



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

PRESS RELEASE

Date: 5/8/07
For Immediate Release

Contact: Paul Schlein, 207-287-7533
paul.b.schlein@maine.gov

Emergency Legislation Limits Spraying for Browntail Moths

AUGUSTA—On April 12, for the second year, Governor Baldacci signed into law emergency legislation to protect marine organisms. The law limits the public or private application of pesticides to control browntail moths. Key points of P.L. 2007, Chapter 50, are as follows:

- Only the coastal areas of Cumberland, Lincoln, Sagadahoc, and York counties are affected.
- Pesticides cannot be applied on shade or ornamental trees within 50 feet of the mean high water mark in coastal areas.
- Restrictions do not apply to biological pesticides, the injection of pesticides into the soil or shade or ornamental trees, or to the application of pesticides by licensed commercial pesticide applicators using nonpowered equipment.
- Pesticides cannot be applied on shade or ornamental trees in coastal areas located between 50 and 250 feet from the mean high water mark except as follows:
 - Only the products with the active ingredients diflubenzuron (Dimilin[®]), permethrin (Astro[™]), tau-fluvalinate (Mavrik[®]), or cyfluthin (Tempo[®]) can be applied.
 - Only a hydraulic, hand-held spray gun or airblast sprayer can be used for application.
 - Spray must be directed away from marine waters.
 - Applications cannot be made when the wind is blowing toward marine waters or is less than 2 miles per hour.
- Commercial applicators must notify the Maine Board of Pesticides Control (BPC) between 48 and 18 hours in advance of using air-assisted sprayers.
- The BPC will monitor applications of pesticides using airblast sprayers and, in cooperation with the Department of Marine Resources, may sample marine waters and sediments in coastal areas where pesticides are applied.
- The BPC will be developing rules to continue these restrictions beyond 2007.

The complete law can be viewed at: <http://www.mainelegislature.org/legis/bills/chapters/PUBLIC50.asp>.

Maine Forest Service State Entomologist, Dave Struble, says “Browntail moth populations are markedly down this year. With the exception of a few spots in the midcoast, there is no biological need to spray for browntail moth control. Any spraying that is done should be carefully considered on a case-by-case basis.”

With any questions or for more information, contact the BPC at 207-287-2731.

The Maine Board of Pesticides Control is the lead state agency for pesticide regulation. It is an administrative unit of the Maine Department of Agriculture, Food and Rural Resources with policy decisions made by a seven-member, public board.

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SETH H. BRADSTREET III
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HENRY JENNINGS
ACTING DIRECTOR

PRESS RELEASE

For Immediate Release
Date: April 12, 2007

Contact: Paul Schlein, 207-287-7533
paul.b.schlein@maine.gov

STATE OFFERS FREE DISPOSAL OF BANNED, UNUSABLE PESTICIDES

AUGUSTA—Hundreds of Maine citizens live unaware of a quiet crisis lurking in or near their homes. In barns, basements, sheds, or garages throughout the state reside tons of banned and unusable pesticides: old chemicals with infamous names like DDT, lead arsenate, 2,4,5-T, and chlordane.

Often, new owners of older homes or farms discover they have inherited hazardous waste. When they do, citizens face a dilemma: hire an expensive hazardous waste disposal service or dump the chemicals illegally, inviting harm to the environment and public health.

Fortunately, there's a third option that's both legal and responsible. Even better, it's free, simply by contacting the Maine Board of Pesticides Control (BPC). In 2007, there will be two collections—in May and October—when the state regulatory agency will dispose of banned pesticides or pesticides that have become caked, frozen, or otherwise rendered unusable. And, again, there is no cost to homeowners.

“We urge people holding these chemicals to contact us immediately to register,” says Paul Schlein, BPC Public Information Officer. “There will be four sites throughout the state where folks will be able to bring their obsolete pesticides.”

The collected chemicals go to out-of-state disposal facilities licensed by the US EPA where they are incinerated or reprocessed.

“While offering free obsolete pesticide disposal is expensive for us,” notes Schlein, “it's a bargain, compared to the cost of cleaning up contaminated soil or water. However, it's worth noting that future funding is not guaranteed, so be sure to take advantage of this year's collections while you can.”

To register, find out collection dates and locations, and learn important information about the temporary storage and transportation of obsolete pesticides, go to the BPC Web site at www.thinkfirstspraylast.org. Or, call the BPC at 287-2731.

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The Maine Board of Pesticides Control (BPC) is the lead state agency for pesticide regulation. It is an administrative unit of the Maine Department of Agriculture, Food and Rural Resources with policy decisions made by a seven-member, public board. The BPC is creator of “YardScaping,” a statewide program that recognizes the connection between backyards and watersheds, and calls for Maine citizens to make lawn care choices that don't compromise the environment or the beauty of their lawn.

PHONE: 207- 287-2731

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www.thinkfirstspraylast.org



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SETH H. BRADSTREET, III
COMMISSIONER
HENRY JENNINGS
DIRECTOR

MEMORANDUM

DATE: April 27, 2007
TO: Turf Applicators
FROM: Henry Jennings
SUBJECT: Recent Regulation Changes Affecting Trichlorfon

Recent amendments to Board rules (Chapters 40 and 41) have changed the classification of trichlorfon (Dylox, Bayer 24 Hour Grub Killer Plus, Spectracide Grub Stop 24 Hour Lawn Rescue) from limited use to restricted use. Effective April 30, 2007, anyone with a pesticide applicator's license in Category 3B can purchase trichlorfon and apply it according to the following restrictions, as stated in Section 2 of the amended rule:

- A. Trichlorfon shall only be used for control of subsurface insects on turf.
- B. Prior to application the target pest must be identified and the severity of the infestation must be determined, including the extent of the damage.
- C. Only infested areas shall be treated with trichlorfon. Broadcast treatments of the entire turf area are prohibited.
- D. Following application, the trichlorfon must be watered into the soil with at least ½ inch of water and according to the label directions. The applicator must assure that the appropriate watering will take place prior to re-entry by any unprotected person.

The complete text of Chapters 40 and 41 can be accessed at the Board's Web site at:

www.thinkfirstspraylast.org/laws/regs.htm.

In addition, the Board's Turf Best Management Practices Committee has drafted "Best Management Practices for the Application of Turf Pesticides and Fertilizers," and is asking for your comments. For a copy of this publication, go to www.thinkfirstspraylast.org/turf_bmps/index.htm. Please contact Gary Fish at the Board with your comments (phone: 207-287-7545, fax: 207-287-7548, e-mail: gary.fish@maine.gov).

With any questions about the rule amendments, contact the Board staff at 207-287-2731.



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SETH H. BRADSTREET, III
COMMISSIONER
HENRY JENNINGS
DIRECTOR

MEMORANDUM

DATE: April 30, 2007
TO: Restricted Use Pesticide Dealers
FROM: Henry Jennings
SUBJECT: Recent Regulation Changes Affecting Trichlorfon and Pond Dyes

Recent amendments to Board rules (Chapters 40 and 41) have changed the classification of trichlorfon (Dylox, Bayer 24 Hour Grub Killer Plus, Spectracide Grub Stop 24 Hour Lawn Rescue) from limited use to restricted use, and have added an exemption from licensing requirements for certain food-grade pond dyes for use as aquatic herbicides (Admiral Liquid, Admiral WSP, Algae Blocker, Aquashade Aquatic Plant Growth Control, Pondmaster Blue).

TRICHLORFON

Effective April 30, 2007, anyone with a pesticide applicator's license can purchase trichlorfon and apply it to turf areas according to the following restrictions, as stated in Section 2 of the amended Chapter 41:

- A. Trichlorfon shall only be used for control of subsurface insects on turf.
- B. Prior to application the target pest must be identified and the severity of the infestation must be determined, including the extent of the damage.
- C. Only infested areas shall be treated with trichlorfon. Broadcast treatments of the entire turf area are prohibited.
- D. Following application, the trichlorfon must be watered into the soil with at least ½ inch of water and according to the label directions. The applicator must assure that the appropriate watering will take place prior to re-entry by any unprotected person.

POND DYES

Effective April 30, 2007, purchasers of certain food-grade pond dyes (Acid Blue 9 or Acid Yellow 23) are exempt from the applicator licensing requirements described in Chapter 41, Section 4 (B) (I) and Chapter 41, Section 4 (B) (II) (b).

In addition, Section 4 (E) specifies the requirement to follow Best Management Practices when applying pond dyes:

Aquatic herbicides applied to private ponds and not subject to an aquatic discharge permit may only be applied consistent with Best Management Practices developed jointly by the Board and the Maine Department of Environmental Protection.

Important Note: To distribute these dyes, a pesticide dealer's license is still required, sales records must still be kept, and reports must be given to the Board, as described in Chapter 50.

The complete text of Chapters 40 and 41 can be accessed at the Board's Web site at:
www.thinkfirstspraylast.org/laws/regs.htm.

With any questions about these rule amendments, contact the Board staff at 207-287-2731.

Dylan's got the answers about genetic engineering

C.R. Lawn of Waterville, a longtime Bob Dylan fan

Sunday, April 22, 2007

Why do we need to amend Maine's laws concerning genetically engineered seed? The answer, my friend, is blowin' in the wind.

If the state Board of Pesticides Control, as expected, approves applications from biotechnology giants Dow, Pioneer and Monsanto to register genetically engineered (GE) corn, that corn's acreage in Maine will increase.

Both corn and canola readily cross-pollinate. Their pollen is wind-borne. No one can build a fence high enough or tight enough to keep it out. As acreage increases, so will the risk of contamination of non-genetically engineered crops and consequent economic loss, especially for certified organic farmers whose markets demand GE-free products.

The Russians tried in Berlin to keep people in. As Cold War tensions escalated, Bob Dylan wrote his legendary anthem in April 1962. The Cuban missile crisis would unfold six months later. For decades, we would live under "peaceful co-existence," a euphemism for a process neither peaceful nor supportive of either side's existence.

So when the Maine Department of Agriculture, years later, promulgated its "Plan for Co-existence" between GE and non-GE growers, the words brought back chilling memories.

Co-existence, as practiced by the department, no more supports peace among farmers than "peaceful co-existence" did among nations. So far, it has been an excuse to give carte blanche to big biotech.

Back to Dylan. How many times can a man turn his head, pretending he just doesn't see? In 2001, the Legislature passed a first-in-the-nation law requiring GE seed manufacturers to provide planting instructions to minimize potential cross-contamination. But the state's agriculture officials never adequately enforced the law, allowing Monsanto to disseminate "instructions" that didn't teach farmers how to take any specific steps to minimize potential cross-contamination, and moreover, they implied that 80 feet was a safe distance to separate varieties to prevent crossing.

The minimum industry standard for separating hybrid corn varieties is 660 feet. The USDA Yearbook of Agriculture, 1961, recommends 1,260 feet.

State agricultural officials, while extolling biotech's benefits, have never acknowledged its risks. Their co-existence plan, though drawn from a document by organic expert Jim Riddle, deleted his most important section on risk and neutered his language, substituting the word "mix" for "contaminate." The issue is not mixing per se, it is the consequence of mixing, which is contamination of the non-GE crop. The consequences are not equal.

Co-existence requires that the risk and the burdens of avoiding risks be shared reciprocally by both parties. Compare Riddle's definition of co-existence -- "the ability of farmers to provide customers with a choice

between GE and non-GE ... crops and products" -- with the department's tepid -- "the ability of farmers to meet the needs of their customers while respecting the needs of their neighbors."

Respect is not sufficient when neighbors can unintentionally inflict economic damages on each other.

L.D. 1650 would provide some of that protection. While neither banning nor restricting the use of GE technology, it would make GE patent holders, not farmers, liable for any contamination that results in damages over \$250. If biotech proves as safe as its lobbyists claim, the costs will be negligible. If not, the multibillion-dollar gene giants that benefit most from the technology will be far better able to bear its costs than our small farmers, who could be put out of business by one lawsuit. We haven't yet had any farmer vs. farmer lawsuits over GE in Maine. L.D. 1650 would keep it that way.

All disputes would be heard in Maine courts under Maine law instead of in Missouri where most GE cases go now.

A court order and prior notification would be required before company representatives could come onto a farmer's land to test for patent violations, overriding typical provisions in GE technology use agreements where farmers sign away those rights. Farmers whose crops were tested could request that split samples be taken for independent verification. These modest provisions would help level the field, both for farmers using GE technologies and neighbors choosing not to.

How many roads must a man walk down, before you call him a man?

Time for each side to grow up and eschew knee-jerk reactions.

Organic advocates like me must recognize biotech is here to stay at least until supplanted by better/safer science, and efforts to ban it will be fruitless and counterproductive.

Big biotech must recognize organic is here to stay, respect its choice not to use the technology and acknowledge its right to protection from genetic contamination. Both sides need to preserve choices for all farmers.

C.R. Lawn of Waterville, a longtime Bob Dylan fan, founded Fedco Seeds in 1978.

Will proposed law mean farmer fratricide? Or is it a solution in search of a problem?

Lauchlin W. Titus of Vassalboro

Sunday, April 22, 2007

Are Maine farmers about to experience a kind of brother vs. brother civil war such as the one that divided the Vermont farming community over the past four years?

A bill pending before the Legislature that will force legislators to choose between two competing visions for Maine farming could set off the conflict.

The bill, L.D. 1650, submitted by Rep. Jim Schatz, D-Blue Hill, is not an original piece of work. It is the same bill that caused much rancor in Vermont last year and ultimately was vetoed by the governor of that state.

The bill before our Legislature proposes changing some key provisions in Maine law as they relate to genetically modified crops. These are crops that have been altered with modern biotechnology to give them certain desirable traits.

Supporters of the bill claim the changes are necessary to protect Maine farmers from lawsuits arising from the damage caused by genetically engineered (GE) crops. The law would give Maine farmers certain protections if they are sued.

Trouble is, we've had none of the problems in Maine agriculture such as the ones claimed by the supporters of the bill -- organic crops being damaged by pollen from GE crops, farmers being sued and their land invaded by agents of seed developers. In many ways, L.D. 1650 is a solution in search of a problem.

Supporters of the bill believe that when patented GE crops dominate the landscape, the result will be lower nutrition and degradation.

That belief, however, is open to much debate. Genetic traits are being developed for GE crops that will enhance nutrition. As a professional agronomist, I have not found that GE crops cause soil degradation nor have I seen any valid studies to indicate that it does.

In fact, the use of genetically modified traits has dramatically reduced the volume of pesticides used in this state and in this country. This has a positive impact on the environment by reducing levels of herbicides in our ground water and surface waters. A reduction in insecticide usage in corn can have a positive impact on insect diversity, thus improving soil life and soil health, which can have a positive impact on higher life forms -- frogs, birds and other vertebrate species.

Another misleading claim is that farmers can no longer save seeds because of patented seed traits. It is true that farmers who choose to use any of the patent-protected genetic technologies sign a license agreement to not save the seed. They make a conscious decision to buy and use those patent-protected seeds. Farmers who want to can still save seed; many other seed choices are available to them.

The laws of the United States allow individuals and corporations that have patent rights and copyrights to protect those rights through the legal system.

People who disagree should be working to change the federal laws on this issue instead of attempting to impose their ideas on the Maine farmers who want to use the newest, most modern agricultural production practices on their farms.

We have had none of the problems in Maine agriculture claimed by the supporters of L.D. 1650, which this bill is supposed to correct and provide protection for.

It is another attempt to impose the ideas and wills of a few on the many for problems that do not exist.

I am confident that our legislators have the intelligence to recognize this and will act appropriately in defeating it.

Lauchlin W. Titus of Vassalboro is a certified professional agronomist who provides crop consulting services to Maine farmers. He's the president of the Maine Vegetable and Small Fruit Growers Association.

Liability over gene-altered crops debated

Tuesday, April 24, 2007 - Bangor Daily News

AUGUSTA - Lawmakers grappled Monday with the question of who should be held legally and financially responsible when an organic farmer's produce becomes contaminated with genetically engineered crops from a neighbor's fields.

In the latest political fight in Maine over gene-altered crops, organic farmers and their supporters are urging the Legislature to pass a bill that would allow organic farmers to go after seed manufacturers if their land is cross-contaminated by the company's genetically engineered or modified crops.

The bill, LD 1650, also would tweak the state's definition of "genetically engineered" and clarify the rights of farmers being investigated by seed manufacturers for possible contract violations.

Supporters described the bill as proactive legislation to protect Maine's growing organic agriculture industry and prevent farmers from suing neighboring farmers over the loss of organic price premiums for contaminated crops and products.

"I have studied this issue and I feel that before we have a greater problem, it is important to pass legislation that ensures the viability of the seed crops that we are growing in our towns and communities," said Rep. James Schatz, D-Blue Hill, the measure's sponsor.

Critics of the bill, including Maine's Department of Agriculture and several of its largest agriculture organizations, predicted that the measure could have unintended consequences on the state's farmers.

One of the biggest fears voiced Monday was that seed manufacturers — corporate giants such as Monsanto and Archer Daniels Midland — would simply stop selling their high-tech seeds in Maine rather than risk costly lawsuits from organic farmers.

Jim Crane, a third-generation farmer from Exeter, said his family doesn't currently use genetically engineered seeds for its corn, potatoes and other crops. But Crane said he has used these high-tech seeds in the past and would like to retain the option.

Passing a manufacturer liability law could prompt the big players in the seed business — companies that Crane and other farmers depend on — to pull out of Maine's relatively small agricultural market, he said.

"Please don't make us the pioneers," Crane said.

No representatives of seed manufacturers spoke during Monday's hearing.

Use of genetically modified seeds has exploded across the U.S. during the past 15 years. Today farmers can choose from a wide assortment of seeds designed to resist pests, survive drought and enable better weed control.

Among the most popular gene-altered crops grown in Maine are corn, canola, soybeans and potatoes, although use of the latter has declined since McCain Foods stopped buying potatoes grown from genetically modified seed.

But Maine's organic farming industry, valued at more than \$10 million, is the state's largest

agricultural segment. And backers of LD 1650 believe the state can do more to protect the significant investment organic farmers make in growing all-natural products.

Spencer Aitel, owner of Two Loons Farm in China, said some of his organic fields were contaminated by genetically modified crops several years ago. If the state does not act now, Maine's organic farmers could shortly begin seeing problems with seed purity, he said.

Additionally, Joel Glatz, founder of Maine-based biofuels supplier Frontier Energy, said he is frequently asked by his customers whether any of their agriculture-based fuels are grown with genetically modified crops. Contamination would affect his business as well, Glatz said.

Several bill supporters stressed repeatedly that the measure does not prevent farmers from choosing the best crops — whether conventional or genetically engineered — for their fields.

But critics of the bill were unconvinced.

Vernon DeLong, who helps negotiate contracts between processors and growers in the Presque Isle area as part of the Agricultural Bargaining Council, said he believes the bill is a backdoor attempt to ban genetically modified crops in Maine.

"We have a perceived problem," DeLong said, "but we haven't seen the problem yet."

Vermont's Legislature passed a similar bill recently only to have it vetoed by the governor. Several other state legislatures are dealing with similar measures.

<http://www.bangordailynews.com>

Farmers clash over modified crops

By ANN S. KIM, Staff Writer Tuesday, April 24, 2007



Seth Kroeck waters seedlings on Monday at the Crystal Spring Community Farm in Brunswick. Kroeck supports making manufacturers responsible if genetically engineered crops spread. He fears that organic growers could lose their certification if mixing occurs. Staff photo by Jack Milton

AUGUSTA - Organic and conventional farmers find themselves on opposite sides of the fence as the Legislature considers a bill to make manufacturers of genetically modified seeds liable for damages if their products spread to other crops.

Some supporters of the bill, sponsored by Rep. James Schatz, D-Blue Hill, said it would protect farmers' ability to control what they grow, whether they use organic or conventional methods.

Opponents said the bill could cause some manufacturers to remove their products from Maine, depriving conventional farmers of tools they use.

Seth Kroeck of the Crystal Spring Community Farm in Brunswick, a supporter of the bill, says that not enough is known about crops whose genetic material has been scientifically altered to produce particular traits, like resistance to rot or pests. Organic growers could lose their certification if their products mix with genetically modified plants, he said.

"Genetically modified crops are getting more powerful. You put that up against organic food, which is growing as a market," Kroeck said. "We're going to start banging up against each other really soon."

Organic products are grown without the use of synthetic fertilizers and pesticides. Organic livestock is given feed grown in that manner.

Schatz said his bill would assign liability to the manufacturer of genetically engineered plants, rather than the farmers, when someone sues over plants spreading onto their property. A person could sue for damages including the cost of replacement seed and the difference in profit caused by the contamination.

"Being proactive, I think, will prevent a lot of grief and strife between our agricultural communities," Schatz told the Agriculture, Conservation and Forestry Committee at a public hearing Monday.

The bill is similar to one that Vermont lawmakers passed last year before Gov. James Douglas vetoed it. Similar bills are in play in several states, including California and New York, according to Logan Perkins, campaign coordinator of Protect Maine Farmers, a group that worked with Schatz on the bill.

In Maine, the most prevalent genetically modified crop is Roundup Ready corn, an herbicide-resistant variety created by Monsanto Co. that is grown as feed, primarily for dairy cows.

Several thousand acres of genetically modified soy beans and canola are also grown, and there are trial acres of alfalfa. Three applications for various types of insect-resistant corn are before the Maine Board of Pesticides Control.

Critics of the bill said it would reduce options for some farmers. Thomas Cote, a dairy farmer from Pittsfield, said Roundup Ready corn lets him cut down on the herbicide he would otherwise use to grow silage corn for his herd. He said he's had no problem with the product mixing with his sweet corn because he makes sure they aren't being pollinated at the same time.

"We want to continue using the products we have. We want to be able to use the products coming down the road," he said.

The state Department of Agriculture also opposes the bill. Agriculture Commissioner Seth Bradstreet III said liability concerns would make manufacturers less willing to invest in Maine. He noted that such products get federal and state approval before they are used.

Vernon DeLong of the Maine Agricultural Bargaining Council said he believes the bill is a back-door approach to eliminating genetically modified crops in Maine. He said farmers in the state benefit from crops like canola. The non-genetically modified type was unsuccessful because of weeds, he said.

"We need to maintain our right to technology," DeLong said.

The Maine Farm Bureau is opposing the bill because the organization's state board feels the issue is too divisive, said Jon Olson, executive director.

Rep. Nancy Smith, D-Monmouth, urged the committee to consider the bill from a business perspective. Smith, who has an organic dairy farm, said the introduction of genetically modified organisms into organic products will cause growers to lose their price premiums, the additional amount of money consumers are willing to pay for such products.

"Let me grow what I want to grow. I'll let you grow what you want to grow," she said.

The committee will revisit the bill at a work session, which has not yet been scheduled.

Staff Writer Ann S. Kim can be contacted at 623-1031 or at: akim@pressherald.com

Reader comments

1-10 of 10 comments:

sensible of Bangor, ME

Apr 24, 2007 1:12 PM

This bill is not only necessary, it's a MUST!

There simply isn't enough information about genetically modified foods to assure that they can't/won't do damage to "real" crops to take a chance especially in light of information that has linked the possibility of GMO's as one of the potential problems with the sudden disappearance of bees and many other unknown factors.

Maine is excelling in the production of organic products. To put that at risk for something such as this is not only irresponsible but undermines the integrity and all the hard work that it's taken to get this far with the production of organic products.

Eric, selective breeding and grafting, if not adulterated by chemicals, is quite different from GMO's. However, even without the adulteration, there's already significant evidence which shows the *true* beneficial effects (eg the amount of nutrients the body processes from products made via "altered" seeds/plants) to be substantially lower than those consumed which haven't been modified just as vitamins produced using more natural methods are usually more readily utilized by the body... Thus even though the initial cost may seem greater, when compared to the absorption/utilization rate, those seemingly higher priced products are quite often the better bargain in the long run.)

Yes, there's still a considerable amount of controversy on this subject, but as someone who has had personal experience with serious health issues until it was determined that it was because my body wasn't processing the so-called "nutrients" in the chemically formulated supplements being prescribed by my doctor, I can attest to the fact that there is indeed a vast difference. (FYI, my initial experience was over 30 years ago and since then I've met more people than I can count who've also found this to be true.)

sensible of Bangor, ME

Apr 24, 2007 1:11 PM

(part 2, cont. from above)

Think about it, the human body is a "natural" entity, whether or not any of these GMO's are equal to or potentially a serious detriment... or worse, we'll not likely know for at least a generation or two. Is it really worth the potential of causing serious damage to our food supply which is already at risk via all of the environmental factors we're facing these days?

I say let's make sure we protect what we KNOW to be good for us!

To Vernon DeLong, may I suggest you maintain several inches of straw around the base of your plants to reduce/possibly eliminate the weed growth?! It works with NO chemicals! ;)

And Ed, maybe you should volunteer yourself and your family to be guinea pigs for the GMO labs if you feel that strongly about it because that's what we all are if we subjected to this, with or without consent and *I* choose NOT to consent!

Ed of Kennebunk, ME

Apr 24, 2007 12:45 PM

Is there some case of damage caused to organic farmers here? The article doesn't indicate this is an existing problem. Could we possibly have another solution in search of a problem coming out of Augusta?

"Schatz said his bill would assign liability to the manufacturer of genetically engineered plants, rather than the farmers, when
PPH—Farmers clash over modified crops, 4/24/07 Page 2 of 3

someone sues over plants spreading onto their property."

Let's follow the logic of this reasoning; if I hit someone with my car, Ford or GM can be sued instead of me. If my house burns down, I can sue the builder. Maybe if I'm in an airplane crash, we can sue Boeing instead of the airline.

Yes. Good. Lets 'assign liability' to a party that has no control over the abuse or mis-use of their product. Brilliant!

Yet another way to increase the cost of living in Maine - make us all buy organic by chasing away alternatives.

MizMac of Portland, ME
Apr 24, 2007 12:20 PM
Hey Eric,

Go rent a movie called The Future of Food. It will help you understand why genetically modified food is so bad, for both consumers and farmers.

Sandy of Portland, ME
Apr 24, 2007 11:52 AM

Fish dna and tomato dna would not ever likely combine naturally. Yet scientists have tried to do just that in a lab to create tomatoes that last longer. This isn't cross pollination going on here but an experiment where we are all the intended guinea pigs. Personally I don't think plant and animal kingdoms are supposed to cross genetically.

Companies that hold the patent for GMO seeds can sue if those seeds are used without license, farmers also ought to be able to sue if the pollen from those seeds contaminate their crops. The street goes both ways!

Eric of Phila, PA
Apr 24, 2007 11:25 AM
Thomas of Deering Center, ME,

What is the reason to think that plants genetically modified in a lab are any more or less dangerous than plants that were genetically modified using methods like selective breeding or grafting?

Thomas of Deering Center, ME
Apr 24, 2007 11:14 AM

Let's see some spine here. Keep GMO crops out of Maine. Stand up to the evil chemical agribusinesses who are poisoning the planet for profit. Regular folks can do their bit by boycotting farmers who use this crap. Buy local, and buy organic.

Cinder of Augusta, ME
Apr 24, 2007 10:18 AM

Ya know.... ya can't fool Mother nature! Nature will find a way! Just like the flu changes alittle every year because of the flu vaccines....so will other life forms change, be it molecular or insects. It's called "Evolution". Have you heard of it? It happens, it happens all the time and is happening now even to our own species "Humans". It's on going and never ending. It is a fact of life we have to accept that because it can't be changed. I do hope we smarten up and learn to live in harmony with nature and the world.....

Pete of Freeport, ME
Apr 24, 2007 9:11 AM

Without knowing the details, this bill sounds like a great idea. The implicit costs of technology need to fall on those making the profit from it.

I personally don't want to eat GM foods and hope to always have a choice.

G Carpenter of Kennebunkport, ME
Apr 24, 2007 8:39 AM

This bill should be crafted as to prevent patent holders of genetically modified strains from doing as they've done elsewhere - litigating a farmer who's conventional, or organic crops were contaminated by the genetically modified crop. To the farmer sowing the g.m. seed it was a non-issue, to the farmer who's crop was cross-pollinated it became an issue due to the "theft of patented materials" lawsuit. The major player? Monsanto, a name familiar to Mainers due to the RBGH-free milk lawsuit a few years ago. I'd caution a slow and deliberate approach to this legislation, so that farmers on both sides of the issue are given equal protection. Further, an independent study of crop yields, and complications of using GM seed crops should be undertaken prior to enacting legislation. Canada has years of experience, most of it highly controversial.

Ban on Monsanto genetically modified alfalfa upheld

Thu May 3, 2007 5:24PM EDT

By Jim Christie

SAN FRANCISCO (Reuters) - Citing the potential for genetic contamination, a U.S. judge on Thursday let stand a precedent-setting ban on the planting of a genetically modified alfalfa crop variety developed by Monsanto Co.

U.S. District Judge Charles Breyer in a published order said his initial injunction against planting more of Monsanto's herbicide-resistant Roundup Ready alfalfa should stay in place until government studies on its environmental effects are concluded.

The ban is nationwide. An estimated 220,000 acres of Roundup Ready alfalfa have been planted.

"It's a turning point hopefully in the way biotech crops are regulated," said Will Rostov, a lawyer with The Center for Food Safety, a consumer advocacy group that sued the U.S. Department of Agriculture over its oversight of the genetically engineered alfalfa.

"It should be a wake-up call for USDA that they need to do more environmental studies with respect to future biotech crops," Rostov told Reuters in a telephone interview.

Rachel Iadicicco, a spokeswoman for the USDA's Animal and Plant Health Inspection Service, said the government plans a complete environmental-impact statement on the biotech alfalfa.

Alfalfa is a perennial livestock fodder crop and one of the mostly widely grown crops in the United States. The commercialization of the Roundup Ready variety angered environmentalists, organic farmers and consumer groups, who fear it will contaminate organic and conventional varieties, create "superweeds" that do not respond to herbicide and damage export business.

Judge Breyer had issued a preliminary injunction in March, ruling U.S. regulators improperly allowed the commercialization of the biotech alfalfa without a thorough examination of its effects. That marked the first time a federal court overturned USDA approval of a biotech seed and halted planting, according to The Center for Food Safety.

The Roundup Ready alfalfa genetic trait was developed by Monsanto and licensed to Forage Genetics International, which produces and markets the seeds. The two companies had asked the court to lift the ban, arguing there was a low risk of contamination, but Breyer rejected that argument.

"The harm to these farmers and consumers who do not want to purchase genetically engineered alfalfa or animals fed with such alfalfa outweighs the economic harm to Monsanto, Forage Genetics and those farmers who desire to switch to Roundup Ready alfalfa," Breyer wrote.

His ruling Thursday does not stop the harvesting of Roundup Ready alfalfa that already has been planted and is contracted to be sold for seed back to Forage Genetics. About 76 farmers have such contracts, the court ruling states.

To minimize the risk of "genetic flow" between the genetically engineered alfalfa in the ground and conventional and organic alfalfa crops, Breyer ordered the segregation of the biotech alfalfa immediately after harvest. He also ordered disclosure of field locations where the crop was planted.

Monsanto said in a statement it is reviewing its options, including a possible appeal of Breyer's ruling.

"To support its argument that growers should have continued access to the technology, Monsanto presented its extensive regulatory and environmental studies on Roundup Ready alfalfa," the statement said. "It also described successful stewardship practices that allow the coexistence of organic, conventional and Roundup Ready alfalfa. Other regulatory agencies around the world, including Canada and Japan, have confirmed the environmental safety of Roundup Ready alfalfa."

Forage Genetics was not immediately available for comment.

Monsanto shares closed up 87 cents, or 1.48 percent, at \$59.50 in New York Stock Exchange trading.

(Additional reporting by Carey Gillam in Kansas City)

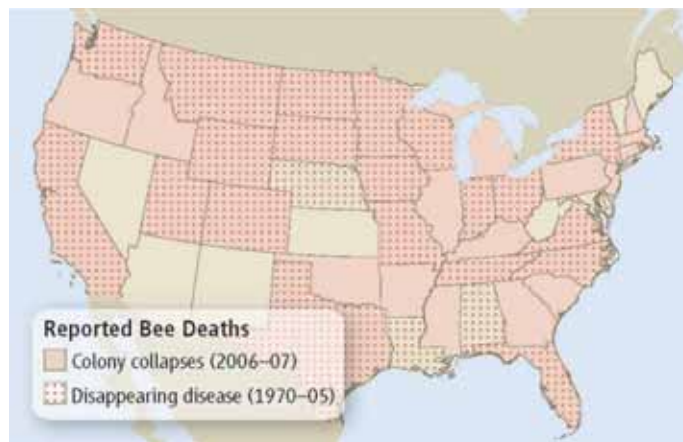
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The Case of The Empty Hives

Honey bees worldwide are abandoning their hives, and scientists aren't sure whether to blame pathogens, pesticides, or the artificial diets fed to the bees. It's not even clear if the phenomenon is new

DAVID HACKENBERG WAS THE FIRST beekeeper to draw attention to what is now one of the hottest problems in agriculture: a devastating collapse of honey bee colonies. Last October, while inspecting 400 of his company's hives in Florida, he noticed that 368 were almost empty, despite having been healthy just 3 weeks earlier. Gone were the swarming worker bees; instead, the eerily quiet hives housed just the queen bee and many doomed brood. All told, Hackenberg has lost 85% of his 3000 hives—and \$450,000 of income. Although beekeepers are used to abandoned hives and bee die-offs, the extent was far worse than Hackenberg had ever experienced—and he has tended bees for more than 4 decades. “It’s probably the most stressful year of my life,” he says.

Alarmed, Hackenberg contacted Diana Cox-Foster, an entomologist at Pennsylvania State University (PSU) in State College. Soon she and Dennis vanEngelsdorp, the state apiarist, heard of similar problems from beekeepers across the country. By January, the two had established a network of researchers from Florida to Montana to solve the puzzle of what they’re calling colony collapse disorder (CCD). “It’s a science-fiction scenario come to life,” says entomologist May Berenbaum of the University of Illinois, Urbana-Champaign.



Déjà vu? Beekeepers across the country have reported colony collapses. A mysterious syndrome, called disappearing disease, struck similarly in the 1970s.

Last year, Berenbaum led a National Research Council panel that warned of a looming pollination crisis if honey bees and other pollinators continue to decline in number (*Science*, 20 October 2006, p. 397). Some scientists now fear that the emergence of CCD will tip the balance, forcing many beekeepers out of business and raising costs for farmers who already rent hives because of a lack of natural pollinators. “We may be near the point when there are not enough bees,” says Danny Weaver, a queen breeder with B. Weaver Apiaries in Navasota, Texas.

At a recent meeting to devise a research strategy on CCD, scientists debated whether known bee killers, including pesticides, the varroa mite, viruses, and bacteria, were responsible. Others suspect a novel pathogen, and several top virologists are analyzing samples from afflicted hives at a breakneck pace. Researchers have even irradiated honeycombs to determine whether an infectious agent explains the disorder. Yet some blame the collapses on better understood problems, such as spells of bad weather that leave bees hungry. Or perhaps industrial-scale beekeeping—in which hundreds of thousands of hives are trucked around the country and pumped up with sugar syrups to boost their numbers—has made colonies more vulnerable.

Little consensus about the cause of CCD emerged at the meeting, which the U.S. Department of Agriculture (USDA) in Beltsville, Maryland, convened. It could be a variety of factors, notes Jeffery Pettis of the USDA bee lab in Beltsville, Maryland: “At this point, we’re proceeding not knowing which causes might be more important.” In fact, given that there are so



few data on the health of domesticated honey bees—and even fewer on wild populations—many scientists aren’t even convinced yet that what’s going on is really a new phenomenon.

In decline

Honey bees are indispensable farmhands, pollinating some 95 kinds of fruits and vegetables grown in the United States. An estimate by Cornell University researchers in 2000 placed the value of the insects’ services at \$14.6 billion in extra yield and improved crop quality. Yet honey bees, like other pollinators, have been in trouble for a while. The number of U.S. honey bee colonies fell from 5 million in 1940 to 2 million in 1989, a decline largely attributed to economic shifts in farming.

For the last 20 years, the biggest issue for beekeepers has been the varroa mite, first noticed in the United States in 1987. Once infected, an untreated hive can be totally wiped out in a few months. “Varroa mites are public enemy number one for bees,” says Pettis. The mites have nearly eliminated feral colonies of honey bees, which used to pollinate many vegetable crops. Many farmers must now rent bees for pollination, which has contributed to the growth of large-scale beekeeping; since the late 1980s, the number of colonies has expanded by 25% to 2.5 million.

But now CCD threatens to erase that small comeback—and with lightning speed. Although bees occasionally abandon their



Scrutinized. Scientists are probing the enigmatic disappearance of worker bees, with brood and queen left behind (*right, bottom*). Parasitic mites (*right, top*) could be a factor.



hives if disturbed, the demographics of these recent collapses are odd. The queen usually remains, surrounded by untended brood. And other insects, such as wax moths or small hive beetles, don't rob the abandoned hives of honey or nectar, suggesting some sort of contamination. "It's bizarre," says Berenbaum.

Puzzling sudden losses of bees have happened before. In 2004, beekeepers had trouble with struggling hives sent to California for pollinating almond trees. And in the 1960s and '70s, before the arrival of mites, beekeepers around the country reported disappearing bees. "It sounds for all the world like what happened last year," says Eric Mussen of the University of California, Davis. Even an article in a bee journal from 1897—long before synthetic pesticides—describes healthy hives collapsing within a week, with the queen still there.

Severe bee losses do appear to be a widespread problem (see map, p. 970). Some 29% of 577 beekeepers across the country reported CCD and losses of up to 75% of their colonies in the last 16 months, according to a survey run by Bee Alert Technology in Missoula, Montana. Losses range from 35% to 100% of hives in each operation. Other countries are also having problems with rapid losses of wild and domesticated honey bees. In Europe, beekeepers from Spain to near the Arctic Circle are reporting deaths or disappearances of their insects, but the symptoms aren't exactly the same as in the United States.

Still, honey bee researcher Nicholas Calderone of Cornell University says it's not clear that these collapses are something other than normal losses. "We're getting a lot of reports of CCD that are not narrowly defined," says entomologist Robert Danka of the USDA bee lab in Baton Rouge, Louisiana.

Rogues' gallery

Assuming that something new is occurring, researchers since January have investigated the usual suspects, including pesticides and other environmental chemicals. The main focus of Cox-Foster's working group is on nicotine-based compounds called neonicotinoids, which were first introduced as pesticides in 1992. One idea is that low doses interfere with a bee's ability to navigate back to the hive. And lab studies have shown that at least one such compound, imidacloprid, can kill bees at high doses.

There are few data that imidacloprid harms bees in fields, however. And other lines of evidence argue against blaming these pesticides. In 1999, France banned imidacloprid after beekeepers complained that it was causing up to 40% of their colonies to die. Yet the colonies don't seem to be doing much better now, notes Yves Le Conte of the Laboratoire Biologie et Protection de L'Abeille, INRA, in Avignon, France.

And in the United States, there has been no spike in imidacloprid usage that might account for the recent colony collapse. "Pesticides

can't be an explanation for why organic beekeepers are losing their colonies," Berenbaum says. The CCD working group has nevertheless sent samples of wax, honey, and pollen from hives to be tested by USDA food-testing labs for more than 200 chemicals, including fungicides, pesticides, and their metabolites.

To assess whether pathogens explain CCD, Cox-Foster and her colleagues have collected samples from Pennsylvania of bees remaining in collapsed hives, as well as bees from nearby hives that were healthy or declining. USDA researchers also went to California to get bees from afflicted hives; all told, members of the working group have begun to examine samples from more than 200 hives.

At the meeting, Cox-Foster presented some initial results. "We were shocked by the huge number of pathogens present in each adult bee," she says. The highly diverse array of teeming pathogens included bacteria that cause a condition known as American foulbrood, which turns bees gooey and smelly, a fungus that causes a disease called chalkbrood that turns the insects into white mummies, and four kinds of viruses.

Some researchers suspect that an infectious agent may be spreading between hives via the wax combs and other equipment used by beekeepers. In February, Pettis and his colleagues took combs from CCD-affected colonies in Florida and gamma-irradiated or fumigated some of them before inserting the combs into

hives with mite-free bees imported from Australia. Six weeks later, the scientists counted the number of missing brood cells as a measure of colony health. Because the hives with the irradiated combs had fewer missing brood than ones receiving untreated combs had, Pettis suspects pathogens as a possible cause of CCD.

Adding to suspicions that one or more new pathogens are behind CCD are the results from a team led by Ian Lipkin of the Mailman School of Public Health of Columbia University, which has been doing high-throughput DNA sequencing of bulk bee samples from strong, weak, and recovering colonies. The bees from CCD-afflicted colonies have bacteria, fungi, viruses, and parasites that don't match any known bee pathogens and are not in the healthy colonies, Lipkin says. Cox-Foster suggests that the discovery of so many kinds of pathogens in the collapsed colonies indicates that the bees in them, for whatever reason, have suppressed immune systems.

Yet contradictory results have just come in from bee researcher Jerry Bromenshenk of the University of Montana, Missoula, and Bee Alert Technology and his colleagues. In December, they collected samples from hives in Florida. Preliminary analysis by researchers at the U.S. Army's Edgewood Chemical Biological Center in Maryland found similar viral burdens in healthy, failing, and collapsed hives. "It doesn't seem to fit the idea of a suppressed immune system," Bromenshenk says.

Perhaps the most obvious suspect for CCD, the varroa mite, was also a matter of debate at the Maryland meeting. Mites don't seem to be the main problem, at least in California, says Pettis, because the weak colonies on average didn't have more mites than the strong colonies had. But others argued that mites shouldn't be ruled out yet. Marla Spivak of the University of Minnesota, Twin Cities, cautions that even if beekeepers eliminate a mite infestation, weakened colonies may be set to collapse later.

Dangerous diet?

Modern beekeeping itself, some suggest, puts the insects at risk. In the past 2 decades, as the United States started importing cheap honey from abroad, large beekeeping operations began to make more of their income from renting hives to farmers. California's almond growers, for example, pay a premium rate for pollination.

For bees, that means annual trips to California's central valley, where spring starts early

and can be cold and damp. In October and November, more than 1.2 million colonies are trucked into California from all across the country and put into holding yards. Hives are normally inactive during this time of year. But the colonies need to be jam-packed with bees when placed into the flowering almond groves in February, so beekeepers feed them a high-fructose sugar syrup. "They are trying to totally reset the natural cycle of bees," says Marion Ellis of the University of Nebraska, Lincoln. "It's throwing the bees' rhythms out of whack."

The syrupy diet may impair the bees' health, putting them on the verge of a colony collapse. "We can't raise feedlot bees," Ellis says. Pettis doesn't think the syrup is to blame but agrees that no one has hit upon a perfect nutritional formula yet. Last fall, USDA researchers compared two commercial



Outbreak? The large concentration of hives waiting to be placed in California almond groves could allow diseases to spread.

syrups and an experimental one, all designed to stimulate larger increases in bee colonies for almond pollination. None of the diets did the trick, but the experiment did confirm that bee numbers decreased if the insects weren't fed any supplements.

Contaminants in such syrups have also been an issue, Mussen notes. Last summer, beekeepers in California noticed that their syrup smelled and tasted wrong. Lab tests revealed that it had high levels of hydroxymethylfurfural (HMF), a compound that can be toxic to bees. But Hackenberg, who sells supplements, doubts that HMF was the problem. Bees will eat HMF-laced syrup, but last fall they weren't taking in any syrup or pollen supplements at all. "They just wouldn't eat the stuff," he says.

On the road again

Ellis and others suspect that the increased trucking of hives may also cause problems for bees. This concern is in part related to nutrition too; whereas bees in Nebraska, for example, used to spend winters in Texas with excel-

lent forage, now they head for California. An abnormally dry season there means fewer wildflowers and less nectar, which weakens the colonies. Mussen wonders whether that caused the problems for hives in California earlier this year. "As soon as they were taken off the almonds, they started going downhill," Mussen recalls. "They were not big, fat bees; they looked malnourished."

Ellis speculates that the physical movement of hives from state to state disturbs the colonies. And placing vast numbers of colonies in one part of California raises the risk of spreading diseases, he says. Mussen agrees on the latter possibility but points out that hives have been trucked around for many years, making that an unlikely explanation for the recent spurt of colony collapses.

The working group is testing the role of shipping using colonies from three large beekeeping operations. Two, including Hackenberg's, were hit by CCD, and one wasn't. In the experiment, 140 hives are staying in one place for honey production, while another 140 are being moved five times for various pollination jobs. At each point, bees will be sampled and sent to PSU and USDA for pathogen analysis.

Researchers at the Beltsville meeting agreed that the immediate top priority is better surveillance to establish the true incidence of colony collapse. They called for a \$2 million survey of bee health by USDA's Animal and Plant Health Inspection Service, which the agency had proposed last year but was not funded. Ultimately, researchers want to be able to predict and then prevent CCD. "We need practical bioassays for beekeepers—and to be able to tell them what to do in response," says vanEngelsdorp.

Despite the recent colony collapses, almond growers expect a bumper crop this year, says Marsha Venable of the Almond Board of California. But they've had to raise their payments for renting hives from \$50 a colony a few years ago to \$120 this spring. And with another 40,000 hectares of young almond trees that will need pollination in the next few years, the price will only go higher if the riddle of the abandoned hives isn't solved. Beekeepers, Pettis says, "aren't going to meet the demand without something changing."

Indeed, Hackenberg, who has spent the past months trying to rebuild his colonies, worries that another year like this one will put him out of business: "This is do or die."

—ERIK STOKSTAD

From: Jennings, Henry
Sent: Tuesday, May 29, 2007 10:47 AM
To: Schlein, Paul B
Subject: FW: bee die-off
[For Board Meeting...](#)

-----Original Message-----

From: Nancy Oden [mailto:cleaneearth@tds.net]
Sent: Friday, May 25, 2007 8:29 PM
To: Jennings, Henry
Subject: bee die-off

Dear Mr. Jennings - As Director of the Pesticide Control Board, Mr. Jennings, please warn all growers and individuals in the State of Maine to stop using pesticides containing imidacloprid or other neonicotinoids.

See
<http://www.mlive.com/news/kzgazette/index.ssf?/base/news-23/118002026916110.xml&coll=7#continue>,
 printed out below.

You know, as do we organic growers, that there are clean methods of growing all crops; the Pesticide Control Board should take its responsibility to the people of Maine seriously, and begin immediately to wean pesticide-dependent growers off these and other man-made poisons, all of which are intended to kill parts of Nature, but which harm much more than their intended victims.

Please read and disperse widely the below article. I have sent this e-mail to Governor Baldacci and a number of activists around Maine because we ALL need to worry about what happens to honeybees. Our food supply is at stake, not to mention Maine's economy.

Thank you for taking this seriously. Please do not allow these pesticides to be used in Maine; chemical growers have been appeased far too long. Time to do what's right. Thank you.

- Nancy Oden, Clean Water Coalition, 434-6228

<http://www.mlive.com/news/kzgazette/index.ssf?/base/news-23/118002026916110.xml&coll=7#continue>

Suspect in bee die-off: Insecticide Widely used bug spray may be behind deaths of millions of bees

Thursday, May 24, 2007

By Amy Ellis Nuttm Newhouse News Service

An insecticide is suspected of causing a "colony collapse" disorder that has killed millions of honeybees worldwide and up to half of the 2.5 million colonies in the United States.

The chief suspect, say many scientists, is imidacloprid, the most commonly used insecticide on the planet.

Honeybees come into contact with pesticides because they are needed to pollinate scores of crops, including apples, cherries, blueberries and other crops in southwestern Michigan. The die-off has been a major concern for farmers and scientists, who have been looking into potential causes, from

diseases and parasites to pesticides.

A member of a class of pesticides called neonicotinoids, imidacloprid is a synthetic derivative of nicotine and works by impairing the central nervous system of insects, causing their neurons to fire uncontrollably and eventually leading to muscle paralysis and death.

The potent chemical can be sprayed on plants or coated on seeds, which then release the insecticide through the plants as they grow.

Research has shown that in sublethal doses imidacloprid and other neonicotinoids can impair honeybees' memory and learning, as well as their motor activity and navigation. Recent studies have reported "anomalous flying behavior" in imidacloprid-treated bees, in which the workaholic insects simply fall to the grass or appear unable to fly toward the hive.

Imidacloprid was used on just a few specialty crops when it first came out, but its use has become much more widespread because of its effectiveness against a wide range of pests, said Mark Longstroth, Michigan State University Extension's district educator for fruit in southwestern Michigan.

It is also used by homeowners because "it's very safe for the mammalian system," he said.

Longstroth hasn't reviewed data on how imidacloprid is suspected to affect the honeybees, but he said implicating the chemical as the colony collapse culprit sounds plausible.

Launched in 1994 by Bayer AG, the German health-care and chemical company, imidacloprid is sold under various brand names, such as Admire, Advantage, Gaucho, Merit, Premise and Provado.

Page 2 of 2

It also is manufactured for use on flowers, lawns, trees, golf courses and even pets in the form of flea collars.

The product list soon could grow even longer. Last fall, Bayer announced findings indicating imidacloprid's ability to promote plant health even in the absence of infestation.

"These things (imidacloprid insecticides) do a great job on termites, fleas, ticks, but people forget honeybees are insects, too," said Jerry Hayes, president of the Apirary Inspectors of America and an entomologist with the Florida Department of Agriculture. In the mid-1990s, imidacloprid was implicated in a massive bee die-off in France in which a third of the country's 1.5 million registered hives were lost. After beekeepers protested, imidacloprid was banned for several uses, including treatment of sunflowers and corn seed.

The possibility that neonicotinoids are at the heart of the bee die-off implies a far more complex problem because of their widespread use. Every year these chemicals are applied to hundreds of millions of acres of agricultural lands, gardens, golf courses and public and private lawns

across the United States.

Their use on major crops nearly tripled between 1964 and 1982, from 233 million pounds to 612 million pounds of active ingredients. And since then, their use has exploded. By 1999, the U.S. Environmental Protection Agency reported 5 billion pounds of pesticides used on U.S. crops, forests, lawns, flowers, homes and buildings.

Because of imidacloprid's emergence as a primary player in pest management, a painful paradox has developed in the recent debate. Neonicotinoids are needed by farmers and growers to maintain the health of crops, many of which also require pollination by honeybees.

“Neonicotinoids are now the best aphid insecticide we have,” said Peter Shearer, a specialist in fruit tree entomology with the Rutgers Agricultural and Extension Center in Bridgeton, N.J. “It's very important to our pests that have shown resistance to other chemicals. It's very important to eggplants, potatoes, tomatoes.”

Shearer notes that apple farmers, for instance, don't use Provado, which has imidacloprid as an active ingredient, until after bees used for pollination are removed from the orchards.

“So it doesn't seem to be a logical route of bee die-off,” he said. “It would have to last 11 months.”

However, Shearer also acknowledges that some published studies indicate that imidacloprid can persist on both vegetation and in the soil for weeks, months and perhaps years.

Some U.S. entomologists who recently have been analyzing dead bees have found a remarkably high number of viruses and fungal diseases in the carcasses, leading them to suspect there may be other culprits besides neonicotinoids.

“I don't think there is one smoking gun,” Hayes said. “When neonicotinoids are used on termites, they can't remember how to get home, they stop eating, and then the fungus takes over and kills them. That's one of the ways imidacloprid works on termites -- it makes them vulnerable to other natural organisms. So if you look at what's happening to honeybees, that's pretty scary.”

Gazette staff writer Paula Davis contributed to this report. She can be reached at pdavis@kalamazoogazette.com or 388-8583.

more_on_death_of_bees_and_people_oden_6-7-07.txt

From: Jennings, Henry
Sent: Thursday, June 07, 2007 1:22 PM
To: Schlein, Paul B
Subject: FW: more on death of bees and people - important

For Board Packet...

-----Original Message-----

From: Nancy Oden [mailto:cleaneearth@tds.net]
Sent: Thursday, June 07, 2007 1:18 PM
To: Jennings, Henry; Governor
Subject: more on death of bees and people - important

<http://www.i-sis.org.uk/Parasiticfungi.php>

Director Jennings & Governor Baldacci - Further scientific studies See website above and printed article below) on how pesticides, acting to weaken immune systems (and bees are just the beginning), encourage parasitic fungi to attack the bees, killing them. This must stop.

It is your responsibility, Director of Pesticide Control Board Jennings, to stop the use of pesticides whenever and wherever possible. There ARE clean methods of eliminating unwanted plants, fungi, insects - we do not need, nor should anyone be using, toxic manmade chemicals.

Please begin to protect the people and wildlife, woods and waters of Maine, rather than pandering to the corporadoes who see nothing but dollar bills for themselves, while we subsidize them with our health, indeed, years of our lives.

What will it take for you to act? A massive spraying of children which shows up immediately, not years later as cancer or fertility problems? Human males, as well as males of other species, too, have been losing their sperm count at alarming rates. Every year the sperm count of human males, and wolves, whales, millions of other creatures, drops by several percentage points due to poisoning of the sperm by manmade chemicals, mostly pesticides.

YOU and the GOVERNOR are RESPONSIBLE, so long as you do nothing, for all this damage to us and future generations.

Soon money will not matter - we will be struggling to keep our bodily functions working in the face of the continued onslaught of pesticides and other industrial chemicals.

Do you want this on your conscience? Do you believe you will have to answer for your sins, someday, some way?

If you care about your souls, you WILL issue orders to stop poisoning the populace and all of Nature.

Please read the below article by public, rather than corporate, scientists. People are sick of being sickened. Stop it now.

- Nancy Oden, Clean Water Coalition, Jonesboro, Maine 04648
phone 434-6228

----- Original Message -----

From: <press-release@i-sis.org.uk>
To: <cleaneearth@acadia.net>
Sent: Thursday, June 07, 2007 9:49 AM
Subject: <http://www.i-sis.org.uk/Parasiticfungi.php>

> The intended recipient for this message is cleaneearth@acadia.net
> The Institute of Science in Society
> Science Society Sustainability
> <http://www.i-sis.org.uk>

>
> This article can be found on the I-SIS website at
> <http://www.i-sis.org.uk/Parasiticfungi.php>

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> =====
> ISIS Press Release 07/06/07

>
> Parasitic Fungi and Pesticides Act Synergistically to Kill
> Honeybees?

>
> Prof. Joe Cummins presents evidence that parasitic fungi can
> kill insects when low, otherwise non-lethal concentrations
> of pesticides are present

>
> Co-operating culprits

>
> Honeybees are facing an unparalleled threat from something
> that's causing them to leave their hives, never to return.
> Scientists call it "colony collapse disorder" (CCD) [1]
> (Mystery of Disappearing Honeybees, Sis 34). The major
> suspects in the murder of honeybees appear to be systemic
> insecticides (the neonicotinoid systemic pesticides used
> worldwide to treat seeds and crops), including genetically
> modified (GM) crops [1, 2] (Requiem for the Honeybee, Sis
> 34), parasitic fungi [3] (Parasitic Fungus and Honeybee
> Decline Sis 35), and radiation associated with wireless
> phones [4] (Mobile Phones and Vanishing Bees, Sis 34).

>
> It is unlikely, however, that the suspects act independently
> of one another, and there is evidence suggesting that
> parasitic fungi and pesticides interact synergistically in
> killing honeybees.

>
> Parasitic fungi for biocontrol enhanced by sub-lethal levels
> of neonicotinoid pesticide

>
> Parasitic fungi are used extensively as biocontrol agents.
> Fungal spores are applied in sprays or baits, and it has
> been observed that the parasites frequently interact
> synergistically with neonicotinoid pesticides, particularly
> imidacloprid, in killing insects. When the spores are
> delivered as a suspension together with low, non-lethal
> levels of the pesticide, the insect-killing activity of the
> fungal spores is significantly enhanced. The spores of
> *Beauveria bassiana* used to treat the brown leafhopper rice
> pest, when accompanied by a sublethal dose of imidacloprid,
> killed the pest earlier and in larger numbers [5].

>
> Read the rest of this article here
> <http://www.i-sis.org.uk/Parasiticfungi.php>

> Or read other articles on bees in the environment section

more_on_death_of_bees_and_people_oden_6-7-07.txt

> of the Institute of Science in Society website
> <http://www.i-sis.org.uk/scienv.php>
>
> =====
> This article can be found on the I-SIS website at
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> PO Box 51885, London NW2 9DH
>
> telephone: [44 20 8452 2729] [44 20 7272 5636]
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> For email details, see
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>
> --
> No virus found in this incoming message.
> Checked by AVG Free Edition.
> Version: 7.5.472 / Virus Database: 269.8.11/837 - Release Date: 6/6/2007
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From: Jennings, Henry
Sent: Friday, June 08, 2007 1:20 PM
To: Schlein, Paul B
Subject: FW: Bayer's Imidacloprid: Possible Culprit identified in Decline of Honeybees
[More Board Meeting Stuff...](#)

-----Original Message-----

From: Nancy Oden [mailto:cleaneearth@tds.net]
Sent: Friday, June 08, 2007 1:00 PM
To: Jennings, Henry
Subject: Fw: Bayer's Imidacloprid: Possible Culprit identified in Decline of Honeybees

----- Original Message -----

Sent: Friday, June 08, 2007 12:16 PM
Subject: Bayer's Imidacloprid: Possible Culprit identified in Decline of Honeybees

- [Protection of Bees: Open Letter to EU Commissioner of Health](#)
- [Bee-keepers and environmental groups demand prohibition of pesticide "Gaucho"](#)
- [French Institutes Finds Imidaproclid Turning Up in Wide Range of Crops](#)

The Star-Ledger (Newark, N.J.), May 28, 2007

Possible culprit identified in decline of honeybees

They are among the most sensitive and hardest-working creatures in nature. Ancient navigators of the air, honeybees are guided between hive and flower by the angle and direction of the sun. Their internal clock signals the time of day a particular flower's nectar is flowing. And daily changes in the earth's magnetic cycle alert those in the darkened hive to sunrise and sunset.

A mysterious ailment, however, is causing the great pollinators to lose their way home. The disorder, called "colony collapse," has resulted in the deaths of millions of honeybees worldwide and up to half of the 2.5 million colonies in the United States.

The chief suspect, say many scientists, is the most commonly used insecticide on the planet: imidacloprid.

"I grew up in the 1960s, and this reminds me of Rachel Carson's "Silent Spring,"" says Douglas Fisher, a New Jersey state legislator, referring to the 1962 book that warned the world about the long-term effects of agricultural chemicals on the environment.

Last week Fisher escorted New Jersey's secretary of agriculture, Charles M. Kuperus, to some hard-hit beekeeping operations in the legislator's Salem County district.

Launched in 1994 by Bayer, the German health care and chemical company, imidacloprid is used to combat insects such as aphids that attack more than 140 crops, including fruits and vegetables, cotton, alfalfa and hops. Sold under various brand names, such as Admire, Advantage, Gaucho, Merit, Premise and Provado, imidacloprid also is manufactured for use on flowers, lawns, trees, golf courses and even pets in the form of flea collars. The list soon could grow even longer. Last fall, Bayer announced findings indicating imidacloprid's ability to promote plant health even in the absence of infestation.

But while it is a successful insecticide, the chemical, in sublethal doses, may be wreaking havoc on honeybees' nervous systems. In the mid-1990s, imidacloprid was implicated in a massive bee die-off in France, in which a third of the country's 1.5 million registered hives were lost. After beekeepers protested, imidacloprid was banned for several uses, including treatment of sunflowers and corn seed. At the same time, beekeepers in Germany, Poland, Spain and Switzerland were suffering similar losses.

"These things (imidacloprid insecticides) do a great job on termites, fleas, ticks, but people forget honeybees are insects, too," said Jerry Hayes, president of the Apirary Inspectors of America and an entomologist with the Florida Department of Agriculture. "It amazes me the disconnect that chemical companies have - or are allowed to have - in terms of the effects (of pesticides) on good insects."

Honeybees come into contact with pesticides because insects are needed to pollinate scores of crops, such as apples, blueberries, cantaloupes, cranberries, cucumbers, pumpkins and watermelons.

Imidacloprid is one of the newer chemicals especially effective against a wide range of pests. A member of a class of pesticides called neonicotinoids, it is a synthetic derivative of nicotine and works by impairing the central nervous system of insects, causing their neurons to fire uncontrollably and eventually leading to muscle paralysis and death.

The potent chemical can be sprayed on plants, or coated on seeds, which then release the insecticide through the plants as they grow. In sublethal doses, however, research has shown that imidacloprid and other neonicotinoids, such as fipronil, can impair honeybees' memory and learning, as well as their motor activity and navigation. When foraging for food and collecting nectar, honeybees memorize the smells of flowers and create a kind of olfactory map for subsequent trips.

However, in laboratory and field studies, honeybees exposed to imidacloprid seem to wander off, which may explain, say scientists, why hives all over the world are turning up empty. Recent studies have reported on the "anomalous flying behavior" of imidacloprid-treated bees where the workaholic insects simply fall to the grass or appear unable to fly toward the hive.

In 2003, a French television documentary team filmed honeybee activity after exposure to imidacloprid. Clumsy and uncoordinated, their legs trembling, the bees looked like drunks unable to find the key to the front door of their hive. Others had trouble leaving the hive, seemed disoriented, and when they were eventually able to make their way out, soon disappeared, never to return.

The possibility that neonicotinoids are at the heart of the bee die-off implies a far more complex problem because of the widespread use of pesticides. Every year these chemicals are applied to hundreds of millions of acres of agricultural lands, gardens, golf courses and public and private lawns across the United States. Their use on major crops nearly tripled between 1964 and 1982, from 233 million pounds to 612 million pounds of active ingredients. And since then, their use has exploded. By 1999, the U.S. Environmental Protection Agency reported 5 billion pounds of pesticides used on U.S. crops, forests, lawns, flowers, homes and buildings.

Because of imidacloprid's emergence as a primary player in pest management, a painful paradox has developed in relation to the recent debate. Neonicotinoids are needed by farmers and growers to maintain the health of crops, many of which also require pollination by honeybees.

"Neonicotinoids are now the best aphid insecticide we have," said Peter Shearer, a specialist in fruit tree entomology with the Rutgers Agricultural and Extension Center in Bridgeton, N.J. "It's very important to our pests that have shown resistance to other chemicals. It's very important to eggplants, potatoes, tomatoes."

Shearer notes that apple farmers, for instance, don't use Provado, which has imidacloprid as an active ingredient, until after the bees, which are used for pollination, are removed from the orchards. "So it doesn't seem to be a logical route of bee die-off," he said. "It would have to last 11 months." However, Shearer also acknowledges that some published studies indicate that imidacloprid can persist on both vegetation and in the soil for weeks, months and perhaps years.

In France, there have been inconsistent results since the bans on imidacloprid went into effect. In 2005, for the first time in a dozen years, the French honey harvest improved, but only in certain regions, according to the country's beekeeping federation.

Some U.S. entomologists, who recently have been analyzing dead bees, have found a remarkably high number of viruses and fungal diseases in the carcasses, leading them to suspect there may be other culprits besides neonicotinoids. A 2004 University of North Carolina study, for instance, found that some neonicotinoids, in combination with certain fungicides, increased the toxicity of the "neonics" to honeybees a thousand-fold.

"I don't think there is one smoking gun," said Hayes. "When neonicotinoids are used on termites, they can't remember how to get home, they stop eating and then the fungus takes over and kills them. That's one of the ways imidacloprid works on termites - it makes them vulnerable to other natural organisms. So if you look at what's happening to honeybees, that's pretty scary."

Last week the five-state Mid-Atlantic Apiculture Research and Extension Consortium released a progress report on colony collapse disorder. Its findings included "the high prevalence of fungi in adult bees" which seemed "indicative of stress or a compromised immune system; these symptoms have never been previously reported."

Another entomologist at the Rutgers center, Gerald Ghidui, knows there is no simple answer to the problem. "They've been looking at this since the late 1990s," said the vegetable specialist. "They've done quite a few studies and they still can't find the direct link. Seventy-five percent of the vegetable crops in Arizona gets imidacloprid, but they have no problems with the honeybees right now. So why isn't it straight across the board? Everyone is in the dark over this."

Coalition against BAYER Dangers

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KEYCODE BAYER #151

Joint press release by the German Naturschutzbund NABU, the Coalition against BAYER-dangers and the Association of German Professional Apiarists

Bee-keepers and environmental groups demand prohibition of pesticide "Gaucho"

Death of bee-populations: "German Minister Renate Kuenast has a duty to act"

(Bonn/Berlin, July 21, 2004) German apiarists and environmental groups have demanded an interim prohibition of the pesticide Gaucho as well as further remedies containing the active agent Imidacloprid in Germany. Imidacloprid is under serious suspicion of being responsible for the dying of bee-populations in vast parts of Europe.

The Association of German Professional Apiarists (DBIB), the Naturschutzbund (NABU) and the Coalition against BAYER-dangers appealed to Federal minister for consumers Kuenast to withdraw the pesticide's permission unless all actual knowledge will be fully verified. "Kuenast has to follow the French government's example of removing from the market any pesticide which endangers bee-populations" claims Manfred Hederer, president of the Association of German Professional Apiarists.

The "Comité Scientifique et Technique", in charge of the French government, lately declared that the treatment of seeds with Gaucho produces a significant risk for bees. NABU's agricultural expert Florian Schoene on this: "On behalf of a provident protection of environment and consumers the admission of this substance in Germany also has to be verified".

Imidacloprid is produced by the Leverkusen-based BAYER corporation. In Germany it is used under the brand names Gaucho and Chinook mainly during the cultivation of rape, sugar-beets and corn. During the last years in Germany as well as in France almost 50 % of all bee-populations died. Also wild bees and other insects suffered from a significant loss of population during that time.

According to BAYER a study of the French governmental department AFFSA lately invalidated the complaints against Gaucho. This statement was refused by an AFFSA spokesman.

"With an annual turn-over of more than half a billion Euro Imidacloprid ranges among the most important products of BAYER. This is the reason why BAYER, despite serious environmental damage, is leading a "tooth & claw"- fight against any application prohibitions", said Philipp Mimkes, speaker of the Coalition against BAYER-dangers.

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KEYCODE BAYER #279

Open Letter, 16 November 2006

Mr Markos Kyprianou
Commissioner of Health and Consumer Protection
EUROPEAN COMMISSION, DG Health and Consumer Protection
B-1049 BRUSSELS

Pesticides and bees protection: the case of Imidacloprid, Fipronil, Thiamethoxam and Clothianidin

Dear Commissioner,

The signatories of this letter are representatives of beekeeper associations, consumers and environmental organisations. Moved by the current situation of beekeeping in Europe, they wish to share with you their concerns about the approval, or possible approval, by your Directorate General and by the Standing Committee for Food Chain and Animal Health (SCFCAH) of some active substances used in Europe for phytosanitary aims.

On July 7th 2006, Directive 2006/41/EC has indeed included clothianidin in Appendix I of Directive 91/414/EEC, allowing Member States to authorize products containing this active substance. Thiamethoxam has recently been approved by the Standing Committee and is now awaiting the final decision of the Commission. In addition, the documents related to inclusion of imidacloprid and fipronil to Appendix I are currently available through the EFSA website. It is thus possible to access the Draft Assessment Report (DRA) for both of these substances, and for one of them, fipronil, the conclusions of the Peer Review on the risk assessment.

Various reasons lead us to believe that Europe should abandon the inclusion of these substances in Appendix I. Having considered the particular nature of these substances, we have indeed some doubts on the conformity of their evaluation reports to the clauses of Directive 91/414/EEC and its appendix.

These compounds share some characteristics that, according to the clauses of the directive, fall under the following categories:

1. These substances are systemic.

Systemic treatments, which aim to address the entire plant, are liable to contaminate all its parts, including the flower. It is proven today, and nobody denies it, that the aforesaid active substances are present in the nectar and the pollen of plants coming from treated seeds. Besides, this fact is not ignored in the DRA of imidacloprid and fipronil. These substances are thus found in the food of bees and their brood.

2. These substances are neurotoxic.

The aforementioned substances are insecticides that have the effect of blocking some mechanisms of neurotransmission in the adult insect or in the larva. In very small doses (of about one part per billion -ppb) these compounds are able, without killing the insect, to cause behavioural disturbances (e.g. orientation errors) that could be deadly for the colony, whose survival relies on the integrity of the ability of its members.

3. These substances are persistent in the environment.

The documents appearing on the EFSA website state that worrying persistence occurs for imidacloprid and fipronil as well as for some of their metabolites. The same applies to clothianidin and thiamethoxam. This was somehow expected since the stability of these compounds is necessary for the systemic action supposed to last for the entire growing

period of the plant, namely several months. As the pesticides are widely used and may be used on all cereals, maize, sugar beets, potatoes (as spray), as well as on beetroot, oilseed rapeseed or sunflower, for several consecutive years and in a systematic rotation, we believe it is necessary to study the behaviour of the substances in the soil after several successive years of treatment, and the possible contamination of untreated flowering crops that have been grown in a soil being treated for several consecutive years.

4. These substances carry acute toxicity that is extremely strong for bees.

Directive 91/414/EEC foresees this situation. In fact, it requires that Member States assess the hazard quotient (HQ) of phytosanitary compounds for bees before authorising them. The HQ is given by the dose of substance applied per hectare and the acute toxicity for bees due to oral intake or to contact. When the HQ is higher than 50, complementary tests have to be produced, in order to fully appreciate the effects (of the product) on honeybee larvae, on honeybee behaviour, colony survival and development after use of the plant protection product according to the proposed conditions of use .

The toxicity of these molecules for bees is significant ; in fact when the HQ is calculated, it reaches surprising figures: for example, for imidacloprid, HQ by oral acquisition reaches 40 540; while it gets to 1852 by contact. For clothianidin, HQ by oral intake scores more than 10,000 .

For fipronil, HQs have not been calculated because they are considered not relevant – we will come back to this issue later. However, it is easy to calculate these quotients on the basis of the elements provided by the documents and the values obtained through oral intake fall between 7,194 and 11,990 depending on the considered crop. The HQ figures that we could see for the

compounds presented are of the same order of magnitude. Required tests on bee brood have not been carried out. Tests on the colony, considered as a system, are insufficient. In the imidacloprid and fipronil files, it is stated that HQ would not be a relevant index for seed coatings. On this point, we have the following remarks :

- This index, whether it is relevant or not, is the only one that appears in Appendix VI of Directive 91/414/EEC which requires these tests when the coefficient is greater than 50. Neither EFSA, nor the Member States have the liberty to decide whether to eliminate the measures¹⁰ that they consider irrelevant.
- Several scientific publications propose another safety index¹¹ for the products used to treat the seeds. If it appears that this coefficient is more relevant than the HQ, it is up to the Council to modify Appendix VI of the directive, in accordance with the article 18 of the directive. As long as the directive is not modified, the current version of the legislation must apply.
- It would indeed be unacceptable that some measures concerning bee protection appearing in the legislation be merely swept away because the safety coefficient is not relevant for seed coatings. Indeed, as we have seen above, seed coatings have an impact on bees, as the products in the coatings, on one hand, contaminate the bees and the reserves of the colony, and on the other are liable to seriously disturb bees behaviour, and thus to put in peril the survival of the colony, even at low doses.

Reading the reports brings up more remarks. The reliability of some results is questionable¹². In addition, conflicting scientific studies¹³ are available but not at all represented in the report. Therefore, we consider the risk assessment of these active substances insufficient, whilst many phytosanitary products based on these active substances are on the market and are used widely across the Member States.

For all the above mentioned reasons we ask that no molecule showing high toxicity (HQ>50) towards bees, and in particular, fipronil and imidacloprid, is registered in Appendix I of Directive 91/414/EEC as long as independent and validated tests have not shown the innocuousness of the product for bees, their brood, and the functioning of the colony

considered as a system.

The Clothianidin and Thiamethoxam cases must be reassessed on this basis.

The registration of these molecules in Appendix I is unacceptable if the potential toxicity of the treatments by seed coating has not been accurately evaluated. Moreover, we note that Member States are currently not able to conform to the clauses of Appendix VI when authorising the products containing these active substances. Yet, it is up to the European authority to avoid any decision that would encourage Member States to act in violation of the rules that it has itself prescribed.

The European Commission has to earn more public credibility that it is committed to guarantee a high level of environmental protection to its citizens. Moreover, the future of our bees, valuable indicators of the state of the environment, fundamental components to our agriculture through their pollination services, and living organisms that we have the responsibility to protect, is extremely important.

We would greatly appreciate if you would meet with us in the near future to discuss these matters further.

We look forward to hearing from you soon.

Yours sincerely,

AAPI – Associazione Apicoltori

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- Stavros Dimas, Commissionner, Environment
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- Commission of Environment of the European Parliament
- The Members of the Standing Committee on the Food Chain and Animal Health

KEYCODE BAYER #63

French Institutes Finds Imidaproclid Turning Up in Wide Range of Crops

New data from the French government's leading agricultural research institutes confirm that an imidacloprid-based pesticide produced by German chemical manufacturer Bayer is turning up in a wide range of crops, including those not treated with the product. However, the study does not provide evidence to back assertions by beekeepers that Bayer is thus responsible for the excessive mortality of honey bees seen in recent years.

The new data from the National Institute of Agronomical Research and National Center of Scientific Research is the latest element in a longstanding dispute between Bayer and French beekeepers and honey producers over the impacts of the company's Gaucho pesticide.

The farmers, joined by a variety of environmental groups, charge that bees are dying after feeding on sunflowers whose seeds were treated with Gaucho prior to planting, leading to major declines in honey production and potential impacts on other agricultural products. Bayer has long denied these claims, which it describes as "totally unfounded," and cites numerous studies from a range of independent research organizations that have failed to establish any "cause-and-effect relationship" between the use of Gaucho on sunflower seeds and subsequent bee mortality.

Nationwide Ban in 1999

France suspended the use of Gaucho in several agricultural regions in 1998, then implemented a complete nationwide ban in January 1999, pushing imidacloprid to the forefront of the debate on the use of agricultural chemicals. After lengthy studies, the agriculture ministry admitted in early 2001 that it was impossible to formally accuse Gaucho of any responsibility for the rising honeybee mortality rates. The ministry refused to rule out that the pesticide was completely innocuous for bee populations, however, calling for continuation of the sunflower ban through February 2003, pending additional study, but allowing a 10-year extension of sales approval for other crops.

The new joint French research project is unlikely to advance the debate. Government researchers found small quantities of imidacloprid present in flowers, pollen, and fruit of corn plants treated with Gaucho.

The researchers also found traces of imidacloprid in neighboring plants that were not treated by the pesticide. The study concludes that contamination rates "appear identical to those seen in sunflowers," but it does not weigh in on whether these rates are sufficient to cause honeybee mortality.

Observers say the new results will likely entrench farmers and Bayer in their respective positions for and against continuation of the sunflower ban.

By Lawrence J. Speer

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Is New Pesticide Less Than Bee-nign?



Written by Letitia Baldwin

Thursday, April 12, 2007

Blueberry Growers Concerned About Loss of Pollinating Honeybees

ELLSWORTH — Dave Hackenberg, a Pennsylvania commercial beekeeper whose bees have pollinated wild Maine blueberry crops for decades, was the first in the nation to report the mysterious disappearance of millions of honeybees this winter.

He is blaming a newer class of pesticides touted as being more environmentally benign.

Hackenberg, who has supplied beehives to Jasper Wyman & Son and other Maine wild blueberry growers since the 1960s, suspects neo-nicotinoids may have triggered "colony collapse disorder" and the mass abandonment of hundreds of thousands of bee colonies around the country this winter.

The insecticides, increasingly used to treat agricultural crops ranging from corn to wheat, are favored because they isolate specific pests.

Hackenberg, who is contracted to supply more than 10,000 beehives from his own stock and from seven other commercial apiaries next month to Jasper Wyman & Son, reports honeybees now are failing to return to their hives in some Florida citrus groves sprayed with neo-nicotinoids. Speaking this week from Florida, where his bees have been pollinating cantaloupe crops and he has been rebuilding his decimated stock, he says neo-nicotinoids break down bees' immune systems and cause memory loss and other side effects.

"It's something we've never seen before. It's just like someone swept the hives out with a sweeper," the 58-year-old beekeeper said by cell phone Monday while at work in the cantaloupe fields. "It's just astounding. It's mind-boggling."

Hackenberg's theory has not been proven but scientists are not pointing to another cause for the inexplicable loss of hundreds of thousands of colonies from 24 states across the country. Scientists note that bees are spending far greater time being trucked, which could strain their immune systems and make them more vulnerable to disease and toxic chemicals.

By week's end, Hackenberg heads to Pennsylvania where his colonies will pollinate apple crops before moving on to Maine in mid-May. His pollination fee has shot up from \$60 to \$90 per beehive to cover his \$350,000 loss and the subsequent cost of replacing two-thirds of his stock.

"Our concern about blueberries is about where we are coming from and what happens along the way," explained the 58-year-old commercial beekeeper, who is "flat out" refusing to pollinate any more agricultural crops treated with neo-nicotinoids. "We don't know what we're going to encounter before we get to Maine."

David Yarborough, a longtime blueberry specialist at the University of Maine, estimates Maine will need about 55,000 beehives to pollinate its 2007 wild blueberry crop. He says the Maine blueberry industry, consisting of about 500 growers, harvested 74.6 million pounds last year. The 2006 wild blueberry crop was valued at more than \$60 million.

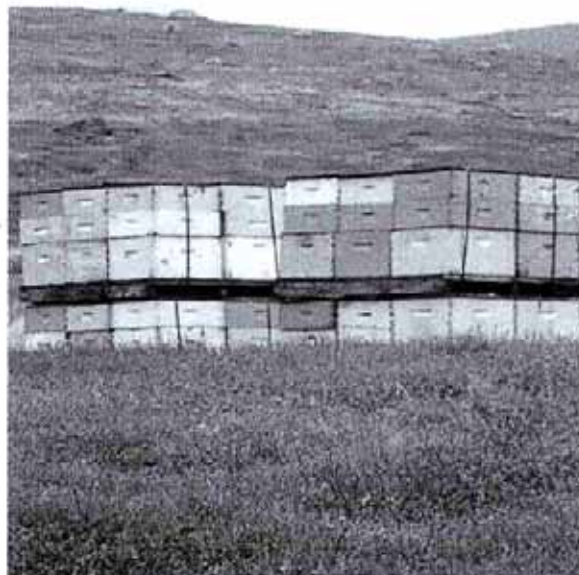
Yarborough expects beekeepers' pollination fees to rise, but doesn't foresee any impact on blueberry prices.

"How much you spend to grow blueberries doesn't have anything to do with how much you sell it for," he explained late last week.

Meanwhile Jasper Wyman & Son President Edward R. Flanagan is calling for legislators to allocate funds for in-depth studies into colony collapse disorder.

"The Farm Bill is up for renewal by September," noted Flanagan, speaking late last week from his Boston office. The bulk of the money usually goes to the biggest crops such as cotton, corn, soy and wheat. Our plea is to motivate them about money and make sure they allocate money."

Discuss this article on the forums. (0 posts)



Hives rented from commercial pollinators who bring bees to Maine from as far away as Texas await the season in an Orland field.—STAFF PHOTO BY TOM WALSH

Dr. Robert Jay Rowen's

SECOND OPINION

Vol. XVII, No. 5

May 2007

HEALTH NOTES

Three Nutrient Cocktail Can Significantly Reduce Migraines

Americans who suffers from migraine headaches, you know just how disabling they can be. I remember my days in the emergency room. Migraine sufferers would stagger in after their common painkillers failed. They were incapacitated and in obvious distress. The staff would take them into a room and inject powerful narcotics. About all we could do was drug out the pain. They went home and were told to sleep it off. Often they would come back. That's still about all that doctors can do for you even today. Migraine drugs have a miserable failure rate. But I've got great news. Researchers have found that two of my favorite and most recommended nutrients can help.

CoQ10 and thioctic acid, also known as alpha lipoic acid (ALA), are metabolic enhancers. That means that they improve your metabolism. You may know about CoQ10 for its role in energy production and heart function. And ALA is just terrific for promoting your all-important glutathione detoxification pathways. Turns out both may help you with your migraines.

One study followed 1,550 pediatric and adolescent patients aged 3-22. These subjects had frequent migraine-type headaches. Interestingly, 74.6% of the subjects had low levels of plasma CoQ10 levels. Of these, about one-third were actually below the reference range of 0.21-1.77mcg/mL.

The researchers then gave these patients supplemental CoQ10 (liquid gel

(Continued on page 2)

A Mysterious Killer of Honeybees Threatens Our Food Supply

Albert Einstein once said, "If the bee disappeared off the surface of the globe, then man would have only four years of life left." Why? Because without bees, plants don't get pollinated. Without pollination, say goodbye to fruit, nuts, and some vegetables. We also won't have natural oils (such as olive oil, sunflower oil, hemp oil, etc.). And we don't have many natural fibers, such as cotton.

You can see how important the bee is to our livelihood and existence. Some economists say the bee is worth about \$14 billion to our economy.

That's why I was so alarmed to read the latest statistics from the American Beekeeper Federation. According to their latest report, there's been an unexplained collapse of beehives in the country, with entire colonies being wiped out.

"During the last three months of 2006, we began to receive reports from commercial beekeepers of an alarming number of honey bee colonies dying in the eastern United States," says Maryann Frazier, apiculture extension associate at Penn State University. While the problem didn't start last year - it's been going on for several years - it is getting progressively worse. And it's not limited to the East Coast any more.

"Since the beginning of the year," she continued, "beekeepers from all over the country have been reporting unprecedented losses. The losses are staggering: one beekeeper lost 11,000 of his 13,000 colonies; another 700 of 900; another 2,500 of 3,500; another virtually all of his 10,000." The problem is so large, beekeepers are starting to wonder if their industry can survive.

Frazier calls the die off "Colony Collapse Disorder"

HEALTH NOTES ... *continued*

preparation) at a dose of 1-3 mg per kilogram of body weight. That's about 100-200 mg for an average-sized adult. Of these, the researchers measured 250 of them at follow-up about three months later.

Supplementation raised their plasma levels to an average of 1.2 mcg/mL. And the number of migraines likewise significantly fell from 19.2 days per month to 12.5 days per month. Headache disability improved from 47.4 to 22.8 (as assessed by a standardized scale), and 46.3% of patients experienced a 50% reduction in headache frequency. These numbers together make me wonder if migraines might be a marker for physiological CoQ10 deficiency.

As for ALA, researchers studied 44 patients in a randomized controlled trial. They gave the patients 600 mg of ALA or a placebo for three months. The proportion of subjects who experienced a 50% improvement in headaches was not significantly different between the groups. However, the researchers looked within the groups for more specific results. And they found some solid results! Specifically, migraine frequency, the number of days with headaches, and the severity of headaches were all significantly reduced in the ALA group.

This is great news. Here are two totally safe nutrients that could give you significant benefit. And remember, these studies were separate, so the researchers gave the

... (Continued on page 3)

SECOND OPINION (ISSN 1068-2953) is published monthly by Second Opinion Publishing, Inc. **PUBLISHER:** Wallis W. Wood; **EDITOR-IN-CHIEF:** Robert Jay Rowen, MD; **SUBSCRIPTIONS:** \$49 per year; foreign addresses add \$13 U.S. per year. Send new subscriptions or changes of address to our **BUSINESS OFFICE:** P.O. Box 467939, Atlanta, GA 31146-7939, 800-728-2288 or 770-399-5617. **SECOND OPINION** is a newsletter containing general comments on health, nutrition, and medicine. Readers are advised to consult with their own physician before implementing any health idea they read about, whether here or in any other publication. Copyright © 2007 by Second Opinion Publishing, Inc. All rights reserved.

or CCD. What could be causing CCD? Dennis van Engelsdorp is acting state apiarist with the Pennsylvania Department of Agriculture. He says, "Preliminary work has identified several likely factors that could be causing or contributing to [the die off]. Among them are mites and associated diseases, some unknown pathogenic disease and pesticide contamination or poisoning."

In other words, they don't know what's killing the bees. There's an "unknown" killer of honeybees that threatens the nation's entire food supply. Yes, pesticides, disease, and mites probably play a role. But there's an underlying cause of CCD that nobody's willing to talk about. It can lead directly to the death of the bees. Or it can weaken the bees enough that they are more susceptible to the pesticides, disease, and mites. Let me explain.

We've see evidence of a die off here in California. We have some very nice, mature peach and plum trees in our backyard. When I first moved to California in 2001, these trees produced wonderful fruit every year.

But something strange began in my third year here. The larger of the two peach trees did not fruit at all. And the plums soon petered out as well. The trees looked healthy, but I was mystified. They had produced awesome displays of blossoms in the spring. "Why didn't they fruit out?" I wondered.

As I write this, it's early spring, and the trees are in full bloom. But something's missing. I've gone out for hours each day and the bees that should be prancing in the pollen – just aren't there! Last year, our mature olive tree produced only one olive, in contrast to buckets of olives two years before. My neighbor also has fruit trees. He told me he's seeing the same thing. "We should have bees all over our property right now," he told me. "This year, none."

Afraid we would lose an entire year of fruit production, I went into the Santa Rosa farmer's market to ask for some help from a local beekeeper and honey distributor. He said his bees had not suffered nearly as much as everyone else's.

"What's the difference?" I asked. He said, "most beekeepers feed their bees a 'sugar water' syrup, but I don't feed mine that."

Here's the rub: "Sugar water" nowadays means high fructose corn syrup. And nearly 100% of non-organic corn is genetically modified (GM)!

Most genetically modified corn contains Bt genes. Bt

is a pesticide. Its gene is inserted into corn DNA so the corn can produce Bt to kill bugs that eat the corn.

But this couldn't explain the widespread loss of bees. Not all beekeepers feed their bees. And bees don't pollinate corn. So all of them aren't dying from genetically modified corn or corn sweetener.

What about flowering plants they do visit, such as cotton? The Bangkok Post on November 17, 1997 reported some worrisome news. Some 30% of bees in the vicinity of a trial of Bt cotton in Thailand died.

Picking up on this, a leading German zoologist conducted a four-year study on bees picking up pollen from genetically modified rapeseed (aka canola oil). Professor Hans-Hinrich Kaatz then examined the microorganisms in the intestinal tubes of the young bees. He found that when the bee ingested the alien gene, the gene that was in the pollen was transferred to bacteria living inside its gut.

His quote is alarming: "The results indicate that we must assume that changes take place in the intestinal tubes of people and animals. The crossover of microorganisms takes place and people's make-up in terms of microorganisms in their intestinal tract is changed. *This can therefore have health consequences*" (emphasis added).

But it's not just vague "health consequences." It can have deadly consequences, as we're seeing with the bees.

And the problem is only going to get worse. I was talking to a local beekeeper named Glenn, who came over to help my neighbor and us pollinate our trees. Glenn told me of the bitter fight the local beekeepers had with the agribusiness interests over genetically modified organisms (GMO). The Big Agri company Monsanto had bamboozled the farm owners into believing that they couldn't compete without GMO. The beekeepers told the farmers that their farms might go under if the bees were wiped out. Monsanto still won.

The split was divisive between the sides. The bad blood caused the beekeepers to vacate their business offices that they had previously shared with the farm owners. In a subsequent election, I was shocked when conscientious Sonoma County voted to permit GM crops. We were deluged with mailings from Monsanto interests.

Glenn believes it's a combination of new things that are weakening the gene pool of the bees. Bees never had experienced pesticides and GM-associated substances before. Feral (wild) bees tend to be very hardy creatures. But we're now seeing them disappear as well.

HEALTH NOTES ... continued

nutrients separately. They should work even better together.

Yes, the CoQ10 study was conducted on younger people. But go back and note that almost 75% had low levels. And a significant number were below the already low reference range. I'm sure that this information is applicable to anyone at any age that's got a deficiency. I can't wait for feedback from migraine sufferers on combining the two. You might also add riboflavin (vitamin B2) at 400 mg per day. ~~Other research has shown it can safely reduce migraine frequency up to 68%.~~

My favorite brand of ALA is actually called Thioctic Acid, from Cardiovascular Research. I've used it with enthusiasm since I first learned of it in 1988. It's available from many health food stores and Vitamin Shoppe (www.vitaminshoppe.com).

If you decide to combine these two, or even add the high dose riboflavin, please let me know about your progress so that I can inform other readers.

Ref: *The Journal of Head and Face Pain*, 2007; 47(1): 52-57; *Headache*, 2007; 47(1): 73-80; *Neurology*, 1998;50:466-70.

The Only Diet Pill I Can Recommend

I have huge news for you. It's about one of my favorite nutrients. Turns out you just might be able to have your cake and eat it too — and I mean literally.

Just when you think the news about resveratrol can't get better, it does. Researchers have found that this incredible plant-made chemical combats obesity and aging. They conducted the study at Harvard and on mice. But the benefits are very likely to spill over into humans. Our hormonal and energy physiology are virtually the same. I think you'll agree with me that resveratrol is one powerful nutrient.

The new study (*Nature*, online 11-1-06) set out to determine the effects of resveratrol on overfed mice. Researchers took three groups of middle-aged mice (52

(Continued on page 4)

HEALTH NOTES ... continued

weeks old). They fed the mice either: a standard mouse diet, a high-calorie (fat) diet, or a high-calorie (fat) diet supplemented with resveratrol.

By 60 weeks of age, the mice fed resveratrol enjoyed a three to four month lifespan advantage compared to the high-calorie group without the nutrient. (That's huge for mice!) By "old age," 114 weeks, 50% of the high-calorie mice had died compared to only 33% in the resveratrol group.

You know that insulin resistance is a major cause of premature aging and death. The high-calorie mice had increased insulin production, insulin-like growth factor (possible cancer promoter), and glucose levels as expected. Their levels of these aging markers were higher than the fat mice that also received resveratrol. Sound good? It gets even better.

The researchers studied the heart tissues of all three groups. Compared to the high-calorie alone group, there were far less fatty lesions, degeneration, and inflammation in both the standard diet group and the group taking resveratrol. But the degeneration and inflammation were even better in the resveratrol group than the standard diet on a degeneration scorecard. The high-calorie group (no resveratrol) scored 3.2. The regular diet group scored 1.6. And the high-fat diet supplemented with resveratrol scored the best at 1.2.

Rafael de Cabo, Ph.D., from the National Institute on Aging (NIA), virtually admitted that you can have your cake and eat it too. "After six months, resvera-

(Continued on page 5)

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Glenn referred me to fellow beekeeper and former Sonoma Beekeeper Association President Kathy Cox. She echoed the same message. Commercial beekeepers use chemicals in their hives. As a result, bees are facing a threat they have never seen before. Kathy told me, "My associate, Scott Nelson reported, 'In the four county area (Napa, Mendocino, Marin, and Sonoma), Mendocino beekeepers have reported the fewest problems with their hives.'" Mendocino County voted for a GMO ban in 2004. The county actually defeated Monsanto, which spent megabucks to try to defeat the proposition.

Kathy says that bees require a protein-rich diet, as found in pollen. GMO can derange their immune systems with a cascade of proteins they've never before encountered. The changes can wreak havoc on their bodies and the hives.

All I've discussed in this issue is the pesticide Bt. But there are other GMO agents in pollen that are foreign to the bees. Any one of them could weaken their immune systems. They could become vulnerable to almost anything, including the mites researchers know are ravaging some hives.

Are we facing a collapse of our food production thanks to the destruction of our friendly pollinators? I can't tell you for sure that GM crops are killing all of the honey bees. It's possible there are other factors. But I can tell you the GM crops are a major contributor to the problem. And we just don't know how widespread it will become. Seeing the problem firsthand and knowing it's happening around the country has me downright scared.

If it's half as bad as it sounds, it's not just our backyard that will be barren. Your supermarket and refrigerator will be barren as well. I predict that GMO will make the Vioxx scandal seem puny. (Merck deliberately allowed tens of thousands to die by Vioxx knowing its harm to the circulation system.)

I believe that GM crops are the greatest threat to our planet that we have ever seen. I fear a calamity of Biblical proportions may be in its early stages. I hope that I am wrong. But I hope you see how important this is.

Years ago, scientists from all over the world urged all governments to suspend all environmental releases of GM crops and to ban patents on organisms, seeds, and cell lines. If you still have doubts of the crisis, please visit the website www.i-sis.org.uk/list.php. Also see www.seedsofdeception.com. You won't have any more doubts.

I urge you to contact your elected officials and demand an immediate moratorium on planting GM crops until it can be proven that friendly insect populations aren't disrupted by GMO. Demand that all GM crops be so labeled on store shelves. Please buy organic only. Tell Monsanto how you feel by withholding your dollars from all their products. DO NOT consume any non-organic corn products (chips, tortillas, etc.) or processed items made with corn sweetener (high fructose corn syrup). You could ingest the transforming Bt gene. I eat out less and less. And when I do, I attempt to frequent only organic restaurants.

I also think legislation must be passed holding corporations and their stockholders financially and legally responsible for all damages that result from escape of their "patented" genes. After all, if they can receive the benefit of riches from a patent for their deeds, they should also have the duty to pay the piper when problems come up.

If I were to inadvertently poison you, I would be held criminally responsible. And so should they! If my dog were to escape and bite you, I would be responsible. When their pollen "escapes" and/or "bites" my field or kills my bees, should not their patented gene profits pay for it? If Monsanto stockholders knew that they could be personally responsible for your death when you become a Bt factory, we will suddenly see a newfound consciousness.

I do assure you problems are coming, whether it's the end of honeybees or a parallel GMO calamity. (I wish Albert Einstein were alive today. I have no doubt he would travel to Washington to warn of the impending calamity, as he did regarding Nazi atomic research.)

Please join me in this fight for our food. Call your Congressman, Senator, and state representatives today! The easiest way to contact your representatives is to visit the websites www.house.gov/writerep/ (for the House) and www.senate.gov/general/contact_information/senators_cfm.cfm (for the Senate). Both allow you to search (by zip code in the case of the House) for your representatives. They give phone numbers and addresses for both DC and local offices. They have web forms you can fill out and send for easy contact. And you can even schedule an appointment with some. If you don't have a computer, please borrow a friend's or visit your local library. The librarian can help you find these web pages. It's vital you do this today!

Ref: American Beekeeping Federation online, February 2007.

HEALTH NOTES ... continued

resveratrol essentially prevented most of the negative effects of the high-calorie diet."

In essence, resveratrol has the ability to fool the body into thinking it's getting a low-calorie diet. It does so without any negative side effects. And plenty of positive side effects. Calorie restriction reduces the hormone of aging and death — insulin. Resveratrol seems to provide the same benefit as calorie restriction even when you overeat!

How much should you take? In one study, the mice were given the amount that might be found in 750-1,500 bottles of red wine. Can you get that much resveratrol without drinking all that wine? You sure can. My calculations suggest that 1,000 bottles of red wine will contain about 400 mg of resveratrol. Most supplements are in the 50-100 mg range. I don't think you need 400 mg. I think one capsule twice daily will get you about everything you need, unless, of course you are eating a mostly fat diet. Then you might want to take more (up to four capsules daily).

Why Some People Gain Weight and Others Don't

Have you ever wondered why the person sitting next to you can eat twice as much as you, yet is half your weight? For some, weight simply isn't an issue.

I've had a hunch for a long time that these folks were less able to make use of the calories they eat than those who do gain weight. Well, wouldn't you know, scientists say there's now proof of this. And it boils down to the bacteria in your gut.

While I agree the bacteria in your gut have a lot to do with your weight and metabolism, there's more to this than the researchers are seeing. Let me explain.

The researchers did a study where they followed both mice and humans. They showed that obese subjects in both species have more bacteria called firmicute than the lean subjects. Conversely, bacteria called bacteroidetes were more abundant in normal weight subjects.

(Continued on page 6)

Report: Students exposed to pesticides used near schools

POSTED: 9:51 p.m. EDT, May 15, 2007

Story Highlights

- AP discovers schoolchildren are being exposed to pesticides in several states
 - Pesticide industry says it is committed to safety
 - No federal law specifically forbids pesticide spraying near schools
 - Eight states allow buffer zones to protect schools from pesticide spraying
 - Effects of repeated, small exposures on children are unclear
-

STRATHMORE, California (AP) -- On Grandparents Day, Domitila Lemus accompanied her 8-year-old granddaughter to school. As the girls lined up behind Sunnyside Union Elementary, a foul mist drifted onto the playground from the adjacent orange groves, witnesses say.

Lemus started coughing, and two children collapsed in spasms, vomiting on the blacktop.

She and the little girls have since recovered without apparent lasting effects.

But an Associated Press investigation has found that over the past decade, hundreds, possibly thousands, of schoolchildren in California and other agricultural states have been exposed to farm chemicals linked to sickness, brain damage and birth defects. The family of at least one California teenager suspects pesticides caused her death.

There are no federal laws specifically against spraying near schools, and advocates say California and the seven other states that have laws or policies creating buffer zones around schools to protect them from pesticides don't do enough to enforce them.

"The regulations are inadequate. In the vast majority of cases, people who didn't follow the laws received at best a \$400 fine," said Margaret Reeves, a scientist with the Pesticide Action Network, a nonprofit organization based in San Francisco.

The pesticide industry says it is committed to safety, and regulators say they are doing their best to enforce the laws.

"Everyone wants to protect children," said California Department of Pesticide Regulation spokesman Glenn Brank. He said his agency is doing what it can to enforce the law with a shortage of agricultural inspectors.

In the Strathmore incident last November, grandparents said the spraying was being done less than 150 feet from the children. Tulare County authorities fined an unlicensed pest removal company \$1,100 for spraying a restricted weed killer that morning. But no action was taken over what witnesses said happened to the children.

Because no one reported the incident as a case of pesticide drift, county agricultural inspectors never swabbed the jungle gym or took grass samples, making it impossible to establish whether pesticide had, in fact, drifted onto the playground.

The Environmental Protection Agency does not keep comprehensive national figures on students and teachers sickened by drifting pesticide.

In California, the No. 1 farm state and the one with the best records, there were 590 pesticide-related illnesses at schools from 1996 to 2005, according to figures given to the AP by the state. More than a third of those were due to pesticide drift, the figures show. Activists say that those numbers are low and that many cases are never even reported.

In California's long, flat interior, spraying season lasts seven months, from March through September. When citrus trees blossom and grapevines climb trellises, Lemus prays to the Virgin Mary that her granddaughter won't come home with her eyes watering and head pounding, unable to breathe.

Tulare County, where she lives, is one of the nation's most fertile farm regions, with more than half the schools within a quarter-mile of agricultural fields, according to the nonprofit Center on Race, Poverty and the Environment.

As suburbs push close to farmland, the rate of pesticide poisoning among children nationwide has risen in

recent years, according to a 2005 study in the Journal of the American Medical Association. The study found that 40 percent of all children sickened by pesticides at school were victims of drift -- pesticide carried on the breeze.

Research on pregnant women exposed to common pesticides has suggested higher rates of premature birth, and poor neurological development and smaller head circumferences among their babies.

The effects on children of small, repeated exposures over a long period of time are unclear, said University of California, Berkeley epidemiologist Brenda Eskenazi.

But acute pesticide poisoning can cause nausea, blurred vision, an abnormally fast heart rate, paralysis and death.

Chrissy Garavito, a 15-year-old high school sophomore, died in Fontana in 1997 of a heart rhythm disturbance her mother believes was triggered by exposure to chemicals sprayed at the school. Authorities never confirmed that pesticides contributed to her death.

In 2001, pesticide poisoning nearly killed Elena Dominguez, then a sixth-grader in Wenatchee, Washington.

One day, after playing Frisbee during gym class across the street from an apple orchard, she passed out at her desk.

"She was in a stupor," said her mother, Cindy Dominguez. "She couldn't talk, her eyes were rolling back in her head."

Emergency room doctors dismissed Elena's abnormally fast heart rate as a symptom of dehydration, gave her intravenous fluids and sent her home. Three weeks later, it happened again.

"I was at a track meet and all of a sudden I felt really, really tired," said Elena, now 18. "I made it to the finish line and just fell over."

Investigators found her clothes were soaked in the pesticide Endosulfan I; it had been picked up from residue on the grass and absorbed into her bloodstream through her skin. Officials later found five other pesticides on school grounds and fined the apple grower for forging his applicator's license.

The Dominguez family sued the orchard owner and the Wenatchee school district, which established rules requiring students to stay inside after a spraying, among other things. State officials believe it is the only district in Washington with such limitations.

But keeping students inside may not be enough. Two years ago, 600 students and staff members were evacuated from an Edinburg, Texas, elementary school after pesticides drifted from a cotton field into the school's air conditioning system. Thirty-nine people developed nausea and headaches.

EPA officials say they have no real idea how often pesticides waft onto school grounds. The EPA must register pesticides before they are sold, but federal law does not restrict where they can be sprayed.

"We implement the laws that Congress gives us," said Ruth Allen, an EPA epidemiologist.

Once the EPA approves a product, federal law requires manufacturers to report any "unreasonable adverse effects on the environment of the pesticide" that their products cause. Activists say industry is essentially allowed to police itself.

CropLife America, a national organization representing suppliers of farm pesticides, said their use near schools is well-regulated.

"We're really committed to public safety," said spokeswoman Donna Uchida. "Any kind of use of a pesticide has a labeling requirement that is imposed to protect human health and the environment."

California has some of the strictest pesticide laws in the nation. Under state law, growers and pest control companies can be fined if pesticide drifts from a field and sickens people.

A 2002 state law allows county authorities to establish a no-spray buffer zone of a quarter-mile around schools. But Tulare County has not done so. State officials said they did not know how many counties have set up such buffer zones.

Lemus and environmentalists are pushing for pesticide-free zones throughout California.

"Why don't they tell us they'll spray beforehand so we can bring our children inside?" Lemus said.

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May 7, 2007

Conception Date Affects Baby's Future Academic Achievement

INDIANAPOLIS — Does the time of year in which a child is conceived influence future academic achievement? Yes, according to research by neonatologist Paul Winchester, M.D., Indiana University School of Medicine professor of clinical pediatrics. Dr. Winchester, who studied 1,667,391 Indiana students, presents his finding on May 7 at the Pediatric Academic Societies' annual meeting.

Dr. Winchester and colleagues linked the scores of the students in grades 3 through 10 who took the Indiana Statewide Testing for Educational Progress (ISTEP) examination with the month in which each student had been conceived. The researchers found that ISTEP scores for math and language were distinctly seasonal with the lowest scores received by children who had been conceived in June through August.

Why might children conceived in June through August have the lowest ISTEP scores? "The fetal brain begins developing soon after conception. The pesticides we use to control pests in fields and our homes and the nitrates we use to fertilize crops and even our lawns are at their highest level in the summer," said Dr. Winchester, who also directs Newborn Intensive Care Services at St. Francis Hospital in Indianapolis.

"Exposure to pesticides and nitrates can alter the hormonal milieu of the pregnant mother and the developing fetal brain," said Dr. Winchester. "While our findings do not represent absolute proof that pesticides and nitrates contribute to lower ISTEP scores, they strongly support such a hypothesis."

"I believe this work may lay the foundation for some of the most important basic and clinical research and public health initiatives of our time. To recognize that what we put into our environment has potential pandemic effects on pregnancy outcome and possibly on child development is a momentous observation, which hopefully will help transform the way humanity cares for its world," said James Lemons, M.D., Hugh McK. Landon Professor of Pediatrics at the IU School of Medicine. Dr. Lemons is director of the section of neonatal-perinatal medicine at the IU School of Medicine and at Riley Hospital for Children of Clarian Health in Indianapolis.

Nitrates and pesticides are known to cause maternal hypothyroidism and lower maternal thyroid in pregnancy and are associated with lower cognitive scores in offspring. "We have now linked higher pesticide and nitrate exposure in surface water with lower cognitive scores. Neurodevelopmental consequences of exposure to pesticides and nitrates may not be obvious for many decades," said Dr. Winchester.

Collaborating with Dr. Winchester on this study, which was funded by the Division of Neonatology of the Department of Pediatrics of the IU School of Medicine, were Jun Ying, Ph.D. of the University of Cincinnati, Wesley Bruce, M.S. of the Indiana Department of Education and Janetta Matesan, B.S., of the IU School of Medicine.

The May 7 meeting is sponsored by the American Pediatric Society, the Society for Pediatric Research, the Ambulatory Pediatric Association, and the American Academy of Pediatrics.

For more information read: [Premature Births May be Linked to Seasonal Levels of Pesticides and Nitrates in Surface Water](#)

www.medicine.indiana.edu/news_releases/viewRelease.php4?art=685

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May 7, 2007

Premature Births May be Linked to Seasonal Levels of Pesticides and Nitrates in Surface Water

INDIANAPOLIS — The growing premature birth rate in the United States appears to be strongly associated with increased use of pesticides and nitrates, according to work conducted by Paul Winchester, M.D., professor of clinical pediatrics at the Indiana University School of Medicine. He reports his findings May 7 at the Pediatric Academic Societies' annual meeting, a combined gathering of the American Pediatric Society, the Society for Pediatric Research, the Ambulatory Pediatric Association and the American Academy of Pediatrics.

Dr. Winchester and colleagues found that preterm birth rates peaked when pesticides and nitrates measurements in surface water were highest (April-July) and were lowest when nitrates and pesticides were lowest (Aug.-Sept.).

More than 27 million U.S. live births were studied from 1996-2002. Preterm births varied from a high of 12.03% in June to a low of 10.44% in September. The highest rate of prematurity occurred in May-June (11.91%) and the lowest for Aug-Sept (10.79%) regardless of maternal age, race, education, marital status, alcohol or cigarette use, or whether the mother was an urban, suburban or rural resident. Pesticide and nitrate levels in surface water were also highest in May-June and lowest in August –September, according to the U.S. Geological Survey.

For the past four years, Dr. Winchester and colleagues have focused attention on the outcomes of pregnancy in Indiana and the United States in relation to environmental pesticides and nitrates in surface and drinking water. Last year at the Pediatric Academic Societies' annual meeting, Dr. Winchester reported that birth defects peak in Indiana and in the United States as a whole during April through July, the same months as pesticides and nitrates reach their maximum concentrations in surface water. This year's presentation expands upon that work.

"A growing body of evidence suggests that the consequence of prenatal exposure to pesticides and nitrates as well as to other environmental contaminants is detrimental to many outcomes of pregnancy. As a neonatologist, I am seeing a growing number of birth defects and preterm births, and I think we need to face up to environmental causes," said Dr. Winchester, who is also director of Newborn Intensive Care Services at St. Francis Hospital in Indianapolis.

"Preterm births in the United States vary month to month in a recurrent and seasonal manner. Pesticides and nitrates similarly vary seasonally in surface water throughout the U.S. Nitrates and pesticides can disrupt endocrine hormones and nitric oxide pathways in the developing fetus," he said.

"I believe this work may lay the foundation for some of the most important basic and clinical research and public health initiatives of our time. To recognize that what we put into our environment has potential pandemic effects on pregnancy outcome and possibly on child development is a momentous observation, which hopefully will help transform the way humanity cares for its world," said James Lemons, M.D., Hugh McK. Landon Professor of Pediatrics at the IU School of Medicine. Dr. Lemons is director of the section of neonatal-perinatal medicine at the IU School of Medicine and heads the Riley Hospital for Children of Clarian Health's section of neonatal-perinatal medicine.

Collaborating with Dr. Winchester on this study were Akosua Boadiwaa Adu-Boahene and Sarah L. Kosten of the IU School of Medicine, Alex K. Williamson of the U.S. Geological Survey, and Ying Jun, Ph.D. of the University of Cincinnati. The work was funded by the Division of Neonatology, Department of Pediatrics of the IU School of Medicine.

For more information read: Conception Date Affects Baby's Future Academic Achievement
www.medicine.indiana.edu/news_releases/viewRelease.php4?art=686

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Studies Line Up on Parkinson's-Pesticides Link

April 23, 2007 — By Maggie Fox, Reuters

WASHINGTON -- Evidence that pesticides can cause Parkinson's disease is stronger than it has ever been after a meeting of experts who have put together links in animals and people, scientists say.

One study shows that farm workers who used the common weedkiller paraquat had two to three times the normal risk of Parkinson's, a degenerative brain disease that eventually paralyzes patients.

A second study shows that animals exposed to paraquat have a build-up of a protein called alpha-synuclein in their brains. This protein has been linked to Parkinson's in the past.

A third piece of the puzzle shows that this buildup of protein kills the same brain cells affected in Parkinson's.

"All of these pieces really look like they are coming together now," Dr. William Langston, founder of the non-profit Parkinson's Institute, told Reuters.

Langston and colleagues said they were energized by research presented at the Parkinson's Disease Environmental Research meeting in Monterey, California, earlier this month.

Parkinson's disease, which affects more than 1 million patients in the United States, is marked by the death of brain cells that produce dopamine.

Dopamine is a neurotransmitter, or message-carrying chemical, associated with movement. Drugs can delay symptoms for a while but there is no good treatment and no cure.

Farm workers are at especially high risk but links to pesticides have been difficult to document because years usually pass between a person's exposure to pesticides and the development of the disease.

Dr. Beate Ritz of the University of California at Los Angeles and Dr. Caroline Tanner of the Parkinson's Institute looked at 80,000 people in Iowa and North Carolina and found farm workers exposed to paraquat had twice the expected risk of Parkinson's over their lifetimes.

Exposure to another pesticide called dieldrin also raised the risk, the study, funded by the National Institute of Environmental Health Sciences, found.

A second study found similar effects in farm workers in central California.

BETTER DOCUMENTATION

What made the studies especially important was that pesticide exposure could be carefully documented through records of pesticide purchase, Langston said. Details will be published in a scientific journal later.

Dr. Donato Di Monte of the Parkinson's Institute gave paraquat to laboratory animals and found it caused a buildup of alpha-synuclein in the brain that killed the same neurons affected by people with Parkinson's disease.

"This increase in alpha-synuclein in the brain could be the missing link between the exposure to this agent and how this agent causes the disease," Di Monte said in a telephone interview.

"Maybe being exposed to paraquat may not be enough to cause the disease but increases the probability the disease may develop," Di Monte said.

Langston and Di Monte said inflammation also could be a factor.

"Give an animal a compound that creates a marked inflammation response in the body ... and months later the animal loses cells in same area of the brain that is associated with Parkinson's," Langston said.

"This suggests that systemic inflammation may somehow sensitize the brain."

Multiple concussions, which can cause inflammation in the brain, raise the risk of Parkinson's, Langston said.

Two other groups of people that have a higher-than-average risk of Parkinson's are health workers and teachers.

"At first glance that doesn't make sense," Langston said.

But both do have something in common -- frequent exposure to viruses.

It could be, Langston and Di Monte said, that if a person is exposed to a pesticide while his or her brain has inflammation, this greatly raises the risk of Parkinson's many years later.

Source: Reuters



Senator blocks honor for environmental icon

Coburn says she created climate of hysteria on DDT

Reuters

Updated: 3:46 p.m. ET May 25, 2007

WASHINGTON - A plan to honor environmental pioneer and "Silent Spring" author Rachel Carson on her centennial Sunday was blocked by a U.S. senator who believes Carson created a climate of "hysteria and misinformation."

Sen. Tom Coburn derailed approval of a Senate resolution honoring the life of Carson, whose 1962 book "Silent Spring" warned of the dangers posed to wildlife and humans by the pesticide DDT and who is credited with inspiring the modern environmental movement.

"Rachel Carson's work both directly and indirectly created a climate of hysteria and misinformation about the impact of DDT on the human populations," said John Hart, a spokesman for Coburn, in explaining why the Oklahoma Republican withheld his support for the plan to honor her.

"Obviously her central claim about what it does to ecosystems was largely correct," Hart said by telephone. "But her approach was consistent with a lot of environmental rhetoric which tends to sensationalize the facts."

Sen. Ben Cardin, a Maryland Democrat who planned the Senate honor for Carson and expected an easy approval in time for what would have been her 100th birthday, was taken by surprise by Coburn's decision to block it.

"Rachel Carson has been an inspiration to a generation of environmentalists, scientists and biologists who made a difference and changed the irresponsible use of pesticides," Cardin said in a telephone interview. "Honoring her 100th birthday should not be controversial. I wanted to share that with our country."

Originally developed as a powerful multi-species pesticide, DDT was used in World War II to clear South Pacific islands of malaria-causing insects for U.S. troops and in Europe as a de-lousing powder.

Carson described how DDT enters the food chain and accumulates in the fatty tissues of animals, including humans, causing cancer and genetic damage. Her book is credited with the U.S. decision to ban the chemical in 1972, though the World Health Organization approved it last year for use indoors to fight malaria.

Cardin said Coburn's rejection of the honor for Carson was inappropriate and arbitrary.

"What Sen. Coburn is doing is basically citing the line of the interest groups ... because they had an economic interest in DDT," Cardin said.

Coburn's spokesman said the indirect result of Carson's work was to spawn "an unscientific bias against DDT."

"The result of that is that millions of people in the developing world died because the environmental movement, inspired by Rachel Carson, created a climate of fear and hysteria about DDT," Hart said.

Carson, who died in 1964, will not go without tributes on Sunday: there will be a celebration and feast at her family homestead in Springdale, Penn., and the Andy Warhol Museum in Pittsburgh has an exhibit in her honor.

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