *Western Grower and Shipper*, the monthly magazine of Western Growers, that the application continued to provide effective control longer than materials he has used in the past. Others used it in trials on spinach and butter and leaf lettuces.

Another grower said he was impressed by duPont's careful informational campaign as the product was developed. Some growers were flown by the company to its crop protection headquarters in Memphis to learn about the compound.

- Don Curlee is a freelance writer who specializes in agricultural issues. Write to him at Don Curlee-Public Relations, 457 Armstrong Ave., Clovis, CA 93612.

East Bay, RI

East Bay NewspapersWednesday, May 21,
2008

For lobsters' sake, towns ban spray



When female lobsters laden with eggs shed their shell before the juvenile lobsters hatch, lobsterman Patrick Heaney says that something unnatural is the cause.

"It's like they're aborting," said Mr. Heaney, a Newport inshore lobsterman for 16 years. "When you see that, you know there's something drastic happening. Nature doesn't do that."

Lobstermen blame an insecticide called methoprene which is applied inside catch basins to kill larval mosquitoes. They believe that chemical then washes out through storm drains into Narragansett Bay and other estuaries.

The R.I. Lobstermen's Association, which Mr. Heaney represents, and the Ocean State Fishermen's Association have banded together to get towns and cities throughout Rhode Island to stop applying methoprene as a precautionary measure.

So far, Little Compton, Newport, Jamestown and Narragansett have adopted resolutions to not use the insecticide. Bristol did the same but added a provision to revisit the issue in one year. State Rep. Raymond E. Gallison Jr. also submitted a bill to ban the use of methoprene, which he says has harmful effects on lobsters.

The R.I. Department of Environmental Management supplies methoprene (brand name Altosid) through a voluntary program. Methoprene, which looks like rabbit pellets, stops the growth of mosquitoes during the pupa stage so they do not emerge from the casing as an adult.

At around the time the state began using methoprene in 2000 to prevent the spread of West Nile Virus, Mr. Heaney said he observed a decrease in the health of lobsters, which in the 1990s he said had provided a very robust fishing industry. Despite a program that introduced more female lobsters to the bay, Mr. Heaney said there's been a "flatline" in the juvenile lobster population. He's seen many lobsters with a shell disease that he describes as a pitting or "shell rot." The lobsters he catches are often soft, indicating they have recently shed, which he said they will do to get rid of the shell rot.

"Even in the dead of winter, they are still soft," Mr. Heaney said. "This is environmental poisoning that's taking place and it's got to stop."

There are some similarities between insects and lobsters, Mr. Heaney said. In fact, some long-time lobstermen call lobsters "bugs."

Alternative proposed

The state supplies almost 2,000 pounds of methoprene each year to municipalities, according to Alan Gettman, who leads DEM's mosquito abatement program.

The department of public works applies one-quarter teaspoon, or about 24 pellets, of methoprene to each catch basin. Dr. Gettman said there are varying levels of participation across the state, but he figures that a large percentage of the state's catch basins are treated.

When the program began in the summer of 2000, the University of Rhode Island tested whether a rainstorm would flush out the methoprene pellets, which are supposed to sink to the bottom, not float, as well as the dilution rate of the insecticide.

Dr. Gettman said DEM concluded through these studies that any methoprene that made it into the bay would be diluted to harmless levels.

"We have always contended that there is a dilution factor of Narragansett Bay so that when the products get washed out to the bay in a rainstorm, the dilution is so great such that lobsters are extremely unlikely to get levels that are harmful to them," he said.

The Environmental Protection Agency says methoprene "show(s) some toxicity to certain fish and aquatic invertebrates in laboratory tests. However, none of the four active ingredients is expected to have harmful effects on wildlife, humans, or the environment when used as specified on the product labels."

Mr. Heaney suspects that methoprene's toxicity has built up in the bay over the years.

"They don't really know at what point this stuff remains in the water," Mr. Heaney said. "We're seeing cumulative effects — it's eight years into it."

Last month, Dr. Gettman said DEM began offering an alternative to methoprene: *Bacillus sphaericus*, a bacterium that acts as a larvicide. Dr. Gettman said this is a less reliable insecticide that flushes out of the basins when it rains.

Mr. Heaney said the R.I. Lobstermen's Association supports the *Bacillus sphaericus* insecticide.

"What we don't want to see is no treatment and then an outbreak (of West Nile)," Mr. Heaney said.

Mr. Heaney spoke to the Portsmouth Town Council a second time on Monday night, after councilors had had a chance to look into the issue.

"You occupy a very prominent position in the health of the bay," Mr. Heaney said to councilors, and threw his support behind using the bacterium insecticide.

Councilor William West said that with Newport's decision to stop using methoprene and an alternative presented by DEM, it was worth trying a different method. Middletown's opinion is pending another discussion.

"I think we have a chance to do something and see if it works," Mr. West said.

The Portsmouth council did not adopt the resolution to ban methoprene but approved the use of the bacterium insecticide. Councilors requested that Mr. Heaney return in a year to report on the health of lobsters.

By Jill Rodrigues

jrodrigues@eastbaynewspapers.com

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Are pesticides killing Rhode Island lobsters?

By Sam Bari



Rhode Island lobstermen believe lobster numbers are down in the Narragansett Bay because of runoff of a pesticide used to kill mosquito larvae in storm drains. Photo by Robb Roach

Rhode Island lobstermen are worried that a pesticide used to control the development of mosquito larvae is killing young lobsters in Narragansett Bay and Rhode Island Sound.

The product, sold under the trade name Altosid, is deposited in storm drains to control the mosquito population. Many of the storm drains in Rhode Island's seaside communities empty directly into the bay.

Altosid is made of methoprene, a larvicide, that when applied, reduces the number of adult mosquitoes and thus reduces human risk from mosquito borne diseases such as EEE and West Nile virus. Rhode Island lobstermen and many environmentalists oppose the use of methoprene because the chemical also kills lobster larvae.

The lobstermen argue that Maine is the only East Coast fishery where the lobster population is at acceptable, sustainable levels

because, unlike other East Coast fisheries, Maine bans the use of methoprene and larvicides in its waters. Maine is also the only fishery where the lobster population does not suffer from shell disease. In all the other fisheries, Rhode Island included, lobster birth rates are noticeably below normal.

Lanny Dellinger, president of the Rhode Island Lobstermen's Association, agrees that no conclusive scientific study is available that specifically names methoprene as the sole cause of decreasing lobster birth rates and/or shell disease in Rhode Island.

"That's the point," Dellinger said. "Nobody knows. Process of elimination tells us it certainly is possible that methoprene is the cause, but we don't have scientific proof either way. We don't know if the concentration of methoprene in the bay is harming the lobster reproductive process, and we don't know if it isn't. However, it stands to reason that nothing should be introduced to any fishery without knowing the consequences."

Patrick Heaney, a Rhode Island lobsterman who has been fishing out of Newport for more than 16 years, agrees with Dellinger. In a letter to the editor of a local publication, Heaney admonished the state's Department of Environmental Management in conjunction with cities and towns across the state for dumping large amounts of highly toxic poison into the catch drains and sewers that empty into the bay. His letter was signed by 14 other local fishermen and people concerned about the welfare of the industry

"The long-term risks of this practice are becoming apparent to those who work in the lobster fishery in the

state," Heaney said. "The ongoing incidence of shell disease and egg mortality, we believe, is a direct result of this environmentally questionable practice."

Rich Fuka, president of the Rhode Island Fishermen's Alliance, Chris Brown, president of Rhode Island Commercial Fishermen's Association, and Dennis Ingram, a board member of the Ocean State Fishermen's Association, all agree. Rhode Island fishermen want the state to stop using larvicide pellets in catch basins and storm drains that empty into Rhode Island waters until conclusive scientific data is available declaring the chemicals safe.

Newport City Council member Charles Y. Duncan recently sent a fax to the Newport mayor asking for a resolution to be put on the next city council meeting agenda that bans the use of any of the toxic poisons, such as methoprene, in the mosquito abatement program. He suggested that the city look to less invasive methods of mosquito control. The results of the council's decision were not available at press time.

DEM response

DEM Associate Director of Natural Resources Larry Mouradjian answered questions about the mosquito abatement program and the use of methoprene.

In an e-mail Mouradjian said that every summer DEM and the Department of Health administer a comprehensive program aimed at mosquito control. The program began in 1999. The program includes larvicide distribution to municipalities.

He also said, "Using mosquito larvicide reduces the possibility that mosquito adulticides would be needed. Mosquito adulticides do have environmental impacts as they can affect non-target organisms. Human health risks are also associated with the use of adulticides.

"Rhode Island DEM makes methoprene available to municipalities for mosquito control as well as BTI, a benign bacterium specific to killing mosquito larvae above ground.

"One half teaspoon of Methoprene pellets are distributed to most underground storm water catchment basins monthly for four months by community department of public works workers that we train," Mouradjian said.

He explained that two identical training sessions are held each spring for municipal employees. Most employees who make the applications attend a session every two years and learn about any new developments. "All municipalities in total have been trained," Mouradjian said.

He also outlined the training program. "The training entails several speakers speaking on the topics of: Pesticide usage and safe pesticide handling, mosquito larval habitats and diseases, pesticide toxicology and modes of action, and laws, licensing, and regulatory issues.

"Each community has a mosquito control contact person that is to document to DEM's mosquito abatement office the monthly applications that are made in their community. Although documentation received back by DEM is incomplete, each community receives only that amount proportional to the number of catch basins in their community."

Mouradjian explained that methoprene pellets sink, and are very unlikely to be flushed out of a basin, based on an experiment conducted by DEM in 2000. He said there was no evidence that methoprene affects lobsters in nature.

"Fish have a different structure and I know of no impacts on their developmental processes," he added.

Mouradjian stated, "Various research documents have raised questions on the potential offsite movement and impacts of methoprene and like products. Lab research has shown 'dosage' impacts on developing lobsters, which demonstrates if unnaturally high concentrations of methoprene were to occur in the presence of developing lobsters damage could be observed. Lab tests only have documented this as far as I know.

"DEM has on two separate occasions in years past consulted with URI and other scientific partners to review the scientific literature and the possibilities of damage outside the catch basins.

"Tests were done to measure the chemical concentrations seen outside the basins and all concluded with the results that no detection was determined beyond very short distances so the 'risk' was judged negligible to organisms beyond the mosquitoes in the catch basins. DEM provides very clear and definitive directions for use by the communities so that the impact work and the use are in alignment," Mouradjian stated.

When asked if the DEM is doing anything to assure that the health of the fishery is not at risk, he said "DEM will again be reviewing methoprene use to understand the alternatives products, advances in scientific data and cost/benefit to the program.

"We will provide improved directions, alternative products or other program enhancements as deemed best. Disease monitoring continues to document presence of EEE, West Nile and other critical pathogens as present in our communities and this too must be factored."

When asked about the chances of an EEE or West Nile Virus epidemic if the mosquito population isn't controlled, he said that EEE and WNV risks are higher with higher mosquito populations and added that the risk is difficult to quantify.

Jamestown has participated in the state program since its inception, but the town does not monitor specific results. "We rely on DEM," Public Works Director Steve Goslee said. "There was a public hearing before the program started when DEM came to the Town Council."

See next week's Press for the results of a University of Rhode Island study on the use of the larvacide.

Public release date: 6-May-2008

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Common herbicide disrupts human hormone activity in cell studies

A common weedkiller in the U.S., already suspected of causing sexual abnormalities in frogs and fish, has now been found to alter hormonal signaling in human cells, scientists from the University of California San Francisco (UCSF) report.

The herbicide atrazine is the second most widely used weedkiller in the U.S., applied to corn and sorghum fields throughout the Midwest and also spread on suburban lawns and gardens. It was banned in Europe after studies linked the chemical to endocrine disruptions in fish and amphibians.

The UCSF study is the first to identify its full effect on human cells. It is being reported in the May 7 issue of the journal "PLoS ONE."

In studies with human placental cells in culture, the UCSF scientists found that atrazine increased the activity of a gene associated with abnormal human birth weight when over-expressed in the placenta. Atrazine also targeted a second gene that has been found to be amplified in the uterus of women with unexplained infertility.

In parallel studies of zebrafish, a widely used animal in development studies, the research team showed that atrazine "feminized" the fish population – increasing the proportion of fish that developed into females. In water with atrazine concentrations comparable to those found in runoff from agricultural fields, the proportion of female fish increased two-fold. Environmental factors are known to influence the sex of zebrafish and many other fish and amphibians as they develop.

"These fish are very sensitive to endocrine disrupting chemicals, so one might think of them as 'sentinels' to potential developmental dangers in humans," said Holly Ingraham, PhD, senior author on the study and a UCSF Professor of Cellular and Molecular Pharmacology. "These atrazine-sensitive genes are central to normal reproduction and are found in steroid producing tissues. You have to wonder about the long-term effects of exposing the rapidly developing fetus to atrazine or other endocrine disruptors."

Ingraham intends to determine precisely how atrazine affects human and other mammalian endocrine cells and why these cells are particularly sensitive to it. She notes that bisphenol A, a compound in many hard plastic consumer products, is also an endocrine disrupter and is now under increased study for its safety. In April, Canada announced a decision to ban sale of consumer products with bisphenol A.

The lead author of the study is Miyuki Suzawa, a postdoctoral fellow in Ingraham's lab.

UCSF researchers exposed sexually immature zebrafish to atrazine and other chemicals for different periods of time. They found that exposure to atrazine for 48 hours at concentrations that might be found in water containing agricultural runoff, produced twice as many female fish.

Through genetic analysis, they found that atrazine preferentially activates a class of receptors in the cell nucleus, including two known as SF-1 and LRH-1. SF-1 regulates production of enzymes involved in the synthesis of steroids in the body and development of many endocrine tissues. One of these enzymes, known as Aromatase, plays a role in determining whether lower vertebrates, such as fish will become male or female. Aromatase is known as a feminizing enzyme.

In the human placental cell culture studies, the scientists found that a 24-hour exposure to atrazine activates a cluster of genes involved in hormone signaling and steroid synthesis.

They report, "Endocrine-related cell types with a capacity for steroid generation appear to be especially sensitive (to Atrazine), as demonstrated by the "exquisite" cellular specificity of the atrazine response."

The finding that a pervasive and persistent environmental chemical appears to significantly change hormone

networks means that scientists must take a broader look at this herbicide's potential effect on human health, Ingraham said. Up to now, much of the focus has been on breast cancer, but since proper development of the endocrine system is important for normal reproduction, stress responses and metabolism, early exposure to this chemical in a fetus or infant might alter normal physiology later in life, she said.

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The research was funded by the National Institutes of Health.

UCSF is a leading university dedicated to promoting health worldwide through advanced biomedical research, graduate-level education in the life sciences and health professions, and excellence in patient care.

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CHINA VIEW

www.chinaview.cn

Studies: insecticides in pet shampoo may trigger autism

LONDON, May 15 (Xinhua) -- Insecticides in pet shampoos trigger autism spectrum disorder (ASD), according to survey results presented Thursday at the International Meeting for Autism Research in London.

According to one of the first large-scale population-based studies to look how environmental factors and their interactions with genes contribute to the condition, mothers of children with an ASD were twice as likely to have reported using pet shampoos containing a class of insecticide called pyrethrins as those of healthy children.

The risk was greatest if the shampoo was used during the second trimester of pregnancy, the study showed.

Previous studies in insects and rodents have suggested that pyrethrins could damage the blood-brain barrier during early life, and cause neuronal damage. They may also interfere with the transmission of signals along nerve fibres.

Autism is associated with an imbalance between excitatory and inhibitory neurotransmitters within the brain.

While many chemicals have previously been blamed for triggering autism, there have been very few rigorous studies designed to investigate the link.

To remedy this, researchers led by Irva Hertz-Picciotto at the University of California in Davis, United States, studied 333 children with ASD and 198 healthy children, and their families.

The researchers made the findings after collecting blood and urine samples, conducting in-depth questionnaires on medical history and any possible exposure to medications, household products or metals that could have occurred around the time of conception, during pregnancy, or after birth, as well as collecting information on lifestyle.

However, lead researcher Irva Hertz-Picciotto and other experts caution that pyrethrins were unlikely to be the only cause of autism, which is increasingly recognized as being caused by a complex interplay of both genetic and environmental factors.

Another study suggested that exposure to organophosphate insecticides double the risk of developmental disorders, including autism.

ONTARIO'S NEW BAN

Potato fields, pesticides and Parkinson's

Carleton researcher trying to establish links between weed and bug killers and neurodegenerative disorders

ANNE MCILROY

SCIENCE REPORTER

April 25, 2008

Steve Morris didn't notice his left arm had stopped swinging when he walked; a buddy pointed it out. But his symptoms, including a tremor in his left hand, soon worsened, and by the time the community college teacher went to see a doctor two years ago, he was pretty sure the diagnosis would be Parkinson's disease.

He was surprised, though, by the questions the neurologist asked after delivering the bad news. Had Mr. Morris grown up around farms? Had he ever worked on a farm? Did he ever drink from a well?

The answer to all three was an emphatic yes. Mr. Morris had spent his childhood in Florenceville, the heart of New Brunswick's potato country, and now lives in Woodstock, N.B., across the street from a potato farm. As a kid, he used to run outside to watch the spray planes and he remembers his father having to turn on the wipers to clear the pesticide residue off the windshield. His doctor thought there could be a connection.

"I'm not a neurosurgeon, so I can't find cause and effect. But I grew up surrounded by pesticides," the 52-year-old says.

Mr. Morris was encouraged this week when Ontario Premier Dalton McGuinty announced a ban on the sale and use of domestic pesticides and says it's a sign governments are starting to recognize the risk of using these kinds of chemicals.

While a lot of research on pesticides and disease has focused on cancer, including childhood cancers, there is growing evidence that exposure to weed and bug killers is linked to Parkinson's disease, a neurodegenerative disorder with a wide array of symptoms including tremors, stiffness, poor balance, loss of speech and diminished muscle control.

So far, most of that evidence is epidemiological; studies show that workers exposed to regular low doses of pesticides on the job, such as farmers, suffer from sharply higher rates of the disease.

In his lab at Carleton University, Shawn Hayley is trying to establish how pesticides cause the kind of brain damage seen in people with Parkinson's.

The disease occurs when most of the cells in a part of the brain called the substantia nigra die. Normally these cells produce the chemical dopamine, which allows the smooth, co-ordinated function of the body's muscles.

Obviously, not everyone who is regularly exposed to pesticides gets the disease. Genetics are probably a factor; a number of studies have suggested people with particular versions of a gene involved in dopamine transport may be more vulnerable. Other toxins may also play a role.

When doctors perform a postmortem on patients with Parkinson's, they can find the same kind of damage in almost every patient. The substantia nigra, located in the midbrain, is normally black. In people with Parkinson's, it is white, a sign that dopamine-producing cells have died.

If you give mice multiple injections of paraquat, a commonly used commercial herbicide, they develop a shuffling gait and move around less. When scientists look at their brains, they see the same whitening.

The pesticide activates immune cells in the brain known as microglial cells, Dr. Hayley says. They produce nasty chemical agents that cause inflammation and damage healthy cells.

Once the microglial cells have been activated, he says, they are more sensitive to subsequent exposures to pesticides.

But how does paraquat activate the microglial cells? Dr. Hayley had identified two messenger proteins that are involved. Both are cytokines, which are like orchestra conductors, bringing cells together and telling them how to perform. He also found preliminary evidence that blocking production of these two cytokines limits the damage. His findings could one day lead to drugs - possibly anti-inflammatories - that could protect people at a high risk of getting the disease.

Dr. Hayley gets about 15 per cent of his funding from Parkinson Society Canada and most of the rest from government granting agencies.

His theory is that multiple exposures to pesticides trigger the disease in people who are genetically predisposed to get it.

They are probably most vulnerable early in life, during developmentally sensitive times, he says, or late in life when the body's detoxification systems no longer work that well.

He, too, welcomed Ontario's new ban. It is a good idea to reduce our exposure to pesticides, he says, even if most gardeners use only low levels of herbicides and insecticides.

It makes sense to Mr. Morris, who hopes scientists like Dr. Hayley can figure out what role pesticides play in Parkinson's disease.

"I'm not angry, and I'm not looking to blame anyone. But in my mind, there is a connection."

Parkinson's 101

An estimated 100,000 Canadians are living with Parkinson's disease, according to the Parkinson Society Canada. Here are a few facts about the progressive neurological disorder:

AGE RISK

The average age of onset is 60, but it can occur in younger people.

SYMPTOMS

It affects patients in different ways, but symptoms can include tremors, stiffness and difficulty with balance.

In some cases, the progression is slow, and takes 20 years or more.

Thirty to 40 per cent of patients develop dementia.

TREATMENT

There is no cure, but a number of medications are available that can keep some of the symptoms, such as tremors, under control.

Anne McIlroy

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Scientists warn against reduction in EU pesticides

Wed Apr 23, 2008 8:42pm BST

LJUBLJANA (Reuters) - A group of European Union scientists has warned against a planned reduction in the number of pesticides allowed in the EU, claiming this could increase resistance of pests and make crop cultivation uncompetitive.

"The scientists from seven countries fear that reducing the available range of pesticides could lower their efficiency as it is likely that it will increase resistance," they said in a statement received by Reuters late on Tuesday.

They said the increased risk of developing resistance to the few remaining substances could make cultivation of many crops, including grapes, wheat, barley, cotton, fruit, potatoes and vegetables in Europe, uncompetitive.

"In order to safeguard the production of food at affordable prices, it is essential to provide farmers with access to sufficient diversity of crop protection solutions," the scientists' spokesman Ian Denholm from the UK's Rothamsted Research institute, said in the statement.

"This is essential to prevent or delay the development of resistant pests, and to maintain the efficacy of remaining crop protection products," he added.

The scientists presented their appeal to Slovenia's Agriculture Minister Iztok Jarc as Slovenia holds the rotating six-month presidency of the EU.

The European Commission started a pesticide revision process in 2006 while the European parliament in October 2007 pushed for further restrictions which could lead to a loss of between 70 to 85 percent of the remaining substances.

The EU's Council of Ministers aim to reach a political agreement on the matter in May.

At present around 250 pesticides are allowed in the EU, Andrej Simoncic, director of the Agricultural Institute of Slovenia, told Reuters.

Scientists claim the reduction of pesticides could lead to lower crop yields and higher food prices which have already contributed to a hike in inflation in the EU over the past year.

In March, inflation in the EU rose to 3.8 percent from 2.3 percent a year ago.

(Reporting by Marja Novak; editing by Chris Johnson.)

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The Press and Journal

Warning on devastating impact of European plan for pesticides

Extreme crop protection proposals prompt fears

By Joe Watson

Published: 16/05/2008

EUROPEAN agriculture might cease to exist if controversial proposals are agreed next week, a UK Government organisation has warned.

The Pesticides Safety Directorate unusually sides with industry on the devastating impact that plans to change the approvals process for a range of crop protection products could have.

It warns that if the most extreme proposals are accepted then “conventional commercial agriculture in the UK – and much of the EC – as it is currently practised would not be achievable, with major impacts on crop yield and food quality”. Weed control may also become difficult.

European farm ministers at their meeting in Brussels on Monday will discuss the European Commission’s original plan and a series of amendments that have been made to it by the European Parliament.

Their job will be to reach a compromise that is acceptable to both the commission and the parliament, where the debate and demands have been driven by green politicians.

It is the suggested changes from the parliament that could potentially cause the biggest problems as, according to the PSD, they could result in 85% of the conventional chemical substances currently used being withdrawn within five years.

The PSD has assessed the 300 substances that are in regular use in pesticides, fungicides, herbicides and insecticides and the impact the proposals from the EC and the parliament will have on them.

Losses

It added: “The commission proposals could remove up to 15% of the substances assessed, some of which are particularly important in the UK for the protection of minor crops such as carrots and parsnips.”

There is a warning the commission’s suggested new criteria for fungicides could lead to 20-30% yield losses in cereals as it would remove the foundation products such as those used for tackling septoria in wheat. Onions, carrot and parsnip production would also be hit as most of the existing herbicides would be banned.

Blackgrass control in cereals could be compromised and the armoury of weapons used to protect oilseed rape much depleted. Increased tree deaths are also likely if warfarin is lost as expected.

The parliament’s proposals are deeply criticised. The report said: “The scale and magnitude of the potential losses would undermine both resistance management and integrated pest management.”

The European Crop Protection Association, European Seed Association and farmer and co-operative groups Copa-Cogeca have already called for commonsense to be injected into the debate and for ministers to reach sensible decisions.

April 21, 2008

In Lean Times, Biotech Grains Are Less Taboo

By [ANDREW POLLACK](#)

Soaring [food prices](#) and global grain shortages are bringing new pressures on governments, food companies and consumers to relax their longstanding resistance to genetically engineered crops.

In Japan and South Korea, some manufacturers for the first time have begun buying genetically engineered corn for use in soft drinks, snacks and other foods. Until now, to avoid consumer backlash, the companies have paid extra to buy conventionally grown corn. But with prices having tripled in two years, it has become too expensive to be so finicky.

“We cannot afford it,” said a corn buyer at Kato Kagaku, a Japanese maker of corn starch and corn syrup.

In the United States, wheat growers and marketers, once hesitant about adopting biotechnology because they feared losing export sales, are now warming to it as a way to bolster supplies. Genetically modified crops contain genes from other organisms to make the plants resistance to insects, herbicides or disease. Opponents continue to worry that such crops have not been studied enough and that they might pose risks to health and the environment.

“I think it’s pretty clear that price and supply concerns have people thinking a little bit differently today,” said Steve Mercer, a spokesman for U.S. Wheat Associates, a federally supported cooperative that promotes American wheat abroad.

The group, which once cautioned farmers about growing biotech wheat, is working to get seed companies to restart development of genetically modified wheat and to get foreign buyers to accept it.

Even in Europe, where opposition to what the Europeans call Frankenfoods has been fiercest, some prominent government officials and business executives are calling for faster approvals of imports of genetically modified crops. They are responding in part to complaints from livestock producers, who say they might suffer a critical shortage of feed if imports are not accelerated.

In Britain, the National Beef Association, which represents cattle farmers, issued a statement this month demanding that “all resistance” to such crops “be abandoned immediately in response to shifts in world demand for food, the growing danger of global food shortages and the prospect of declining domestic animal production.”

The chairman of the [European Parliament](#)’s agriculture committee, Neil Parish, said that as prices rise, Europeans “may be more realistic” about genetically modified crops: “Their hearts may be on the left, but

their pockets are on the right.”

With food riots in some countries focusing attention on how the world will feed itself, biotechnology proponents see their chance. They argue that while genetic engineering might have been deemed unnecessary when food was abundant, it will be essential for helping the world cope with the demand for food and biofuels in the decades ahead.

Through gene splicing, the modified crops now grown — mainly canola, corn, cotton and soybeans — typically contain bacterial genes that help the plants resist insects or tolerate a herbicide that can be sprayed to kill weeds while leaving the crop unscathed. Biotechnology companies are also working on crops that might need less water or fertilizer, which could have a bigger impact on improving yield.

Certainly any new receptivity to genetically modified crops would be a boon to American exporters. The United States accounted for half the world’s acreage of biotech crops last year.

But substantial amounts of corn, soy or canola are grown in Argentina, Brazil and Canada. China has developed insect-resistant rice that is awaiting regulatory approval in that country.

The pressure to re-evaluate biotech comes as prices of some staples like rice and wheat have doubled in the last few months, provoking violent protests in several countries including Cameroon, Egypt, Haiti and Thailand. Factors behind the price spikes include the diversion of crops to make biofuel, rising energy prices, growing prosperity in India and China, and droughts in some regions — including Australia, a major grain producer.

Biotechnology still certainly faces obstacles. Polls in Europe do not yet show a decisive shift in consumer sentiment, and the industry has had some recent setbacks. Since the beginning of the year France has banned the planting of genetically modified corn while Germany has enacted a law allowing for foods to be labeled as “G.M. free.”

And a new international assessment of the future of agriculture, released last Tuesday, gave such tepid support to the role genetic engineering could play in easing hunger that biotechnology industry representatives withdrew from the project in protest. The report was a collaboration of more than 60 governments, with participation from companies and nonprofit groups, under the auspices of the [World Bank](#) and the [United Nations](#).

Hans R. Herren, co-chairman of the project, said providing more fertilizer to Africa would improve output much more than genetic engineering could. “What farmers really are struggling with are water issues, soil fertility issues and market access for their products,” he said.

Opponents of biotechnology say they see not so much an opportunity as opportunism by its proponents to exploit the food crisis. “Where politicians and technocrats have always wanted to push G.M.O.’s, they are jumping on this bandwagon and using this as an excuse,” said Helen Holder, who coordinates the campaign against biotech foods for Friends of the Earth Europe. G.M.O. refers to genetically modified

organism.

Even Michael Mack, the chief executive of the Swiss company [Syngenta](#), an agricultural chemical and biotechnology giant, cautioned that the industry should not use the current crisis to push its agenda.

Whatever importance biotechnology can play in the long run, food shortages are making it harder for some buyers to avoid engineered crops.

The main reason some Japanese and South Korean makers of corn starch and corn sweeteners are buying biotech corn is that they have dwindling alternatives. Their main supplier is the United States, where 75 percent of corn grown last year was genetically modified, up from 40 percent in 2003.

“We cannot get hold of non-G.M. corn nowadays,” said Yoon Chang-gyu, director of the Korean Corn Processing Industry Association.

But the tightening global supply has made it harder to get nonengineered corn from elsewhere. And as corn prices soar, millers and food companies are less able to pay the surcharge to keep nonengineered corn separate from biotech varieties. The surcharge itself has been rising.

Mr. Yoon said non-engineered corn cost Korean millers about \$450 a metric ton, up from \$143 in 2006. Genetically engineered corn costs about \$350 a ton.

In Europe, livestock producers say that regulations on genetically modified crops could choke feed supplies at a time when they are already reeling from higher prices. Even after a new genetically engineered variety is approved for growing in the United States, it might take several years for Europe to approve it for import.

Moreover, European rules require an entire shipment of grain to be turned back if it contains even a trace of an unapproved variety. Such a problem last year disrupted exports of corn gluten, a feed product, from the United States to Europe.

Feed makers and livestock producers want faster approvals and a relaxation of the rules to allow for trace amounts of unapproved varieties in shipments.

Even in the United States, where genetically engineered food has been generally accepted, the wheat industry has had to rethink its reluctance to accept biotech varieties.

Because about half of America’s wheat crop is exported, farmers and processors feared foreign buyers would reject their products. Facing resistance from American farmers, [Monsanto](#) in 2004 suspended development of what would have been the first genetically modified wheat.

But some farmers and millers now say that the lack of genetically engineered wheat has made growing the grain less attractive than growing corn or soybeans. That has, in turn, contributed to shrinking supplies and rising prices for wheat.

Milling & Baking News, an influential trade newspaper in Kansas City, Mo., said in an editorial that companies that used wheat were now paying the price for their own “hesitancy, if not outright opposition” to biotechnology.

Su-hyun Lee in Seoul, South Korea, and Yasuko Kamiizumi in Tokyo contributed reporting.

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May 1, 2008

IN THE GARDEN

Moss Makes a Lush, No-Care Lawn

By JANCEE DUNN

Solebury, Pa.

DAVID BENNER hasn't watered his lawn since the Kennedy administration. He hasn't mowed it, either. And it's doing just fine. On a late-April afternoon, the two-acre property surrounding his ranch house in Bucks County was a carpet of green, uniformly lush and velvety under a canopy of shade trees.

Mr. Benner, 78, a retired professor of ornamental horticulture, is also a longtime practitioner and advocate of what he calls "the moss approach" to lawn maintenance. "Every time I give a lecture, I go into this spiel: get rid of your grass, and grow moss," he said. "And now it's finally gaining momentum."

For more than a century, moss has been anathema to homeowners and gardeners. Type "moss" and "lawn" on an Internet search engine and you'll find more ways to kill it than create it.

But in recent years, this humble, hardy plant, which has been around for at least 450 million years, has been growing in popularity as an alternative to the traditional lawn. Tim Currier, the owner of Sticks and Stones Farm in Newtown, Conn., which has specialized in selling moss for 10 years, estimated that his sales are up 30 percent just in the last year. And Celeste Kennedy, who owns Rolling Hill Farm in Green Bay, Va., reported a 40 percent sales increase, with growing interest in moss from both homeowners and businesses.

It's not hard to see why. Moss, which grows fast and hugs the ground, prevents soil erosion. Its density repels weeds. Deer do not snack on it. It can be walked on. Even when it looks dead, a splash of water can restore it to emerald health within minutes. It doesn't need fertilizer (lacking a root system, it takes nutrients from water and air). All it needs, in fact, are shade, moisture — though not large amounts of water — and what most gardeners would regard as poor-quality soil.

According to an informal survey by the American Society of Landscape Architects, many of its most prominent members predict that the use of native and drought-resistant plants like moss as a sustainable substitute for grass will be a major design trend of 2008. "We're definitely seeing more creative plantings, and moss is a great one," said Nancy C. Somerville, the organization's executive vice president, who attributes the trend in part to environmentalism, and in particular to growing concerns about water in much of the country.

The [Environmental Protection Agency](#) estimates that nearly a third of all residential water is used for landscaping. "Here on the East Coast we had drought conditions for a large part of last summer," Ms.

Somerville said, “and it sounds like we’re going to get more of that with [global warming](#).”

Although moss requires moisture, said Christine Cook, who owns Mossaics, a moss gardening business in Easton, Conn., and who lectures at the [New York Botanical Garden](#), a moss lawn needs “a fraction, one percent or less” of the 10,000 gallons (beyond rainwater) that the E.P.A. estimates a suburban grass lawn drinks annually.

For 34 years, Mr. Benner has been giving tours of his property during the first two weeks of May, and it has become something of a mecca for those interested in moss gardening. Thousands of visitors have trod across his mossy paths, leaving barely a trace. (He can be reached at bigdaveandbigdave@aol.com; don’t wear high heels, he warned, or “you’ll sit in the car.”)

Moss gardens generally require very little care, but Mr. Benner’s is an extreme example. “I really don’t water,” he said, taking a seat at a picnic table in the shade of a beech tree. “I work with nature, and my philosophy is that things have to tough it out.”

It seems to be working. His yard is an oasis of flowering trees, native wildflowers and cool, rich moss, dotted with twinkling bluets. As he spoke, two fat frogs sat placidly nearby on moss-covered rocks next to a small fountain. “You’re looking at a garden here that’s practically no maintenance,” he said.

(He even manages to avoid raking leaves in autumn, by covering the moss with netting that collects the leaves. He then spends two weekends dumping the contents onto his compost pile.)

Mr. Benner first conceived of his moss lawn in the spring of 1962, when he bought the house with his wife, Sue, while working as a young botanist at Bowman’s Hill Wildflower Preserve in New Hope, Pa. (He later taught for two decades at Delaware Valley College in Doylestown, Pa.) Mr. Benner knew he didn’t want a grass lawn, having spent his youth in Ardmore, Pa., glumly mowing huge swaths of grass for his father.

But there was scant advice available on cultivating moss. The only book on moss his university library could track down was in Japanese.

He did know that moss, unlike grass, thrives in acidic soil. So he covered his lawn in an acidic combination of sulfur powder and aluminum sulfate. Three months later, he raked up the dead grass, leaving a vast expanse of exposed soil. Then he waited through the winter, hovering over his grand experiment. The following spring, moss began sprouting all over the property. “It was like magic,” he said. “I can still hardly believe it. Moss produces spores, and they just blew in from the air. Now I have 25 kinds, none of which I planted.”

This year, for the first time, Mr. Benner will be selling moss starter kits, containing four of the easiest-to-grow moss plants — fern, hair cap, rock cap and cushion — through Moss Acres, a 54-acre moss nursery in the Poconos, started by his son, Al Benner, in 2002.

Moss Acres, one of the country’s few specialty moss purveyors and, according to Al Benner, the largest (it

was a source of moss for the atrium garden of The New York Times's headquarters), is itself a sign of the intensifying interest in moss. The younger Mr. Benner said that in the company's six years of business, sales have increased by about 30 percent annually. The company's Web site, www.mossacres.com, draws a thousand visitors a day, he said, adding, "moss is starting to get its day in the shade, I guess you could say."

There are approximately 12,000 varieties of moss in North America, and most of them require just shade, acidic soil and adequate moisture. Also, the moss bed must be kept free of leaves and debris (although a brief accumulation, like the one that Mr. Brenner gathers in his nets every fall, is all right). Other than that, Al Benner said, "the crummier the soil, the better it is for moss."

Aside from its durability and environmental benefits, he attributes its popularity to nostalgia. "Everyone always says, 'Oh, I remember when I was a kid, walking through the woods and seeing moss.' It was probably wherever they grew up, because moss is everywhere. Moss takes people back to being a kid again."

The elder Mr. Benner sometimes walks barefoot on it after a rain — "some sort of magical invigorating energy goes through you when you stand on a thick patch of wet moss," he said — and both he and his wife say they enjoy lying down in a particularly inviting stretch of (dry) moss.

Moss enthusiasts are a small but passionate bunch. "I've had grown men confess to me that they used to play with their G.I. Joes in the moss," Ms. Cook said. "You have no idea how many moss lovers are out there."

T. J. Turgeon, an executive vice president of Modern Bank, a private bank in Manhattan for wealthy people, is one of them. He began growing moss four years ago, after walking in the woods around his vacation home in Shandaken, N.Y., and picking up little pieces to take back to his yard for a garden. Soon he was filling trash bags with the stuff.

"I'm having an absolute blast with it," Mr. Turgeon said. "I'm great at a dinner party, because I can talk about moss and no one's ever heard it before. People at work think I'm out of my mind." He lowered his voice. "I don't know if other people do this, but wherever I go, I take moss." His garden is a patchwork quilt of mosses in different shades of green, from North Carolina, Canada, Denver, San Francisco and Connecticut.

Sallie Baldwin, a graphic designer who lives in Greenwich, Conn., has been a moss lover for 18 years, during which she and her husband, Foster Bam, have gradually turned their front yard into a moss lawn. "We have a lot of shade, because Greenwich is full of trees," said Ms. Baldwin, who has swapped her own grass for patches of moss growing in the yards of several bemused neighbors.

There is one slight hitch. "You have to go out and pull the grass. When my neighbors walk by and I'm there pulling out the grass so the moss will grow, they think I'm a little crazy."

[washingtonpost.com](http://www.washingtonpost.com)

Air Pollution Impedes Bees' Ability to Find Flowers

By Juliet Eilperin
Washington Post Staff Writer
Monday, May 5, 2008; A03

Air pollution interferes with the ability of bees and other insects to follow the scent of flowers to their source, undermining the essential process of pollination, a study by three [University of Virginia](#) researchers suggests.

Their findings may help unlock part of the mystery surrounding the current pollination crisis that is affecting a wide variety of crops. Scientists are seeking to determine why honeybees and bumblebees are dying off in the United States and in other countries, and the new study indicates that emissions from power plants and automobiles may play a part in the insects' demise.

Scientists already knew that scent-bearing hydrocarbon molecules released by flowers can be destroyed when they come into contact with ozone and other pollutants. Environmental sciences professor Jose D. Fuentes at the University of Virginia -- working with graduate students Quinn S. McFrederick and James C. Kathilankal -- used a mathematical model to determine how flowers' scents travel with the wind and how quickly they come into contact with pollutants that can destroy them. They described their results in the March issue of the journal *Atmospheric Environment*.

In the prevailing conditions before the 1800s, the researchers calculated that a flower's scent could travel between 3,280 feet and 4,000 feet, Fuentes said in an interview, but today, that scent might travel 650 feet to 1,000 feet in highly polluted areas such as the District of Columbia, Los Angeles or Houston.

"That's where we basically have all the problems," Fuentes said, adding that ozone levels are particularly high during summer. "The impacts of pollution on pollinator activity are pronounced during the summer months."

This phenomenon triggers a cycle, the authors noted, in which the pollinators have trouble finding sufficient food, and as a result their populations decline. That, in turn, translates into decreased pollination and keeps flowering plants, including many fruits and vegetables, from proliferating.

Fuentes said scientists now have a more sophisticated understanding of the signals for which insects are searching, and that air pollution rapidly eliminates as much as 90 percent of flowers' aroma.

"We now know what the pollinators are looking for when they're actually looking for the flowers," he said.

Most bees have poor eyesight, which makes scent particularly important, the researchers wrote.

Since 2006, honeybee colonies in the United States have been suffering from a widespread phenomenon known as colony collapse disorder (CCD), in which adult worker bees abandon an otherwise-healthy hive.

John P. Burand, an associate professor at the [University of Massachusetts at Amherst](#) who is studying bee colony collapses, said the effects of air pollution described in the new study are probably not directly related to that phenomenon. But, he added in an e-mail: "There is no doubt that air pollution and air quality is having an effect on bees and other pollinators. It appears there is more than one factor that is contributing to the CCD phenomenon we are seeing with bees, and certainly air pollution in some fashion may be playing a role."

Burand, working with two other University of Massachusetts researchers and an insect ecologist at the [University of Maine](#) at Orono, just received a \$150,000, three-year grant from the [Agriculture Department](#) to analyze microbes carried by bees that pollinate apples, squash and pumpkins. They are working with colleagues to compare the bacteria, viruses and fungi in healthy bee colonies with those in dysfunctional hives.

Richard Poirot, an air-quality planner at Vermont's Department of Environmental Conservation who helps advise the federal government on its national ozone standards, said it makes sense that the chemical reaction of floral hydrocarbons and pollutants such as ozone would reduce the power of a flower's scent and affect the insects that depend on those aromas.

"It does make sense that it certainly would be another stress factor" on pollinators, Poirot said, though he added that pollinators are declining for an array of reasons not related to pollution. "The question is, how significant is it?"

Timothy H. Tear, a senior scientist at the advocacy group the [Nature Conservancy](#) who studies the impact of air pollution on ecosystems, said the recent study confirms the extent of ozone's effects on habitats up and down the East Coast.

"We know that ozone levels continue to be high and go well beyond [EPA](#) standards for public health," Tear said. "What's been pretty consistent is the more we look at air pollution's impacts on natural resources, the more we find those impacts to be."

Tear and his colleagues have recently completed a survey of how atmospheric pollution is affecting biodiversity in the Eastern United States and concluded that high levels of ozone can decrease forest growth by as much as 30 percent.

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Golf & the Environment

The Activist: Jay Feldman

How Green Is Golf?



Interviewed By John Barton
Portraits By Kagan McLeod May 2008

Jay Feldman, 54, is a co-founder and the director of Beyond Pesticides (beyondpesticides.org), a nonprofit membership organization started in 1981 that "works with allies in protecting public health and the environment to lead the transition to a world free of toxic pesticides." Feldman has been involved in the Golf & the Environment Initiative from the beginning, attending that first meeting at Pebble Beach and every summit since then. I interviewed him in his office in Washington, D.C., a few blocks southeast of the U.S. Capitol. We drank bottled water. Feldman never drinks water from the tap.

Golf Digest: Would you say that golf-course pesticide use in the United States today is not safe?

Jay Feldman:

I would say that, yes.

What in simple terms are the dangers?

Pesticides pose health risks, both acute and chronic, from common coldlike symptoms, nausea, dizziness, headaches, rashes, to birth defects, learning disabilities, infertility, leukemia, various cancers including brain cancer, breast cancer, non-Hodgkin's lymphoma. Asthma rates in the U.S. have skyrocketed, and there are studies linking asthma to pesticides that are widely used on golf courses. In all cases there are studies that link pesticides to these effects.

And these things can happen to golfers who are exposed directly and to people who live near golf courses?

Right. Through runoff and airborne drift. The problem is, when you spray pesticides, they tend to move off the target site. The U.S. Geological Survey put out a report in 2006 that looked at waters and streams and lakes in the U.S. and found pesticides everywhere they looked. The typical response you get from superintendents is that they're using registered pesticide products, they're using them in compliance with the label, their pesticide applicators are trained and certified, so what's the problem? But there are clear deficiencies in the regulatory process in evaluating the full body of health outcomes that we're concerned about. Endocrine disruption, for instance. We ought to have information on the impact of pesticides on the endocrine system, and yet

we don't in the U.S.

What are the consequences of endocrine disruption?

It changes the hormonal balance in the body and can affect disease outcomes later in life, it can affect development, it can affect a range of organ development, developmental systems that have an impact on illness, cancer, reproductive effects, developmental effects, sexual development.

And that's not tested for?

Not tested for. The next generation of chemicals defy classical toxicological models, which say that the dose makes the poison. You'll hear golf-course superintendents say, "We're using such minuscule amounts of these chemicals." But endocrine disruption can happen at really low exposures. We don't even have the testing protocol to assess this low dose. [Note: For more on endocrine disruption, try the chilling, classic book, *Our Stolen Future* -- details at ourstolenfuture.org.] With pesticides, we're not just dealing with what we do know, but also what we don't know. The risk-assessment protocol is filled with wrong assumptions. One example is the story of chlorpyrifos, whose trade name is Dursban, which was banned from household use in 2000 because of neurological effects. It had been widely used for insect control indoors and outdoors. But it's still used in golf. And when you as an individual look at the EPA's risk assessment, you might say, "Well, I don't fit in with their assumptions because I golf a lot," for example, or "I'm a kid who plays golf." In its Dursban risk assessment, the EPA assumes that children do not play golf.

Really?

It's written right into the risk assessment. It defies logic, and it defies reality. Risk assessment is filled with these assumptions that are just inaccurate and incomplete. It wasn't until the 1996 Food Quality Protection Act that EPA was required to look at exposure to pesticides in combination. Dursban, for instance, has food uses, in agriculture, and non-food uses such as on golf courses, so you have dietary and nondietary exposure. Prior to the adoption of this act, believe it or not, the agency did not add up exposures from different sources. So if a kid was drinking a lot of juice, say, which kids do, and playing a lot of golf, at the end of the day that kid is getting a high toxic load. So OK, now we're adding up exposures to a chemical, but we're still not looking at the synergistic effects of different chemicals in combination. And we know that combinations of chemicals can cause greater risk. We know, for instance, that if you're taking Tagamet, and you're exposed to an organophosphate pesticide, the potency of that organophosphate is going to be higher. And the same thing happens between certain pesticides. And the EPA knows this. We also know that pesticides can break down to other toxic components, and the EPA doesn't evaluate those breakdown products. There are huge, unanswered questions. The bottom line is, the EPA should be the biggest proponent of the precautionary principle. They should be saying, "We're doing the best we can with the resources we have, but there are a lot of deficiencies in our process."

The Golf Course Superintendents Association of America website (gcsaa.org) says that pesticides are safe when used correctly, and that on average there are 120 studies at a \$50 million cost before approval for a pesticide is granted by the EPA.

That's an outdated statement, and it wasn't even correct at the time it was made. I think the golf-course superintendents feel at some risk -- they're the ones delivering the toxic chemical to the site and are therefore at risk of litigation. They're saying, "Look, we're doing what's legal; we can't be subject to litigation here." Well, there's a Supreme Court case from 2005 called *Bates v. Dow*, where a bunch of peanut growers in Texas sued Dow Chemical for crop failure. Dow maintained that the farmers were pre-empted by federal and state law that registered pesticides as acceptable. The Supreme Court basically said to Dow Chemical, "Sorry, guys, you don't have protection from the federal regulatory system in the U.S." There's nothing in the world that should preclude litigation against the users or manufacturers of pesticides, because we know full well that the regulatory system can be deficient in so many ways.

So could you ever imagine a golfer developing, say, cancer, and suing the GCSAA, or the golf course where he or she plays?

Oh, yeah, I think any corporate entity is opening itself up to liability when it uses these chemicals. We're exposed from a lot of different sources, however, so it would be difficult to prove. But yes, I think there will be cases in the future. The *Bates* decision really opens up the liability issue. [Note: Feldman goes on to detail the case of *Liza Prior's* action against a pesticide manufacturer. Her husband, 30-year-old Naval Flight Officer Lt. George Prior, played golf for three straight days in August 1982, developed flu-like symptoms soon afterward, then suffered a nightmarish rash across his body that essentially stripped away his skin. He suffered kidney failure and, after two weeks of intense pain, slipped into a coma and died. The case was settled out of court.]

I don't want to blame the GCSAA. But one of the problems we've had with them is in fully disclosing that they take money from the chemical companies. The chemical companies always have their hand in the trade associations. So there tends to be this alliance. They walk together in lock step. And because of this, it becomes a pro-pesticide industry. It's because of the money, the flow of funds. Ask them how much money they get from the chemical companies. It's an eye-opener to golfers who just assume that they're representing the interests of golf.

Follow the money?

Follow the money. [Note: The GCSAA, which partners with Golf Digest in the annual Environmental Leaders in Golf awards program, was given the opportunity to respond to Feldman's comments. Greg Lyman, GCSAA director of environmental programs, provided the following statement: "According to a study by University of Florida researchers regarding exposure, they concluded that when used according to the label directions, pesticides approved for use on golf-course turf are believed to NOT post a real health risk to either the workers who apply the chemicals or to others who may come into contact with the chemicals after application, including golfers. One of those Florida researchers, Dr. Chris Borgert, a toxicologist, said, 'Exposure to chemicals on the golf course under normal circumstances is certainly not something I would worry about.'

"GCSAA has never shied away from communicating its relationship with industry partners who produce golf-course-management products. These companies provide funds that help enable us to deliver programs and services to our members and the golf industry. Many of these programs are focused on environmental management. It behooves us to work cooperatively with these manufacturers so that we can gather and distribute reliable and accurate information to our members. We believe we have a healthy and appropriate relationship that does not impact the impartiality or objectivity of our efforts to distribute accurate information about pesticides to our members.

"GCSAA, through its philanthropic arm, The Environmental Institute for Golf, is focused on ensuring golf's compatibility with the environment. Whether it is through funding scientific research, delivering environmentally based education, communicating best-management practices, conducting environmental studies or developing environmentally directed programs and services, the association is a leader in the golf industry. In addition, GCSAA has developed strong relationships with state and federal environmental agencies to ensure that golf courses are operated as community assets, especially from an environmental perspective."]

But golfers want to play courses in good condition. What alternatives do superintendents have to pesticides? What should they be doing?

The easy answer is, organic practices. Organic is still evolving in terms of lawns and landscapes. In agriculture, it's far ahead. The growth of the organic agricultural sector in the last 10 years has been phenomenal. You're looking at a \$20 billion-plus industry, and we could see the same transition in non-agricultural land management such as home lawn and garden and golf-course management.

Pesticides have come a long way, however.

Chemicals on the surface have gotten less toxic as a general rule. We've gone to fewer bioaccumulative materials. When pesticides were first introduced, the presumption was that there would be no secondary effects. The theory was that we could eliminate pests, increase food production, fight diseases, and that after they had performed their positive function the pesticides would dissipate and degrade in the environment. But these assumptions proved false. It became obvious that the chemicals could bioaccumulate. They showed up in the food supply, they can be responsible for long-term chronic disease, they impact endangered species, and so on. The chemicals were not tested for these effects prior to their marketing. And that's been the pattern ever since. Every time a new chemical is introduced, we say, "Oh my God, we're finding residues of this stuff in the environment; it's showing up in mothers' milk -- we didn't expect that." And then we move on to the next chemical family. So the heavy metals were replaced by the organochlorines, which were replaced by the organophosphates, and every time the same claim is made: These are even better, they won't show up anywhere, they don't bioaccumulate in the environment. But lo and behold, these chemicals are showing up in water. All the assumptions once again turn out not to be true. We're constantly playing catch-up. So here we are now in this realm of having newer and newer chemicals, and as new studies come out, we realize that we've introduced new levels of danger, new complexities, and a whole host of effects that the EPA isn't even looking for.

If you don't know what the danger is, you can't test for it before you approve it.

Right.

You have no confidence in the EPA's regulation of pesticide use?

None at all. You can go to the Government Accountability Office website (gao.gov) and type in "pesticides," and you can see the history of the failure of the EPA. It's all very well documented. Their program is poorly thought through, and it's also politicized. The agency might be told, for instance, "We need an outcome that allows Dursban to be used on golf courses, so work backward from that." Even William Ruckelshaus, the first head of the EPA, said risk assessment is like a captured spy: You can get it to say whatever you want it to say.

Has it become worse under the current administration?

Yes. The EPA could use its discretion to improve protection, but at every turn, under this administration, it has used its discretion to implement the minimum amount of protection.

Why is that?

Because there's tremendous pressure from chemical companies to maintain the registrations of these products. It's a very costly proposition to develop these chemicals. After a company has invested in the development of a product, it's going to invest a tremendous amount of money in lobbying for the allowance of that product. A while back we tracked the number of former EPA officials now working for the industry and its consulting firms in this town, and it's fascinating. If you look at any chemical that's being used on a golf course, and you look back to see who's lobbying that chemical for its registration and its re-registration, you'll find it's some former EPA official. It's so lucrative -- it's like the brain drain where people leave Third World countries to go to work in the West. The EPA's pesticide program is like a Third World country. They all jump to the chemical companies. And when a chemical company sits across the table from the EPA, it's a body of knowledge that so far surpasses what is known within the agency that there is a fear on the part of the agency that it will be sued and will be incapable of defending itself against a lawsuit. So there's a tremendous avoidance behavior going on here, and in so doing the agency is compromising public health and safety. It's a horrible phenomenon. It's just set up for failure.

[Note: Debra Edwards, Ph.D., director of the EPA's Office of Pesticide Programs, wrote in an e-mail to say that after reading Feldman's comments, she was "dismayed to find so many inaccuracies and misleading statements." [She provided a lengthy rebuttal to his various criticisms: click here to read her comments.](#)]

If the status quo is as dire as you portray it, how will things change?

What we're seeing now, what's driving decision-making, is public concern. People are concerned about the environment, public health, global warming. They're saying, "Look, we don't want just strict compliance with the law. We want to go beyond that." And that's what they're doing with their homes and their lawns, that's what's happening in school buildings and playing fields where their children are going to school. People are going down to their golf course and saying, "Hey, what are we doing here?" If we're asking golf-course superintendents to drive this process in golf, we're putting them in an unfair position. I find a lot of golf-course superintendents are extremely receptive to these issues and want to be creative in solving these problems and want to adopt better practices. But if the greens committee is putting a lot of pressure on the superintendent to create an Augusta-like look, what's he going to do? He's an employee. His job is always on the line. Until we get the golfers themselves to engage on this issue, we cannot expect the right thing to happen. We have to start talking about this. We have to start realizing what the trade-offs are. Do people want to eliminate this unknown hazard, for their health, their kids, their family, their community? The answer is yes. The general organic movement is very large and growing, and it's going to be more and more consumer-driven. The marketplace is shifting so much more quickly than the regulatory side. This is where the optimism comes in.

Web Exclusive**Debra Edwards, Ph.D.****Debra Edwards, Ph.D., director of the EPA's Office of Pesticide Programs, responds to Jay Feldman's comments.****May 2008**

EPA's pesticide program is based on rigorous, often cutting-edge science. In carrying out our mandates under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended by the Food Quality Protection Act of 1996, EPA bases its decisions to register pesticides for use in the United States on scientific data showing that the pesticides meet applicable safety standards to protect human health and the environment when used as directed on product labeling.

We have established a new "registration review" program for all pesticides on the market. Changes in science, public policy, and pesticide use practices will occur over time. Through the new registration review program, the Agency will periodically and routinely reevaluate pesticides to make sure that as change occurs, products in the marketplace still meet the statutory safety standard. The registration review program challenges EPA to continuously improve its processes, science, and information management while maintaining a collaborative and open process for decision-making.

Rigorous risk assessment is the heart of our evaluation and reevaluation programs. In the risk assessment process, we consider all potential exposure scenarios -- food, drinking water, non-occupational (e.g., residential and recreational) exposures. This involves evaluation of a comprehensive suite of data, typically hundreds of individual studies, and includes assessment of breakdown products in addition to the primary pesticide chemical.

EPA has also developed a framework for conducting cumulative risk assessments where EPA evaluates the potential for people to be exposed to more than one pesticide at a time from a group of pesticides with an identified common mechanism of toxicity. Cumulative assessments consider exposures from food, drinking water, and residential sources, as well as regional exposures from residential and drinking water sources since this is the most appropriate way to account for the considerable variation in potential exposures across the country. EPA's cumulative assessments, therefore, approximate as closely as possible people's actual exposures and potential risks resulting from current uses of these pesticides in different parts of the country.

In conducting risk assessments, we may encounter situations where risks are potentially high. In these situations, we will do additional analyses to better understand what factors are most important in the risk picture and thus what possible risk mitigations could be used to most effectively reduce the risk. The major goal is to consistently and properly characterize the risk to help the risk managers make their decisions. We also recognize that there are countless permutations of chemicals that people might encounter that could make them more sensitive to an exposure to a particular chemical, and that some individuals are naturally more sensitive than others. This is why we include uncertainty factors in our risk assessments.

Regarding the issue of the "potency" of the next generation of chemicals, we require all pesticides to be tested at multiple doses to try to determine a level at which no adverse effects are observed. We modify our tests when we become aware of new technology that is more sensitive. In fact, the Agency has a large research project using specialized genetic testing techniques (known as toxicogenomics) to try to increase the sensitivity of our screening ability.

Our main concern is to identify all the adverse effects that may result from exposure to a pesticide, regardless of the mechanism by which they are caused. The tests EPA has long required are designed to determine whether there are effects on organ systems, developmental and reproductive effects, which include sexual maturation, the development of cancer over the lifetime of the animal, neurobehavioral effects, etc. These studies measure the types of endpoints that would be expected to occur as a result of endocrine disruption. FQPA also required EPA to develop new methods to assess the ability of pesticides to interact

with endocrine systems and thereby to cause adverse effects. While EPA already had test methods for assessing the range of adverse effects that could result from endocrine disruption, we have now developed and will begin requiring new studies to help us understand whether endocrine disruption is the mechanism causing the effects. EPA also carefully evaluates potential risks in recreational activities such as golfing. For example, we estimated the potential exposure and risks received not only by adults but also by both children aged 7-12 and teenagers in the chlorpyrifos risk assessment. The assessment of the use of chlorpyrifos on golf courses shows that this use met our rigorous safety standard.

One of the hallmarks of our program is the transparency and openness in which we operate. In fact, the public participation process we follow for pesticide risk assessment and risk management proposals is considered a model for open government. The six-stage process was actually developed through a very public collaboration of our many and diverse stakeholders who were members of a joint EPA-USDA Federal advisory committee -- the Tolerance Reassessment Advisory Committee.

And finally, I want to address the issue of pesticide use on golf courses. EPA's Pesticide Environmental Stewardship Program (PESP) is pleased to have several partners from the golf industry. Through these partnerships, there is widespread adoption of integrated pest management (IPM) techniques, including use of reduced-risk pesticides by golf course managers. In fact, many golf superintendents study and apply IPM principles on a daily basis for the courses they manage. One of our most dedicated PESP partners is the Golf Course Superintendents Association of America (GCSAA) -- a leader in funding IPM education for superintendents.

The Office of Pesticide Programs has made enormous accomplishments over the past 12 years under the Food Quality Protection Act. We completed the reevaluation of all 9,721 existing food tolerances, and we are on schedule to complete the reregistration of the remaining non-food pesticides this year. We undertook and completed cumulative risk assessments for organophosphates, triazines, n-methyl carbamates, and chloroacetanilide pesticides. More and more reduced risk pesticides are being registered.

We are proud to employ the most highly educated group of scientific and risk management staff in the world. These talented people are responsible for the high quality reviews on which we base our decisions to make sure we protect public health and the environment from pesticide risks. If we can provide more information, please let me know.

SFGate.com**USDA axes the sole national survey to chart pesticide use**

By GARANCE BURKE, Associated Press Writer

Wednesday, May 21, 2008

(05-21) 16:23 PDT Fresno, CA (AP) --

Consumers lost a key source of information about what's sprayed on their food on Wednesday, the last day the government published a long-standing national survey that tracks the amount of pesticides used on everything from corn to apples.

Despite opposition from prominent scientists, the nation's largest farming organizations and environmental groups, the U.S. Department of Agriculture confirmed Wednesday it plans to do away the program.

Since 1990, farmers and consumer advocates have relied on the agency's detailed annual report to learn which states apply the most pesticides and where bug and weed killers are most heavily sprayed to help cotton, grapes and oranges grow.

The U.S. Environmental Protection Agency also uses the fine-grained data when figuring out how chemicals should be regulated, and which pesticides pose the greatest risk to public health.

"If you don't know what's being used, then you don't know what to look for," said Charles Benbrook, chief scientist at The Organic Center, a nonprofit in Enterprise, Ore. "In the absence of information, people can be lulled into thinking that there are no problems with the use of pesticides on food in this country."

Joe Reilly, an acting administrator at the National Agricultural Statistics Service, said the program was cut because the agency could no longer afford to spend the \$8 million the survey sapped from its \$160 million annual budget.

"Unless new funds are made available there's not much that we can do," Reilly said.

While the agency "hates eliminating any report that is actually needed out in the American public," he said consumers could find similar data from private sources.

Still, only a handful of the major agricultural chemical companies spend the approximately \$500,000 it costs to buy a full set of the privately collected data each year, according to a letter written by an advisory committee to the agency.

Most farmers can't afford to pay for the information, even if they need it to plan for the pesticides they'll apply.

Eliminating the program "will mean farmers will be subjected to conjecture and allegations about their use of chemicals and fertilizer," said Don Lipton, a spokesman for the American Farm Bureau. "Given the historic concern about chemical use by consumers, regulators, activist groups and farmers, it's probably not an area where lack of data is a good idea."

Pesticide companies also rely on the program when they're looking to reregister agricultural chemicals, said Beth Carroll, a senior stewardship manager with Syngenta Crop Protection, Inc.

And environmental groups use it to analyze which chemicals could turn up in local water supplies or endanger critical species.

In 2003, the Natural Resources Defense Council used the federal survey to prepare a suit against the EPA, claiming the government failed to assess whether the common herbicide atrazine threatened the survival of endangered Chesapeake Bay sea turtles, endangered Texas salamanders and 16 other aquatic species. The case was settled in 2006.

Reilly said the agency would "love to reinstate the program," but said for now it will only do key surveys such as the monthly crop report, which influences commodity prices on the futures market and livestock reports, which set the price for hogs and cattle.

At a time when consumers are increasingly curious about what goes into their food, farmers, chemical companies and advocacy groups said the cuts would have wide-ranging impacts.

"What we'll end up doing is understanding pesticide use through getting accident reports," said Steve Scholl-Buckwald, managing director at the San Francisco nonprofit Pesticide Action Network. "And that's a lousy way to protect public health."

<http://sfgate.com/cgi-bin/article.cgi?f=/n/a/2008/05/21/state/n161739D74.DTL>

From: Arthur Tesla [arthurtesla@yahoo.com]
Sent: Monday, April 28, 2008 2:47 AM
To: Schlein, Paul B
Subject: Sierra Club genetic engineering website

I am opposed to genetically engineered foods!! I personally know 300 people who are opposed to genetically engineered foods!! In California, four counties voted to ban growing genetically engineered foods.

The Sierra Club representing 750,000 members is opposed to genetically engineered foods! Greenpeace is opposed to genetically engineered foods!! Millions of Americans are opposed to genetically engineered foods. Europe is opposed to genetically engineered foods!! Japan is opposed to genetically engineered foods!! Other countries are opposed to genetically engineered foods!!!

Please do not use genetically engineered foods. Why force on people something they don't want?

One website calls Monsanto the most hated company on earth!!! Another website calls genetically engineered foods the largest food experiment in the history of the world!!

Genetically engineered foods are dangerous tampering with nature and we must stop genetically engineered foods!

Sincerely, Arthur Tesla

<http://www.sierraclub.org/biotech/>

<http://www.greenpeace.org/international/campaigns/genetic-engineering>

many countries are opposed to genetically engineered foods

<http://www.thecampaign.org/international.php>

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