PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
MAINE DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

BOARD OF PESTICIDES CONTROL

June 27, 2014

Cafeteria, Madison Area Memorial High School, 486 Main Street, Madison, Maine

AGENDA

10:00 AM

1. Introductions of Board and Staff

2. Minutes of the March 28 and May 16, 2014, Board Meetings

   Presentation By: Henry Jennings
   Director

   Action Needed: Amend and/or Approve

3. Public Forum (limited to one hour)

   At this time, the Board invites anyone interested to address its members with questions or concerns about any pesticide-related issues.

   Presentation By: Henry Jennings
   Director

   Action Needed: None required

4. Interpretation of the Term "food production" in the Context of the Agricultural Basic Pesticide Applicator License

   Questions have arisen about the term "food production" in the statute that requires certification for a "private applicator of general use pesticides for food production" (Title 22, Sec. 1471-D [2-D]). The staff is asking the Board to interpret the meaning of the term in this context.

   Presentation By: Gary Fish
   Manager of Pesticide Programs

   Action Needed: Provide guidance to the staff on how to interpret the statute

5. Overview of Board of Pesticides Control Posting/Notification Requirements

   At the March 28, 2014, meeting, the subject of Board of Pesticides Control sign requirements came up as the Board reviewed a complaint filed by Donna Herczeg. There was Board sentiment to review the BPC sign requirements at a future meeting and determine whether they are serving the intended purpose. The staff has summarized those requirements and will share the results with the Board.

Presentation By: Henry Jennings
Director

Action Needed: Determine whether the signs are serving the intended purpose

6. Mosquito-Borne Disease Update

During 2012 and 2013, the Board completed two sets of rulemaking in order to allow governmental entities in Maine to conduct adult mosquito-control programs to prevent mosquito-borne diseases. In addition, there have been two bills in the Maine Legislature affecting public-health-related mosquito control. The Maine Department of Agriculture, Conservation and Forestry also submitted a plan to the Legislature for preventing mosquito-borne diseases. Finally, the Maine Department of Environmental Protection is finalizing a Pesticide General Permit that would allow for wide-area, aerial-spray programs for control of forest and public health pests, and is working with BPC staff on amending the permit for the use of Bt as a larvicide for mosquito control. The staff will update the Board on the status of these activities and mosquito-borne disease trends.

Presentation By: Henry Jennings
Director

Action Needed: None—informational only

7. Other Old or New Business

a. Letter from Emera Maine about substation spraying

b. Variance Permit for Dubois Contracting

c. Variance Permit for the Maine Department of Transportation

d. Variance Permit for Bartlett Tree Company

e. Variance Permit for RCL Services

f. Ogunquit Ordinance

g. Other

8. Schedule of Future Meetings

August 8 (public hearing for rulemaking), September 12, October 24 and December 5, 2014 are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

Action Needed: Adjustments and/or Additional Dates?

9. Adjourn

NOTES

- The Board Meeting Agenda and most supporting documents are posted one week before the meeting on the Board website at www.thinkfirstspraylast.org.
- Any person wishing to receive notices and agendas for meetings of the Board, Medical Advisory Committee, or Environmental Risk Advisory Committee must submit a request in writing to the Board's office. Any person with technical expertise who would like to volunteer for service on either committee is invited to submit their resume for future consideration.
- On November 16, 2007, the Board adopted the following policy for submission and distribution of comments and information when conducting routine business (product registration, variances, enforcement actions, etc.):
    - *For regular, non-rulemaking business*, the Board will accept pesticide-related letters, reports, and articles. Reports and articles must be from peer-reviewed journals. E-mail, hard copy, or fax should be sent to the attention of Anne Bills, at the Board's office or anne.bills@maine.gov. In order for the Board to receive this information in time for distribution and consideration at its next meeting, all communications must be received by 8:00 AM, three days prior to the Board meeting date (e.g., if the meeting is on a Friday, the deadline would be Tuesday at 8:00 AM). Any information received after the deadline will be held over for the next meeting.
- During rulemaking, when proposing new or amending old regulations, the Board is subject to the requirements of the APA (Administrative Procedures Act), and comments must be taken according to the rules established by the Legislature.

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March 28, 2014

AMHI Complex, 90 Blossom Lane, Deering Building, Room 319, Augusta, Maine

MINUTES

8:30 AM

Present: Jemison, Bohlen, Flewelling, Granger, Stevenson, Eckert, Morrill

1. Introductions of Board and Staff

- The Board, Staff and Assistant Attorney General Mark Randlett introduced themselves
- Staff Present: Jennings, Hicks, Tomlinson, Connors, Fish, Bills, Patterson

2. Minutes of the February 21, 2014, Board Meeting

Presentation By: Henry Jennings
Director

Action Needed: Amend and/or Approve

The following amendments were requested:

- Introductions: add who was present
- Item 4, second bullet: change "and environmental group" to "an environmental group"
- Item 4, 11th bullet: change "won't be for those people" to "won't be a fit for those people"
- Item 4, 20th bullet: Bohlen misspelled
- Item 4, 21st bullet: Unclear, change "there were samples showing pesticides potentially caught in Maine" to "there were samples showing conflicting sample results in lobster caught in Maine"
- Under Other or New Business, add "The Board instructed Jennings to attend the workshop on the LD 1744 An Act To Protect Maine Lakes"
- Item 13, 6th bullet: after "Maine might be a good place for growing seed increase" add "(for out-of-state or out-of-country market),"

  - **Eckert/Bohlen: Moved and seconded to accept the minutes as amended**
  - **In favor: Unanimous**

3. Consideration of Complaint Filed by Donna Herczeg of Portland Concerning TruGreen Lawncare and Sterling Insect-Lawn Control

Chapter 90 of the Board's rules (attached) allows citizens and organizations to submit complaints to the Director for the purpose of having the complaint placed on a Board Meeting agenda. While most complaints are not handled in this manner, Chapter 90 provides an alternate avenue to the public to

present concerns directly to the Board on matters in which the compliance staff is unable to address. The Board will review the complaint and determine if any action is warranted at this time.

Presentation By: Henry Jennings
Director

Action Needed: Determine Whether any Action Is Warranted

- Jennings explained that Ms. Herczeg has written to the Board with a number of concerns, mainly around a conversation she had with a supervisor at TruGreen. There isn't a public law around what someone says, so there was no good way to address her complaint. Jennings said Ms. Herczeg's mention of weather conditions and applying before heavy rains, reminded him of past activities, which led to the staff creating BMPs. The difficulty with BMPs is that they are advisory, difficult to enforce. There are two companies mentioned in the complaint: the conversation was with TruGreen, and complaint about signs is for Sterling.
- Ms. Herczeg said that she has two years of experience with spraying in her neighborhood. She wrote a letter to the *Portland Press Herald* last year, which is now on the Natural Resources Council of Maine website, which explains more about her concerns. She wrote because of the notification registry, which has only a two-month window to register, and at a time when people aren't thinking about their lawns. She read the letter to the Board, which described a series of concerns about pesticides, how certain species of dogs are especially prone to certain types of cancers, studies that link pesticide exposure to dog cancer, and a summary of the pesticide notification rule.
- Jemison thanked Ms. Herczeg for coming. He explained that there are spray drift rules in effect, but that you only have control over your own property; you can't control what your neighbor does. If she feels there is drift, she can file a complaint and the staff will sample her property. If the sample is more than one percent of the residue found on the target site, then that starts a process where that person can explain what they did and why the drift occurred. If the Board feels that the person didn't prevent drift to the maximum extent possible, they will be fined. The Board does want to have a discussion about signage.
- Ms. Herczeg replied that not every state has notification or signs, and only 13 states have a registry. But more can be done. Lucas will show her where they spray; she doesn't have an issue of drift anymore, but there is no protection for bees or birds that land in that yard. Bees can travel six miles. Spraying in a city causes even greater difficulty; there aren't safe corridors for all these creatures. To protect bees, large areas are needed. She understands boundary rules, but concerns run deeper. The notification registry isn't advertised in newspapers; many people don't know there is a registry. The registry is more for chemical companies and businesses than for us. Their attitude is: well, there are only 20 people on the registry. Herczeg said she was shocked that in Portland there is only one person on the registry. It's very hard for a lot of people to get on the registry; she doesn't understand the purpose of the $20 fee; neighbors have balked at the fee. Why is the registry public? People on the registry are in a public way opposing pesticides; she is concerned about people being mad at them.
- Eckert noted that it would be impossible to have a complete discussion of all these issues at that meeting. She remarked that Ms. Herczeg is a person with zero tolerance for pesticides, and there are many like her, but others believe they get some benefit from them. The Board has to try to balance the needs of everyone. It can address whether regulations are violated, which are there to protect the public and provide information. The Board can't do more than that, but private citizens can. Some communities have ordinances against pesticide use.
- Fish pointed out the YardScaping Partnership was started by the Board and that it has been looking at the issue for a long time, trying to educate people about sustainable landscaping practices.
- Jemison noted that the Board is sympathetic, but people look at how they manage their property to be their right; it's a property rights issue. He suggested having a discussion about signage at a future meeting.

- Herczeg said that one of her chief concerns is that the companies are using signs for marketing. The signs from Sterling were turned away from the street; she couldn't read dates. She asked if there were guidelines for signs. Jemison replied that the sign contained all the required elements.
- Bohlen commented that the board understands that a lot of people agree with Herczeg's thinking on pesticides. The Board must adhere to its statutory mandates. Signs are consistent with that mandate. Do they do what they are supposed to do—warn people? The notification registry has been a contentious issue for a lot of years; there are deep disagreements. The fact that there are only 20 people on the registry is good evidence that it's not working. The Board is constrained by legislative mandates.
- Ms. Herczeg and her husband noted that when they talked to the person on the phone (not sure which company), he was threatening; they felt that if he was the spokesman for the company, he should be educating the public and they should be able to trust what he says.
- Morrill noted that the Board has spent a lot of years developing regulations around these issues. The company has to honor requests for notification. There are many other rules; if the Board doesn't know they're not being followed, they can't do anything. Fish noted that Maine goes to great lengths in its training, more than most states, to impress that communication, especially risk communication, is very important.
- There was a question about whether the person answering questions was licensed in Maine; Fish answered that the rule requires every company to have a licensed master applicator, but does not require that every employee be licensed. The licensed master is the supervisor of the others; companies may have management people who aren't licensed, but are answering questions. We would prefer they defer to people who had training, but it's not mandated.

    - **Jemison said that the Board would have a discussion on signage and would ensure that Ms. Herczeg was aware of the agenda.**

4. <u>Consideration of a Request from Darin Hammond of Jasper Wyman & Son about Potential Rulemaking to Deregulate Hexazinone</u>

Hexazinone is currently regulated under Chapter 41: Special Restrictions on Pesticide Use. The regulation requires anyone purchasing, using or supervising the use of any pesticide containing hexazinone to have a private or commercial applicator license. It has been suggested by a constituent that because all growers will have to have at least an Agricultural Basic license by April 15, 2015, there is no longer a need for this regulation.

Presentation By: Henry Jennings
Director

Action Needed: Determine Whether any Action Is Warranted

- Jennings explained that this section was added to Chapter 41 because of water quality concerns; it is a unique product with respect to water solubility. It had been found in both ground and surface water. Technically it's not restricted, because growers objected to the $5 deposit on containers, so instead of making it restricted, it was put in rule that one has to be licensed to sell and use it. It was also put in rule that it couldn't be applied with an air sprayer. With the new Ag Basic license, anyone who might use it will be licensed, so there may not be a need for the Chapter 41 restrictions any more.
- Darin Hammond explained that the blueberry industry is unique; there is an older population of blueberry farmers. There were a few instances where they couldn't use Velpar L because they don't want someone else to do the application and the rule won't allow them to purchase or apply it themselves. If they have a friend who has a license, they can't purchase Velpar for them and be reimbursed because that would be distribution. Wyman's has an issue with a couple of farms which

are in trusts that have several family members. The family member with the license would have to purchase and apply and they couldn't be reimbursed. Hammond would like the Board to eliminate the restrictions in Chapter 41; everyone who sprays blueberries is going to have to be licensed soon. The point of having it in Chapter 41 was because of water contamination; Hammond advocated for addressing the concerns through continuing education.

- Eckert agreed that the Board wanted people to be aware of the water concerns. Jemison said he remembered giving a lot of talks about water concerns, making applicators aware that it is more leachable and understanding the principles. He noted that there has been a decline in use because there are more options available now.
- Hammond agreed that there are more options; growers use other products to prevent resistance. We have not seen an increase in water contamination. The EPA has done additional studies and found the danger to be low; it doesn't affect salmon.
- Bohlen said the existing use is clear, but in talking about changing the rule, is there a potential for a market to develop? Is there a risk to changing the rule? Jennings replied that it is used in other parts of the country for forestry, but not in Maine. Granger agreed, saying that there are not many plantations in Maine; there is a product containing hexazinone that can be used on Christmas trees, but its use is very limited. Jemison noted that it is expensive compared to other products; blueberry growers use it because the plant injury risk is low.

    - **Consensus was reached to include the proposal in rulemaking discussions.**

5. <u>Consideration of a Request from Ian Yates of Scotts Lawn Service of Gorham about the Board's Policy Relating to Verifiable Authorization of Commercial Pesticide Application Services</u>

The Board's Policy Relating to Verifiable Authorization of Commercial Pesticide Application Services lists several methods allowed for verification and allows the staff to approve other methods to provide a substantially equivalent degree of verification. Scotts Lawn Service of Gorham has submitted a proposed method which the staff would like the Board to review.

Presentation By: Henry Jennings
Director

Action Needed: Provide Guidance to Staff

- Jennings explained that Board policy allows the staff to approve other methods that provide a substantially equivalent degree of verification. Scotts Lawn Service is struggling to get people to respond to their correspondence. Every method that has been approved included a response from the customer. This method would not require a response from the customer; is it verifiable?
- Eckert noted that there is no requirement that they have to reach somebody; they could leave five messages, but they could be left on the wrong phone. Bohlen noted that there are a lot of reasons why someone might be out of reach.
- Flewelling remarked that there is a lot of frustration in trying to get customers to respond and asked whether multi-year contracts were allowed. Jennings replied that they are, but most customers don't want to sign a multi-year contract. Randlett noted that the contract must have a specific end date. Morrill said that his understanding was that a multi-year contract would be verified each year. It used to be standard operating procedure to have a contract that automatically renewed unless the customer canceled. Jennings noted that the current policy requires a response from the homeowner. Randlett noted that Chapter 20, Section 6, allows for long-term contracts, provided certain conditions are met.

    - **Consensus reached that for a method to "provide a substantially equivalent degree of verification," as required by the policy, there would need to be contact with the customer.**

6. Section 18 Emergency Registration Renewal Request for HopGuard to Control *Varroa* Mites in Managed Honey and Commercial Bee Colonies

The Division of Animal and Plant Health, in the Maine Department of Agriculture, Conservation and Forestry, is requesting that the Board recertify the petition to EPA for a FIFRA Section 18 specific exemption for use of HopGuard (potassium salt of hop beta acids) to control *Varroa* mites in managed bee colonies. State Apiarist Tony Jadczak is seeking approval to continue use of this product, which has provided consistent control against *Varro*a mites during the last two seasons, and is an important alternative in resistance management and organic honey production. He points out that a healthy bee keeping industry is needed to support Maine agriculture, and that this product is essential to honey production and commercial bee operators. The request is supported by the registrant, BetaTec Hop Products, a wholly owned subsidiary of John I. Haas, Inc.

Presentation By: Mary Tomlinson
Pesticides Registrar

Action Needed: Approve/Deny Request to Petition EPA for a Section 18 Specific Exemption Registration for HopGuard for Use with Bees.

- Tomlinson explained that this was a continuation of the use of HopGuard that was approved last year.
- Tony Jadzcak, state apiarist, explained that there were no problems with the use of the product in 2013, unlike 2012, when there were problems associated with cold weather; hopefully this concern will be addressed on the new label when it comes out. The company is also working on a new version to add more molasses, more cardboard, more active ingredient. There are six other products for use against *Varroa* mites: four are approved for organic control, and one of the other two can be used while bees are making honey for human consumption. Researchers are looking at older products, which were resistant, but may not be anymore. There are pros and cons to all materials.
    - **Granger/Morrill: Moved and seconded to approve the Section 18 registration**
    - **In favor: Unanimous**

7. Consideration of the Canyon Group's Special Local Need (FIFRA Section 24[c]) Registration Request for GWN 1715-O (EPA #81880-5) to Control Mites and Whiteflies on Greenhouse Tomatoes

The Canyon Group is requesting a Special Local Need (SLN) registration to allow use of the parent product, GWN 1715-O in Maine. In turn, Canyon Group has given permission to Gowan Company to seek a state supplemental SLN registration (as a sub-distributor) to allow the GWN 1715-0 to be sold under the Gowan Company trade name, Sanmite. Backyard Farms supports the use of this product. EPA has established a tolerance for the active ingredient pyridaben.

Presentation By: Mary Tomlinson
Registrar and Water Quality Specialist

Action Needed: Approve/Disapprove 24(c) Registration Requests

- Tomlinson explained that the Board had previously approved Nexter for Backyard Farms. Gowan and Canyon Group have decided to no longer support the registration. This product is the same formulation. The Board needs to approve the primary SLN and then the supplemental SLN. Backyard Farms desperately needs this product to control mites. It is the same active ingredient, just a change of name and SLN, for marketing purposes.
- Bohlen pointed out that the label is unclear; it says do not apply more than eight ounces of product per crop cycle, but doesn't indicate area. Tomlinson replied that it is identical to what was approved before; a crop cycle is a specific number of weeks, then they replant. Jennings pointed out that the

area where Bohlen was looking is the "notes," and is vague because there are two sets of rate instructions. Bohlen said that we should point out to them that the line in the notes section does not address area treated; labels are usually very clear about the area it applies to.

- Bohlen further noted that he hopes they get this off the SLN someday. Tomlinson replied that there is an issue with whiteflies because some products labeled cannot be used in greenhouses because of resistance concerns; this is the only product available for greenhouses. She pointed out that under general restrictions on the master label, there is a maximum per acre per year; it would probably be useful to have that on the SLN label.

  - **Flewelling/Bohlen: Moved and seconded to approve the SLN registration**
  - **In favor: Unanimous**

8. Review of Revised Board Policy Relative to the Environmental Risk Advisory Committee

In 1999, the Board first created the Environmental Risk Advisory Committee (ERAC) as an analog to the Medical Advisory Committee (MAC), to assist the Board in evaluating and addressing state-specific environmental concerns. At the February 2014 meeting, the Board reviewed the ERAC Policy and decided to revise the policy in recognition that the ERAC is not commissioned frequently enough to justify assigning standing members to the committee. The staff has revised the policy consistent with the Board instructions and the policy is now ready for Board review, revision, if necessary, and approval.

Presentation By:	Henry Jennings Director	Lebelle Hicks Staff Toxicologist
Action Needed:	Determine Whether the Revised Policy is Now Acceptable and Should Be Approved	

- Jennings said that he wasn't sure whether there was consensus on the Board on whether to have a policy or not. There is no legal need for a policy. The Board may want the committee to be ad hoc, assembled to address a specific concern, then disbanded when concern has been addressed to the satisfaction of the Board. Should there be a policy, and if so, what should it be? The reason for the policy originally was that the Board wanted to be sure the committee was comprised of scientists without a vested interest.
- Bohlen noted that for this particular ERAC (lobster), the word scientist might be too narrow a word; the Board might need economists or other kinds of expertise; people that aren't really considered scientists. Jennings suggested the term "technical experts" could be added. Eckert pointed out that, if scientists are people that want to use verifiable, repeatable evidence, then economists can be scientists, too. Bohlen agreed to leave as is.
- Jemison noted that the advantage of a policy is that it gives a framework by which to select people; the Board doesn't want lobbyists. A policy gives a framework, grounds to stand on.

  - **Eckert/Bohlen: Moved and seconded to adopt as amended**
  - **In favor: Unanimous**

9. Review of Current Rulemaking Ideas

Over the past several months, the Board has discussed a number of policy areas for which some additional refining of rules may be desirable. The staff summarized recent rulemaking ideas for the February 2014 meeting where the Board briefly reviewed the list but elected to table the discussion to next meeting. The staff is seeking guidance on whether and when to initiate any additional rulemaking.

Presentation By:	Henry Jennings Director

Action Needed: Provide Guidance to the Staff

- Jennings explained that two of the rulemaking suggestions were from constituents: removing restrictions on hexazinone and posting signs in lieu of identifying and mapping sensitive areas for mosquito- and tick-control applications. In addition, there are a couple of policies that should be put into rule because policies aren't enforceable.
- Eckert asked if some time could be set aside to talk about signage. What is good signage, what is it good for? There are situations where signs are better; signage requirements are scattered throughout several chapters. Jemison agreed, adding that there is sure to be a diversity of opinion and it is worth spending some time on it. Should the rules be more restrictive so the message doesn't get lost? Put on the agenda a long discussion about signage, particularly turf.
- Fish asked if there was any message he should be giving to turf and ornamental applicators at upcoming meetings. Bohlen said that there should not be advertising on signs, but he was uncomfortable about sending a message that was not supported by the rule. Flewelling said that he is okay with advertising. Granger said the signs should definitely be pointed toward the road. Bohlen noted that they are technically following the rules. Stevenson said there should be some consideration given to the risks and benefits of putting plastics into the environment. Jemison asked whether any research had been done on what effect they have on the public, if any.
- Jennings commented that any rulemaking around signs would be major substantive, and will take some time.
- Jennings explained the suggested amendments to Chapter 31
    - (1) the Board has faced emergency situations with potatoes when it was so wet the tractors couldn't get in. The Board went through emergency rulemaking three times to allow for reciprocal licenses, so it might make sense to put an emergency provision in rule.
    - (2) The waiting period after failing the exam: is it really serving the purpose of ensuring there is an incentive for applicants to study? Other licensing rules have the same issue.
    - Jennings said that over a year ago the Board had discussed creating a new licensing category for those making pesticide recommendations.
- Bohlen suggested the staff come up with ideas based on conversations that have already happened. Jennings pointed out that the Board can discuss concepts, but can't actually review draft amendments until rulemaking is started.
- Bohlen noted that signage would not be easy. Morrill said that changing the requirements for 7E would be easier because the industry is already doing it. Other categories might be more difficult, e.g., 6B: how do you post a sidewalk? Jennings suggested it could be based on projects that are linear.
- Consensus was reached to look at chapters 20, 22, 28, 31, and 41.
- Jennings noted that Nicholas Hahn from CMP was present and was interested in opening up a discussion around Chapter 22. Hahn explained that it has to do with spraying inside substations—mapping the sensitive areas around a substation is a burden; the area can be one-quarter of an acre, up to several acres. It's all bare ground; they do pre- and post-emergent applications annually. Fish noted that access is controlled. Hahn agreed—it is all fenced in; outside the fence is a gravel area treated with a backpack sprayer. Granger remarked that they only have to map 500 feet around the substation, and is that really a big deal? Hahn said that it is updating the maps from year-to-year and keeping records that is the issue. They are doing the mapping, but think it's interesting that turf and ornamental don't have to. What is the reason?
- Granger noted that what they are doing is akin to what farmers do, and they have to update maps annually; no more work than for agricultural users.
- Bohlen noted that most of the exemptions are for specific kinds of applications. Is there something unique about this kind of application? Does it fall under some other box already? A fixed site in an urban setting where you have to pay attention to what's around it.

- Flewelling remarked that the reason the posting was done in place of mapping in urban areas is because everything in an urban area is a sensitive area. If a substation is in an urban area, it should be posted, if it's in the middle of nowhere, they should be mapping sensitive areas. Morrill noted that like with 7E, current practice is to do both because posting makes more sense. Hahn commented that posting is an internal requirement at CMP. Eckert noted that people do use the land for recreational purposes, e.g., atvs, snowmobiles, so posting might be a more useful requirement. Hahn said that he is more concerned with inside the area where they do the high-volume spraying.

10. Consideration of a Consent Agreement with Collins Lawn Insect Control, Inc., of Portland

On June 3, 1998, the Board amended its Enforcement Protocol to authorize staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine and resolve the matter. This case involved drift from a mosquito treatment onto an adjoining property.

Presentation By: Raymond Connors
Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors gave the details of the complaint. The death of a dog was attributed to a mosquito–tick application. The inspector followed up, took samples of the target area and the complainant's property; the samples were positive for bifenthrin. No autopsy was done on the dog. Lebelle Hicks evaluated what was known including symptoms and, in her opinion, could not attribute cause and effect. In the process of investigating the complaint about the death of the dog, it was determined that drift had occurred; the off-target residues were 16% of those found in the target area. PPE requirements were also not followed.
- Jemison asked how it was known whether PPE was used. Connors replied that the inspector asked the question as part of the investigation and the applicator answered.
- Connors explained that the situation was complicated by the fact that, at the same time as the incident, the uncle and the wife gave three dogs flea and tick baths using an expired 25(b) product.
- Flewelling asked how far off the boundary line the samples were taken; Connors said that the properties were separated by a stockade fence and the samples were taken within a foot on either side of the fence.
- Morrill noted that the addresses were 84 and 85, and asked whether they were on the same side of the road; Connors replied that they were on the same side of the road.

  - **Bohlen/Eckert: Moved and seconded to accept consent agreement as written**
  - **In Favor: Unanimous**

11. Other Old or New Business

a. Legislative Update—H. Jennings
   - Jennings explained that the only bill to reach passage was the medical marijuana bill. The lakes bill originally had a pesticide setback, but the pesticide piece was taken out altogether.

b. Letter from the Joint Standing Committee on Agriculture, Conservation and Forestry—H. Jennings
   - Jennings pointed out the letter received regarding the lobster study. He noted that the Board had spent some time crafting the wording of the ERAC charge, but wondered if the word

"industry" should be in there. Bohlen replied that the advantage of saying industry is that it gets away from worrying about the health effects on individual lobsters; the committee can talk about a low risk of affecting the overall population, instead of individual lobsters. Changing from "industry" to "resource" takes away from an economic threshold and into an environmental threshold.

- **Consensus reached to change "industry" to "resource" in the ERAC description**

c. ERAC update—L. Hicks

- Jennings explained that DMR is concerned about other invertebrates, mainly clams, because clams are sediment dwellers. Bohlen noted that clams are a food source for lobsters, so they are addressed. If the focus were on clams, it would be a different group of pesticides. Focus on those most likely to have an impact on arthropods, not on a broad suite of organisms. The choice of pesticides to test for will be the subject of the first meeting. A discussion ensued about choosing pesticides for the first round of sampling. The first meeting is scheduled for April 18 in Room 319, Deering.

d. Other

- Eckert noted that she had recently read an article about the increase in celiac disease being related to glyphosate. If anyone sees any research on this topic, she'd like to see it. Jemison noted that the allowable levels of glyphosate in food have increased over time. FDA has basically said it is an herbicide and shouldn't affect humans the same way. However, our gut microbes do have the shikimate pathway; glyphosate residues can shift microbial populations in chickens and pigs. Eckert agreed it was plausible, but there is no proof of correlation.

- Granger commented that at the last meeting the Board had instructed Jennings to go to the work session on the lakes bill. Jennings was asked by the Administration not to get involved. Granger and Morrill were at the work session, and could have spoken to clarify things if they had been authorized by the Board, but had not requested authorization because they thought Jennings would be there. Morrill agreed that they were put in an awkward position, because legislators asked them if there would be a representative from the Board, and they thought Jennings would be there to answer questions.
- Jennings explained that such decisions are made at the Governor's office; they assign it to a department, in this case, DEP. He exchanged a couple e-mails with Heather Parent, and sent her copies of BPC rules. Senator Saviello had sent an e-mail requesting that Jennings be at the work session; it was forwarded to Legislative Liaison, who spoke to the Governor's office, and they gave approval, but later they said it wasn't necessary for him to go, that he could answer Saviello's questions via e-mail.
- Granger said that the BPC rules were not clear to the Committee. He suspected Saviello didn't want to answer questions, he wanted someone from the Board to answer them. This is a precedent; if the Board asks staff to do something, it needs to know the Administration isn't going to override. Should the Board bring this up with the Administration?
- Stevenson suggested having Randlett look at it and clarify.
- Eckert noted that there is no mechanism for authorizing Board members to speak on behalf of the Board.
- Tim Hobbs remarked that this was not the first time this had happened; expertise is helpful, we have a concern if expertise is not being made available.
- Jennings said that the answer that the Board got from Randlett before was that the Board is allowed to make policy decisions, not allowed to direct the staff.
- Stevenson asked what are the Board's options for interacting with the Legislature? He thought that Jennings going to the work session was the best way for input; that didn't work.

If the Department was the lead agency, it wouldn't be an issue. Fish said that there is a difference between testifying and a work session. Bohlen stated that this is not about a Board position, but staff with relevant information that the committee needs should be available. If it were testifying, a Board member could go; if we know the Administration doesn't want the staff to take a position, the Board can send a representative to state the consensus opinion. Technical support, which Board members don't have, is being withheld. If the Governor's office says that a staff member can't go, is that okay?

- Jennings noted that the quick pace of the Legislative process is difficult for a public Board that meets monthly—you have to be able to see it coming, and take a vote. Randlett is not going to okay Board members talking to each other via e-mail and taking a position.

12. Schedule of Future Meetings

May 9, June 27, August 8, and September 12, 2014, are tentative Board meeting dates. The Board Chair has inquired whether the May 9 meeting could be rescheduled to May 16. The June 27 meeting is planned to be held in the Madison/Skowhegan area, following a tour of Backyard Farms. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

- **Change May 9 to May 16.**

13. Adjourn

- **Granger/Morrill: Moved and seconded to adjourn at 12:29 PM**
- **In favor: Unanimous**

PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
MAINE DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

BOARD OF PESTICIDES CONTROL

May 16, 2014

AMHI Complex, 90 Blossom Lane, Deering Building, Room 319, Augusta, Maine

MINUTES

8:30 AM

Present: Granger, Morrill, Jemison, Stevenson, Eckert

1. Introductions of Board and Staff

- The Board and Staff introduced themselves (Assistant Attorney General Mark Randlett was not present)
- Staff Present: Bills, Connors, Fish, Hicks, Jennings, Patterson, Tomlinson

2. Minutes of the February 21, 2014 Board Meeting

Presentation By: Henry Jennings
Director

Action Needed: Amend and/or Approve

- The minutes were not available for review.

3. Consideration of the Syngenta Crop Protection Company's Special Local Need [FIFRA Section 24(c)] Registration Request for Dual Magnum, EPA Reg. No. 100-816, to Reduce the Pre-plant Interval in Various Field Crops

Syngenta Crop Protection, Inc. is requesting a Special Local Needs Registration for Dual Magnum to reduce the pre-plant interval for various field crops grown in Maine. Certain vegetable crops grown in Maine currently lack efficacious weed management options and the 60 day pre-plant interval is an impediment in this climate. The Maine Cooperative Extension is supporting this request, which has approved for other states.

Presentation By: Mary Tomlinson
Registrar and Water Quality Specialist

Action Needed: Approve/Disapprove 24(c) Registration Request

- Tomlinson explained that this was a request to expand the use of Dual Magnum to several additional crops. She noted there was a letter of support in the packet from Mark Hutton, University of Maine Cooperative Extension, and that a letter from Lauchlin Titus had been added after the packet had been mailed.

- In his letter to the Board, Mark Hutton explained that the main crops for which the request is being made are beets and spinach, for the control of nutsedge and hairy galinsoga. There are currently no other effective chemical controls. New York and Massachusetts have already approved the use for these crops. About half a dozen growers have requested this use, with a total of about 200–500. Eckert asked how this would change how the product is currently used; Hutton replied that it is already being used on other crops, just allowing use on additional crops, particularly beets and spinach, which are difficult crops in which to control weeds. Hicks noted that there are tolerances for all the crops requested.
- Granger noted that the active ingredient is used in the Christmas tree industry, but not a lot. He added that he had received a call from a grower in Cape Elizabeth supporting this request, and that there are no alternatives for nutsedge and hairy galinsoga.
- Jemison remarked that the fact that New York, which is very conservative environmentally, had approved the use gives him some level of comfort. He noted that this chemical is one that has been found in groundwater and would be concerned about use in sandy soils, but, in talking to Mark Hutton, he was comfortable that that would not be an issue for these uses. Hicks noted that the mixture in this request involves a lower rate than what had been used in the past on other crops

    - **Granger/Morrill: Moved and seconded to approve the request**
    - **In favor: Unanimous**

4. Consideration of a Request for Variances from Chapters 22 and 29 from Asplundh Tree Expert Company—Railroad Division, to Treat Railroad Rights-of-way in Maine

Asplundh Tree Expert Company—Railroad Division, is seeking variances from Chapter 22, Section 2(C), Identification of Sensitive Areas, and Chapter 29, Section 6, Buffer Requirements, in order to treat the St. Lawrence and Atlantic Railroad rights-of-way in Maine. Board policy indicates that first-time variance requests must be considered by the Board. Policy further stipulates that railroad variance requests need to be consistent with the Maine Department of Transportation standards.

Presentation By: Henry Jennings
Director

Action Needed: Approve/Disapprove the Variance Requests

- Jennings explained that this variance request was the first from this company for railroad rights-of-way. He noted that about 10 years ago the Board got conservative about variances for railroads, because of water quality concerns and the fact that many railroad tracks travel near water and the way tracks are constructed and maintained, there is a lack of fine soil particles and organic matter present to bind pesticides. Companies want to use very persistent herbicides; there is a legal requirement for them to maintain vegetation-free zones because of fire hazards. There is a difficult balance between track maintenance and minimizing risk of the transport of pesticides into water. The Board has been using the Maine Department of Transportation (MDOT) model as a guide to approving variances. MDOT owns about half of the track in Maine and they hire contractors. MDOT is under a high level of scrutiny, and because as a state we are very environmentally conservative, MDOT is very cautious about its use of herbicides.
- Jennings discussed this variance with Bob Moosmann, from MDOT, and he voiced some concern with the product Streamline, that Asplundh wants to use. It contains the same active ingredient as Imprellis, which was originally marketed for broad leaf control in turf; after three months on the market it was pulled by EPA because of damage to trees adjacent to treated lawns. It is still labelled for turf, but not in proximity to the root zone of trees. It is fairly persistent, and seems to have some mobility issues. Both Moosmann and Hicks expressed concern about killing

conifers along rights-of-way. They were also concerned about using Streamline within 10 feet of water.

- Jennings explained that the staff realized they had already approved a variance, for RWC, Inc., that allowed for the use of Streamline; the staff isn't sure when this product was added to the RWC variance request, but it was missed on the application. Jennings spoke with Brian Chateauvert from RWC; they use it for broad leaf control, where the persistence provides extended control. In some situations, MDOT requires contractors to change the mix when spraying near water; contractors switch to a glyphosate-only mix. Jerry Blase from Asplundh is willing to discuss using different products near water. Blase stated this is their national program and is what they do everywhere; they have three years' experience with this protocol. If they had off-target damage to trees, they would be paying for it. But water quality concerns are still there.
- Hicks noted that when the staff approves a variance, there has not been a label review. Restrictions on this label are different now than when the RWC variance was first approved. She suggested that when staff reviews a variance, the label should be checked for changes.
- Jemison asked if there was any risk from this product in compost. Hicks replied that the label states that it should not be used for mulch or compost.
- Jennings said that, according to Blase, this product is effective on weeds that are resistant to other products, and that Moosmann agrees with that, but that those weeds aren't a problem in Maine.
- Granger asked what type of equipment was being used on railroad rights-of-way. Jennings said that they use a three-part boom; they can shut off outer sections and just run the center, which is what they do when going by lawns. The equipment puts out big droplets and drift is not an issue. Granger asked about the volumes and Jennings said the variance said 25–30 gallons per acre. Jennings remarked that MDOT is using a pinolene sticker to hold the product in place; Moosmann's concern is that this herbicide has a longer half-life than the sticker. Hicks noted that the label says it is rain-fast in four hours. Jennings stated that one reason the Board has been concerned about products near water is that there is no organic matter to hold them in place.
- Granger pointed out that there was legislation proposed this year that would have restricted pesticide use near water; it was pointed out to the Legislature that pesticides can only be used within 25 feet of the water with a variance from the Board. It will look weak when the bill comes back and it's pointed out that pesticides are being used within 10 feet. Jennings said that railroads are concerned with crossings, if vegetation is allowed within 25 feet of crossings; it creates a need to manually control weeds in that zone. The railroad industry and MDOT worked with the Board and reached a compromise 10–15 years ago. Eckert noted that the Board would have liked greater restrictions near water, but felt pretty good about the MDOT standard. Jennings noted there had been some historical problems when unexpected thunderstorms occur shortly after the tracks are sprayed. It's easy to observe where material gets washed off of the tracks.
- Eckert said the Board could approve the variance with restrictions; table until they get it sorted out, which would be a time problem for this season; or let the staff work out the details. Jennings said that if the Board stated their priorities, and gave parameters, he could negotiate with Asplundh.
- Morrill said it was difficult to disapprove this variance since we've already approved another. Jennings said he would also work with RWC, that they are open to adjusting their program.
- Stevenson asked if Streamline is a new product. Jennings said that it is new for this use; relatively new chemistry. Hicks said the earliest label she could find was 2011; the Imprellis issue was in 2012–2013, and that's when the label changed.
- Granger pointed out that the legislation around lakes was not specific to any product, that it included Roundup and anything else. Fish noted that glyphosate is approved for use in water.
- Stevenson asked if MDOT didn't support the use of Streamline because they don't like it or because it's so new they haven't had the chance to review it. Jennings said they might allow it

down the road, but, being a government agency, they are very careful, and they try to set a positive example. Stevenson asked if the main reason for concern is the persistence. Jennings said that is Moosmann's concern. Hicks noted that it is very water soluble. There is a warning on the label about runoff and groundwater contamination. There is a risk assessment from the US Forest Service, but she has not had a chance to look at their methodology.

- Eckert suggested granting the variance for one year, then look at setting up guidelines, BMPs.
- Jennings suggested convening a group to look at this issue before next season. Work with Moosmann, Ron Lemin, a water quality expert, and representatives from the railroad ROW contractors. Jemison suggested a colleague of his who works at Penn State and has expertise on roadside and railroad ROW vegetation management.

    - **Morrill/Eckert: Moved and seconded to approve the variance, with the condition that Streamline not be used with 25 feet of water**
    - **In favor: Unanimous**

    - **Direct staff to develop criteria/guidelines before next season**

5. Review of Potential Rulemaking Concepts by Chapter

At the February and March 2014 meetings, the Board reviewed a series of potential rulemaking topics that had been discussed at various times over the previous year. At the March meeting, Board members narrowed the list of rulemaking chapters to 20, 22, 28, 31, 32, 33 and 41. The staff will present a summary of the rulemaking concepts by chapter in order to ensure that there is alignment over the precise nature of the proposed changes, prior to initiating rulemaking.

Presentation By: Henry Jennings
Director

Action Needed: Refine the Rulemaking Concepts

- Jennings referred to the memo and the rule excerpts provided.

Chapter 20

- Stevenson noted that policies are not part of the training for a master license, therefore someone could become a licensed master applicator and not be aware of policies.
- Morrill said he would be interested to hear from other companies about how they are handling authorization, which is already in rule.

    - **Consensus reached to propose adding a section stating that applicators must positively identify application sites in a manner approved by the Board.**

Chapter 22

- Variances have been issued since 1988 for linear ROW projects including roadsides and railroads. Variance approval always includes a requirement for companies to demonstrate that they are minimizing drift and for them to publish a public notice; it's difficult to post effectively in these situations.
- The Board felt that in some situations posting was more valuable than identifying sensitive areas when everything is a sensitive area (residential areas, etc.).
- Some discussion ensued about which category certain activities fall into, 6A or 6B.
- Discussion followed about walking trails, and whether posting at ingress and egress points was sufficient. Printing in newspapers is likely not effective. Jemison noted that most towns have a website; those interested could look for information there.

- **Consensus was reached to propose exempting ROW applications from the requirement to identify sensitive areas, provided that the applicator implements a drift management plan and publishes public notice in a newspaper of regional circulation.**
- **Consensus was reached to propose exempting category 7E from the requirement to identify sensitive areas.**

Chapter 28

- **Consensus was reached to propose adding category 7E to the list of categories that require posting, and to add category 6B to the posting requirement, except when making applications to sidewalks and trails, provided that a public notice of the proposed treatment is published.**

Chapter 31

- Three times in recent history the Board conducted emergency rulemaking to accept reciprocal licenses for out-of-state aerial applicators because the fields were too wet to apply fungicides by tractor. This concern might come into effect for mosquito control when the disease threat is high. It probably makes more sense to go over the key rules with aerial applicators than to have them take the regulations exam and struggle through all the rules that don't apply

    - **Consensus was reached to propose waiving the requirement for a written regulation exam for out-of-state aerial applicators and to allow reciprocal licensing when the staff determines there is an urgent need to control pests by aerial application, provided that a staff member reviews key BPC rules with the reciprocal licensing applicant.**

Chapters 31, 32, 33

- Granger said the wait times seem excessive.
- Jemison said if someone takes the test four days in a row, and passes on the fourth day, they haven't learned anything, they've just memorized the exam. Fish agreed that if we give tests more often, we would need to have more versions, which would be added work. He noted that growers should be doing their homework, should be prepared. Granger replied that, as a practical matter, it's not that simple for growers. A problem pops up; they may have to train new people. We talk about IPM, which sometimes involves putting things off as long as possible, but when it's necessary to spray, time is short. The idea that it is difficult for staff is not an acceptable reason.
- Jemison said that with the new Ag Basic license, this should become less of an issue for farmers. This is probably more of an issue for lawncare companies. Jennings pointed out that there are at least three chapters that contain the waiting provisions. Testing for commercial applicators is generally offered once a week. Private licenses (including Ag Basic) are mostly taken at Cooperative Extension offices. Commercial applicators pay $10 for each exam, private applicators pay nothing. The Board has the option of treating the categories differently.

    - **Consensus was reached to change the wait period between exams to six days for all license types.**

Chapter 41

- Morrill asked if hexazinone is available off the shelf for homeowners. The prevailing viewpoint is that the smallest container was too expensive for homeowners to use. Morrill is concerned that it may become more available. Eckert suggested adding warnings about hexazinone to training. Granger noted that there is some forestry use, mostly for pine plantations.

- Morrill pointed out that blueberry sod is a growing product in southern Maine. Hicks stated that there are six products with hexazinone registered in Maine.
    - **Consensus was reached to propose amending Section 3 of Chapter 41 to require that anyone applying hexazinone in Maine be certified as an applicator, but to eliminate the requirements relative to pesticide distributors and air-assisted application equipment.**

6. Overview of the Board of Pesticides Control Software Application Development Process Underway to Improve Work Flow Efficiency and Constituent Service

In February, the Department entered into a Memorandum of Understanding with the Office of Information Technology to undertake an information technology (IT) application development process intended to modernize and integrate the Board's IT systems and create an internet interface. Because all work processes are reviewed and analyzed as part of the development, the staff would like to provide an overview of the process to date and seek the Board's input.

Presentation By: Gary Fish
Manager of Pesticide Programs

Action Needed: Provide Input to the Staff

- Fish gave a brief overview of the project, and showed some of the work that has been completed in the form of "user stories." He said that he is very optimistic about this process, because it allows more flexibility and customization for our use.
- Jennings stated that the PegaSystems option is attractive because: (1) it's a business process management application, and not just a customized database front end; (2) development occurs with the customer and developers in the same room; (3) as each piece of functionality is developed, it's immediately tested by the customer; and (4) there are tools to allow the customer to make minor program adjustments, queries and reports.

7. Consideration of a Consent Agreement with Remedy Compassion of Auburn, Maine

On June 3, 1998, the Board amended its Enforcement Protocol to authorize staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involved use of pesticides inconsistent with the product labels.

Presentation By: Raymond Connors
Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors explained that a marketplace inspection had indicated that this company had bought several pesticides. An inspection was subsequently conducted with Department of Health and Human Services (DHHS), and it was determined that the facility did use a number of the products that had been purchased in the production of medical marijuana. There were also other pesticides that had been purchased elsewhere. One employee interviewed said that he had mixed two gallons of a product, used it on one leaf, and poured the remainder down the drain. There were also issues about not wearing required PPE. None of the products used were registered for that crop. Worker

Protection Standard (WPS) training had not been done. The company acknowledged some of the complaints, but not all; said they had not purchased or used some of the products.

- There were questions about whether the products used would be allowed under current law changes. The answer was that they would not.
- Jemison asked whether most marijuana facilities are likely to be aware of the rules now. Jennings said that the dispensaries are in the loop, but caregivers, who can grow up to six plants, may still be unaware. Jennings stated that he believes that the BPC does not have authority to enter medical marijuana production sites; this must be with DHHS staff.
- There was some discussion about whether a list of caregivers was available so information could be sent. Eckert suggested some information about what's legal to use be sent to all growers, if possible.

    - **Morrill/Eckert: Moved and seconded to accept consent agreement as written**
    - **In Favor: Unanimous**

8. Consideration of a Consent Agreement with Plants Unlimited of Rockport, Maine

On June 3, 1998, the Board amended its Enforcement Protocol to authorize staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involved use of pesticides at a nursery/greenhouse operation in violation of certain state and federal pesticide laws.

Presentation By: Raymond Connors
Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors explained that a routine inspection found there were no records for 2012. WPS requirements had not been met, including training and posting. A product had been used for indoor treatment that was labelled for outdoor use only, and was labelled for homeowner use only.
- Katy Green, MOFGA, said she was curious about the fine because she remembered them as having multiple violations in the past, which would normally increase the fine. Connors said that was true if they were within the last four years. He knew one fine was because they had let their general use dealer license lapse. He thought there might have been a warning about WPS, but not a consent agreement.
- Jemison suggested the staff visit again in a year or two to see if they're doing better. Connors noted that the Board does send a compliance verification which summarizes where they are out of compliance; they're supposed to sign and send it back and we track whether they send them back. When the new Pega system comes into use, we will be able to use inspection history as a criteria for determining who to inspect.

    - **Eckert/Stevenson: Moved and seconded to accept consent agreement as written**
    - **In Favor: Unanimous**

9. Review of Board Authority to Direct Staff to Participate in Legislative Hearings and Work Sessions

At the March meeting, Board members expressed the importance of having the staff represent the Board at legislative policy events. At the same time, the Administration exerts supervisory authority over executive branch employees and administers polices covering legislative functions intended to maintain efficient and consistent executive branch participation. The Board has asked Assistant Attorney General Randlett to clarify the Board's authority with respect to staff participation in legislative events.

Presentation By: Mark Randlett, Assistant Attorney General

Action Needed: None, Informational Only

- Jennings said that he had spent some time looking into this. He explained that he had not left the March meeting with an understanding that the Board had directed him to attend the.Lakes bill work session. There had been a discussion and he knew that Granger and Morrill had been at the hearing regarding the Lakes ill. Senator Saviello had requested that Jennings attend the work session and that request was sent to the Governor's office via the legislative liaison. Originally Jennings was given approval to attend, but later he got the message that it wasn't necessary for him to be there. After hearing the Board's concerns about his absense, he went to Mari Wells, the DACF legislative liaison, and asked if he had made it clear that the Board had requested he attend the hearing, and that he would be representing the Board, not the Department, whether he would have received a different answer. The answer was yes. The mistake was in the communication with the legislative liaison.
- Granger stated it is important that, in the future, if Jennings gets a "no," that he report back to the Board so someone from the Board can be there to represent. He or Morrill could have done so, but they didn't have the Board authorization. Jennings said that he will make sure to do that in the future. He pointed out that Board members don't need permission to attend legislative meetings, and always have the option to go as Board members, but it is a question of whether they feel comfortable speaking on behalf of the Board. They could design some kind of system to deal with this circumstance, but generally it is a very short timeframe; it's difficult to convene a meeting quickly and the Board can't make policy decisions outside a public meeting. Maybe the Board could look at the list of bills and develop initial positions and a policy about Board members testifying on various bills.
- Granger said that is useful to have Jennings act as spokesperson because he has the historical memory and can field questions. But if he is disallowed to go, then it is important that the Board know.

10. Election of Officers

The Board's statute requires an annual election of officers. The members will choose a chair and vice-chair to serve for the coming year.

Presentation By: Henry Jennings
Director

Action Needed: Nominations and Election of Officers

- **Granger/Stevenson: Move and seconded to elect Morrill as Chair and Bohlen as Vice Chair**
- **In favor: Granger, Stevenson, Morrill**
- **Opposed: Jemison, Eckert**

- Eckert noted that she and Jemison are up for nomination this year; both expressed an interest in continuing to serve. They agreed they would write personally to the Commissioner expressing their interest.

11. Other Old or New Business

a. ERAC update—L. Hicks
    - Jennings explained that there was a lot of lively discussion at the meeting. They discussed whether it should be about lobsters or all marine organisms; sampling; literature reviews. The committee agreed that the staff should do sediment sampling this

year; there was consensus around coupling water sampling with sediment sampling sites. There was no consensus on whether there should also be tissue sampling. Hicks said it's a question of whether we're doing a health risk assessment for lobsters or a dietary risk assessment for human consumption; in her opinion it should be the former. Jennings said the staff is drafting a sampling plan; The Department of Marine Resources can cooperate; they sample 1,400 sites for sediments already. Hicks has applied for assistance from Toxicology Excellence for Risk Assessment—a non-profit—to conduct a literature review relative to the pyrethroids and lobsters. The staff definitely plans to look for synthetic pyrethroids and methoprene in sediments. Tomlinson explained that there is a screen for all 14 pyrethroids. In addition, the staff would also like to look for fiprinol, because it's been an issue in sediments in California. Jennings noted that the advantage of working with the Montana lab is that they can screen for lots of things at once, so we don't have to pick and choose based on funds available.

b. RWC, Inc. variance permits for Chapters 22 and 29 for railroad rights-of-way—H. Jennings
c. MDOT variance permit for chapter 29 for control of phragmites—H. Jennings
    - Sherman Marsh Phragmites Control Ongoing Treatment Plan

12. Schedule of Future Meetings

June 27, August 8, and September 12, 2014, are tentative Board meeting dates. The June 27 meeting is planned to be held at Madison High School following a tour of Backyard Farms. The Board will decide whether to change and/or add dates.

Action Needed: Adjustments and/or Additional Dates?

- **August 8 will be the public hearing for rulemaking. October 24 and December 5 were added as meeting dates.**

13. Adjourn

- **Morrill/Granger: Moved and seconded to adjourn at 12:08 PM**
- **In Favor: Unanimous**

PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

TO: Board Members

FROM: Gary Fish, Manager of Pesticide Programs

Subject: Definition of "Food Production"

Board members may recall the discussion we had during the open forum at the Agricultural Trades Show regarding what constituted "food production," because it is an important term used in the statute that requires an Agricultural Basic Pesticide Applicator license, 22 MRS 1471-D (2-D) (*see excerpt below*). In order for the staff to be able to consistently inform growers about which practices require an Agricultural Basic license, a clear interpretation of the meaning of "food production" is needed from the Board.

- 2-D. (TEXT EFFECTIVE 4/1/15) Certification required; private applicator of general use pesticides for food production. **A private applicator of general use pesticides may not use or supervise the use of general use pesticides for food production without prior certification from the board**, except that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator. Additional certification under this section is not required for a person certified as a commercial applicator or a private applicator under subsection 1 or 2, respectively.

Upon searching the Code of Federal Regulations (CFR) and the Maine Revised Statutes (MRS), I could not find a single definition of "Food Production." All I could find were definitions for "Agricultural Production" and "Commercial Production" (*see below*). Neither of these addresses the issue directly.

- *Agricultural Production* means the cultivation, production, growing, raising, feeding, housing, breeding, hatching, or managing of crops, plants, animals, fish, or birds, either for fiber, food for human consumption, or livestock feed. (7 CFR Subpart A § 4280.3 Definitions.)
- *Commercial production* means growing, maintaining or otherwise producing agricultural plants for sale or trade, for research or experimental purposes, or for use in their entirety in another location. Commercial production includes producing agricultural plants for use by the agricultural employer or agricultural establishment instead of purchasing the agricultural plants. (40 CFR Part 170, EPA WPS)

Some practices growers have asked for clarification as to whether or not they constitute "food production" include:

- growing vegetable seedlings for sale to home gardeners
- sanitizing containers, benches or other surfaces to prepare for growing the crop
- post-harvest treatments applied directly to the food or applied to food boxes, containers or storage bins

I also asked Jim Dill to explain what he thought the ACF Committee had in mind when the statute was developed and he said," I saw production as basically once the plant had emerged until the crop was harvested and put into the marketplace. I really hadn't thought about post-harvest treatment. I'm thinking not to include it, but could go either way on it."

Your decision will help us move ahead as we plan to reach out to growers as the April 15, 2015 deadline approaches.

LAW WITHOUT GOVERNOR'S SIGNATURE

APRIL 16, 2014

CHAPTER

548

PUBLIC LAW

STATE OF MAINE

IN THE YEAR OF OUR LORD

TWO THOUSAND AND FOURTEEN

H.P. 1299 - L.D. 1808

An Act To Protect the Public from Mosquito-borne Diseases

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 7 MRSA c. 6-A is enacted to read:

CHAPTER 6-A

MANAGEMENT OF MOSQUITOES

§171. Management of mosquitoes for protection of public health; state policy

It is the policy of the State to work to find and implement ways to prevent mosquito-borne diseases in a manner that minimizes risks to humans and the environment. The State, led by the department and the Department of Health and Human Services pursuant to this chapter and Title 22, chapter 257-B, respectively, shall monitor mosquito-borne diseases and shall base mosquito management methods, including potential pesticide use, on an evaluation of the most current risk assessments. On a continuing basis, the State shall research and evaluate means of reducing disease-carrying mosquitoes without the use of pesticides. When the Department of Health and Human Services determines that the disease risk is high and public education efforts are insufficient to adequately prevent mosquito-borne diseases in the State, the Department of Health and Human Services may declare a mosquito-borne disease public health threat pursuant to Title 22, chapter 257-B and the State may undertake emergency activities to reduce disease-carrying mosquito populations that threaten the health of residents of this State. The State in undertaking emergency activities shall use a combination of the lowest risk, most effective integrated pest management techniques and science-based technology and shall consult with officials from affected municipalities in determining the most appropriate combination of response strategies.

§172. Department lead agency; powers of commissioner

1. Lead agency. The department is the lead agency of the State for carrying out mosquito management activities as described in this chapter.

2. Management methods. The commissioner may use appropriate methods for the management of mosquitoes and the prevention of their breeding in a manner consistent with section 171, including, but not limited to, conducting or contracting for mosquito management activities and purchasing equipment necessary for the purposes of carrying out this chapter.

§173. Duties of commissioner

1. Study; plan; arrange cooperation. When sufficient money for such purposes is available in the fund, the commissioner, in cooperation with appropriate personnel from the Department of Health and Human Services, shall:

A. Consider and study mosquito management problems, including mosquito surveillance;

B. Identify means of managing disease-carrying mosquitoes in a manner that minimizes pesticide use;

C. Coordinate plans for mosquito management work that may be conducted by private landowners, groups, organizations, municipalities, counties and mosquito management districts formed pursuant to section 175; and

D. Arrange, to the extent practicable, cooperation among state departments and with federal agencies in conducting mosquito management operations within the State.

2. Consultation. The commissioner shall consult with the University of Maine Cooperative Extension and private sector experts and municipalities in developing plans and procedures for implementing this chapter.

3. Assist with disseminating information. When sufficient money for such purposes is available in the fund, the commissioner, in cooperation with appropriate personnel from the Department of Health and Human Services and experts from the University of Maine Cooperative Extension, shall assist private landowners, groups, organizations, municipalities, counties and mosquito management districts formed pursuant to section 175 to disseminate information to the residents of the State about ways to reduce mosquito populations, to eliminate mosquito breeding sites and to protect themselves from mosquito-borne diseases as well as other relevant information.

4. Implement mosquito management response. When a mosquito-borne disease public health threat is declared by the Commissioner of Health and Human Services pursuant to Title 22, section 1447, the Commissioner of Agriculture, Conservation and Forestry shall implement an effective management response consistent with section 171. The management response must include combinations of integrated pest management techniques. The Commissioner of Agriculture, Conservation and Forestry shall consider the availability of funds in the fund in planning the response.

§174. Maine Mosquito Management Fund

The Maine Mosquito Management Fund, referred to in this chapter as "the fund," is established to carry out the purposes of this chapter. The fund consists of any money received as contributions, grants or appropriations from private and public sources. The

fund, to be accounted for within the department, must be held separate and apart from all other money, funds and accounts. Any balance remaining in the fund at the end of a fiscal year does not lapse but must be carried forward to the next fiscal year. The department may expend the money available in the fund and make grants to private landowners, groups, organizations, agencies, municipalities, counties, the University of Maine Cooperative Extension and mosquito management districts formed pursuant to section 175 to carry out the purposes of this chapter.

§175. Mosquito management districts

For the purposes of preserving and promoting the public health and welfare by providing for coordinated and effective management of mosquitoes, municipalities may cooperate with each other through the creation of mosquito management districts.

§176. Rules

The commissioner may adopt rules to carry out the purposes of this chapter. Rules adopted pursuant to this section are major substantive rules as described in Title 5, chapter 375, subchapter 2-A.

Sec. 2. 22 MRSA c. 257-B is enacted to read:

CHAPTER 257-B

MOSQUITOES

§1447. Lead agency for monitoring mosquito-borne diseases; declaring a public health threat

The department is the lead agency for monitoring for mosquito-borne diseases in the State and determining the severity of the threat to the public health. The Maine Center for Disease Control and Prevention shall create and maintain an arboviral illness surveillance, prevention and response plan for the purposes of alerting the public and other state, local and federal agencies about the existence of the threat so that appropriate actions may be taken. When available surveillance information indicates a strong likelihood of a human disease outbreak arising from mosquito-borne pathogens, the commissioner may declare a mosquito-borne disease public health threat in accordance with the Maine Center for Disease Control and Prevention arboviral illness surveillance, prevention and response plan. For purposes of this section, the department shall collaborate with the Department of Agriculture, Conservation and Forestry.

Sec. 3. Appropriations and allocations. The following appropriations and allocations are made.

AGRICULTURE, CONSERVATION AND FORESTRY, DEPARTMENT OF

Maine Mosquito Management Fund N179

Initiative: Provides an allocation of $500 to establish the new Maine Mosquito Management Fund within the Department of Agriculture, Conservation and Forestry to be used in monitoring and preventing mosquito-borne diseases.

OTHER SPECIAL REVENUE FUNDS	2013-14	2014-15
All Other	$0	$500
OTHER SPECIAL REVENUE FUNDS TOTAL	$0	$500

MAY 19 2014

Emera
Maine

May 14, 2014

Mr. Robert Batteese
Maine Department of Agriculture
Board of Pesticides Control
28 State House Station
Augusta, Me 04333-0028

Dear Mr. Batteese:

The purpose of this letter is to inform the Board of Pesticides Control that Emera Maine's Southern Operation Region plans to hydraulically spray fifty-three electric substations located in their service territory. (See attached list for substation locations)

The motorized hydraulic spraying will be conducted under a drift management plan that will be on file in Bangor Hydro's place of business. This plan and associated spray operation will work under stringent parameters to minimize the possibility of any off-sight pesticide drift. Our intent is to spray these fifty-three sites hydraulically this year and all our other locations will be sprayed with non-motorized low volume backpack sprayers. New sites may be added next year for potential hydraulic spraying. The board will be notified every year with a new list of sites that will be hydraulically sprayed. As always, Bangor Hydro will treat its transmission R-O-W corridors using non-motorized low volume backpack sprayers. This practice will most likely never change.

If you have any questions please feel free to contact me at (207) 973-2582 or mark.lamberton@emeramaine.com

Thank you,

Mark Lamberton
Supervisor of Vegetation Management

cc. Tom Kostenbader, Asplundh Tree Ex. Co.
cc. Neil lyons, Bangor Hydro-Electric Co.

2014
BANGOR HYDRO-ELECTRIC COMPANY (EMERA MAINE SOUTHERN OPERATION REAGION)
SUBSTATION TO BE HYDRAULICALLY SPRAYED

SUBSTATION	DESCRIPTION	TOWN	MAP #	HYDRAULIC
BIA	Local distribution	Bangor	1	YES
Boggy Brook	Line 60/11 switch	Ellsworth	2	YES
Broadway	Local distribution	Bangor	3	YES
Bucks Harbor	Local distribution	Bucks Harbor	4	YES
Burns Corner	Local distribution	Bar Harbor	5	YES
Cherry Field	Local distribution	Cherry Field	6	YES
Chester 115		Chester	7	YES
Chester 12.5	Local distribution	Chester	8	YES
Chester svc	MEPCO	Chester	9	YES
Costigan	Local distribution	Costigan	10	YES
Cutler	Local distribution	Cutler	11	YES
Deblois	Local distribution	Deblois	12	YES
Derby	Local distribution	Milo	13	YES
East Bangor	Local distribution	Bangor	14	YES
East Millinocket	Local distribution	East Millinocket	15	YES
Eastport	Local distribution	Eastport	16	YES
Ellsworth Falls	Line 68/10&12 switch	Ellsworth	17	YES
Enfield 115		Enfield	18	YES
Gouldsboro	Local distribution	Gouldsboro	19	YES
Graham 115 Switch Yard		Veazie	20	YES
Graham 115 Transformer Yard		Veazie	21	YES
Graham 46	Local distribution	Veazie	22	YES
Hampden	Local distribution	Hampden	23	YES
Harrington	Local distribution	Harrington	25	YES
Hermon	Local distribution	Hermon	26	YES
Hogan Rd.	Local distribution	Bangor	27	YES
Keene Bog	Gardner mill	Chester	28	YES
Keene Rd.	line 62/64 switch	Chester	29	YES
Lincoln	Local distribution	Lincoln	30	YES
Lucerne	Local distribution	Dedham	31	YES
Mattawamkeag	Local distribution	Mattawamkeag	32	YES
Medway Diesel	Diesel site only	Medway	33	YES
Milinocket	Local distribution	Milinocket	34	YES
Mill St.	Local distribution	Ellsworth	35	YES
Nicolin	Local distribution	Ellsworth	36	YES
Olamon	Local distribution	Olamon	38	YES
Orono	Local distribution	Orono	39	YES
Orrington	Locals and MEPCO sub	Orrington	40	YES
Pembroke	Local distribution	Pembroke	41	YES
Powersville	Line 62/GLH switch	TA R7 WELS	42	YES
Pushaw rd.	Line 50/73 switch	Bangor	43	YES
Scotts Hill	Local distribution	E. Machias	44	YES
Stanford	Local distribution	Enfield	45	YES
Surry	Local distribution	Surry	46	YES
Tibbetts St.	Local distribution	Brewer	47	YES
U of M 46	Local distribution	Orono	48	YES
Washington County	Local distribution	Jonesboro	49	YES
Water Works	Local distribution	Bangor	50	YES
Youngs Corner (Upper & Lower)	Locals and diesel	Bar Harbor	51	YES
Trenton	Local distribution	Trenton	52	YES
Keene 345	MEPCO tie	Chester	53	YES
Eppington substation		Columbia	54	YES
Columbia Switch station		Columbia	55	YES

SUBSTATION WHERE NO SPRAYING WILL BE PERFORMED

SUBSTATION	DESCRIPTION	TOWN	MAP #	
Hancock	Local distribution	Hancock	n/a	AQUIFER
Northeast Harbor	Local distribution	Mount Desert	n/a	WELL
Blue Hill	Local distribution	Blue hill	n/a	WELL

PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

May 20, 2014

Donald J. Dubois
Dubois Contracting
295 St. John Road
Fort Kent, ME 04743

RE: Variance Permit for CMR 01-026, Chapters 29 for Vegetation Control on the Fort Kent Levee

Dear Mr. Dubois:

This letter will serve as your variance permit for 2014 for broadcast application of herbicides along portions of the Ft. Kent levee. Please bear in mind that your permit is based upon your company adhering to the precautions listed in Section X of your April 30, 2014 application.

If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Henry Jennings
Director
Maine Board of Pesticides Control

PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

May 22, 2014

Robert W. Moosmann
Maine Department of Transportation, Bureau of Maintenance & Operations
16 State House Station
Augusta, Maine 04333-0016

RE: Variance permits for CMR 01-026, Chapters 22 and 29

Dear Mr. Moosmann:

This letter will serve as your 2014 variance permits covering Section 2 (C) of Chapter 22 and Section 6 of Chapter 29 for weed control along state maintained roads and other transportation facilities, **with the condition that Streamline (aminocyclopyrachlor/metsulfuron methyl) not be applied within 25 feet of water.** Please bear in mind that these variance permits require agency personnel and contractors to adhere to the measures outlined in Section X of your Chapter 22 permit application and Section IX of your Chapter 29 permit application.

I will alert the Board at its June 27, 2014 meeting that the variance permits have been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Henry Jennings

Henry Jennings
Director
Maine Board of Pesticides Control

PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

WALTER E. WHITCOMB
COMMISSIONER

HENRY JENNINGS
DIRECTOR

June 12, 2014

Tim Lindsay
Bartlett Tree Experts
PO Box 6828
Scarborough, Maine 04070

RE: Variance Permit for CMR 01-026, Chapter 29

Dear Mr. Lindsay:

The Board adopted a policy in 2013 allowing for the issuance of multi-year variances for the control of invasive species. In determining this policy the Board emphasized the need for a long-term plan for re-vegetation of the site, and demonstration of knowledge of efficacy and appropriate practices—the goal being to ensure that the site is reverted to native species, and not made available for another invasive species.

The Board also emphasized the fact that there is a native species of phragmites (*Phragmites americanus*) and care should be taken to ensure proper identification.

This letter will serve as your Chapter 29 variance permit until December 31, 2016 for the treatment of phragmites (*Phragmites australis* subsp. *australis*) on the site on Great Diamond Island. Please bear in mind that your permit is based upon your company adhering to the precautions listed in Sections V and X of your variance application. If it is determined that a different product needs to be used, you must contact the Board first and get a new variance.

If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Henry Jennings

Henry Jennings
Director
Maine Board of Pesticides Control

PAUL R. LEPAGE
GOVERNOR

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

WALTER E. WHITCOMB
COMMISSIONER

HENRY JENNINGS
DIRECTOR

June 16, 2014

Ronald Lemin
RCL Services LLC
291 Lincoln Street
Bangor, ME 04401

RE: Variance Permit for CMR 01-026, Chapter 29

Dear Mr. Lemin:

On November 18, 2011, the Board authorized the staff to issue permits for broadcast pesticide applications within 25 feet of water for control of plants that pose a dermal toxicity hazard. On December 13, 2013, the Board authorized the staff to issue multi-year permits for broadcast pesticide applications within 25 feet of water for control of invasive plants provided the applicator has demonstrated knowledge of best management practices for control of the plant and has a re-vegetation plan for the site.

By way of this letter, your request for a variance from the 25-foot setback requirement contained in Chapter 29, Section 6 is hereby granted for the treatment of a Giant Hogweed infestation in the vicinity of Ohio Street in Bangor. This variance is valid until December 31, 2016. Please bear in mind that your permit is based upon your company adhering to the precautions listed in Section X of your variance application; also, the Board does require that you notify them if there is a change in products to be used.

We will alert the Board at its June 27, 2014 meeting that the variance permit has been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Henry Jennings

Henry Jennings
Director
Maine Board of Pesticides Control

TITLE II
OGUNQUIT MUNICIPAL CODE
HEALTH, SAFETY & WELFARE

[Additions are underlined, deletions are ~~struck out~~]

CHAPTER 11 Pesticide/Herbicide Usages ~~on Town-Owned Lands~~

1101 Purpose

The purpose of this chapter is to safeguard the health and welfare of the residents of the Town of Ogunquit and to conserve and protect the town's ground water, estuarine, marine and other natural resources, while ensuring preservation ~~and enhancement of town-owned~~ of the land.

1102 Provisions.

The following provisions shall be applicable to all turf, landscape and outdoor pest management activities ~~on town-owned~~ conducted within the Town of Ogunquit, on both public and private land.

(a) *Permitted:*

1102.1 Use or application of natural, organic land care protocols.

1102.2 All control products and soil amendments, including fertilizer and compost, used under the terms of this article shall be in keeping with, but not limited to, products that can be used on Maine Organic Farmers and Gardeners Association Certified Farms, and/or products permitted by the Organic Materials Review Institute or the USDA National Organic Program.

1102.3 Use or application of sludge or sludge-derived products to the extent permitted by the Maine Hazardous Waste, Septage and Solid Waste Management Act 38 M.R.S.A. §§1301-1319-Y, the Protection of Natural Resources Act 38 M.R.S.A. §§ 480-A-480-Z, the Site Location of Development Act 38 M.R.S.A.§ 481-490, and any rules related thereto, as amended from time to time.

(b) *Prohibited:*

1102.4 Use or application of chemical pesticides, other than pesticides classified by the US Environmental Protection Agency as exempt materials under 40 CFR 152.25, and those products permitted by the Organic Materials Review Institute.

1102.5 Use or application of sludge or sludge-derived products not listed as permitted above.

1103 Definitions

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Natural, organic land care: An extension of the principles and practices of organic agriculture to the care of turf and landscape.

Pesticide: Any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest; any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant; and any nitrogen stabilizer. It does not include multicellular biological controls such as mites, nematodes, parasitic wasps, snails or other biological agents not regulated as pesticides by the U.S. Environmental Protection Agency. Herbicides, fungicides, insecticides and rodenticides are considered pesticides.

Sludge: Defined in 38 M.R.S.A. § 1303-C (28-A), as amended from time to time.

~~**Town-Owned Land:** All land owned or leased by the Town of Ogunquit and/or managed by the Town, including outdoor grounds such as parks, playing fields, the Marginal Way, or conservation and open space.~~

Pest: Any undesirable insect, plant, fungi, bacteria, virus or micro-organism.

1104 Exemptions

The following processes are exempt: drinking water and wastewater treatment; indoor pesticide use; contained baits or traps for rodent control; use of pesticides classified by the US Environmental Protection Agency as exempt materials under 40 CFR 152.25 or pesticides permitted by the Organic Materials Review Institute; management of town-owned land not used or used infrequently by the public (roadway medians, for example).

A specific exemption is made for poison ivy control on the Marginal Way, using the least toxic product in accordance with the US Environmental Protection Agency under 40 CFR 152.5, the Maine State Regulations Title 7 and Title 22:

"Use of Pesticides", and the *Best Management Practices for the Application of Turf Pesticides and Fertilizers* of the Maine Board of Pesticide Control.

Restricted pesticides may also be applied for the following purposes:

1. **Noxious Growths** – The control of plants, including and not limited to, poison ivy (Rhus radicans or Toxicodendron radicans), poison oak (Rhus toxicodendron or Toxicodendron quercifolium), and poison sumac (Rhus vernix or Toxicodendron vernix).

2. **Invasive Species** – The control of invasive species that may be detrimental to the environment.

3. **Mandatory Applications**- Use of pesticides mandated by state or federal law.

4. **Health and Safety** – The control of insects that are venomous or disease carrying.

1105 Emergency waiver

If an emergency situation warrants the use of non-exempt pesticides, the Code Enforcement Officer may ~~, upon written request to the Board of Selectmen,~~ grant a thirty (30) day temporary waiver. The waiver may be extended to a six (6) month total period. Waiver approval shall be subject to the use of the least toxic material available to address the given emergency. The presence of weeds or common fungal diseases in the usual course of turf maintenance shall not constitute an emergency.

(a) *Waiver determination shall be based on the following criteria:*

1105.1 The pest situation presents a) an immediate threat to human health or environmental quality, or b) an immediate threat of substantial property damage or loss; and

1105.2 Viable alternatives consistent with this article do not exist. The Select Board shall request the Conservation Commission to review any waiver requests made under this section, and to recommend a course of action.

1106. Enforcement and permits

This article shall be enforced by the Code Enforcement Officer, according to the policies governing enforcement of municipal ordinances of the Town of Ogunquit.

1107. Conflict and invalidity

If a conflict or inconsistency is found between this article and other sections of the Zoning Ordinance or Town Charter, the terms of the stricter provisions shall prevail. The invalidity of a provision of this article shall not invalidate any other provision of this article.

1108. Authority

Pursuant to 30-A M.R.S.A. § 3001, municipalities may enact ordinances to protect the welfare of their inhabitants. Pursuant to 22 M.R.S.A. § 1471-U, Maine municipalities may enact ordinances that apply to pesticide storage, distribution, or use. Pursuant to 38 M.R.S.A., § 1310-U, municipalities may enact ordinances with respect to solid waste facilities with standards that are not more strict than those contained in the Maine Hazardous Waste, Septage and Solid Waste

Management Act 38 M.R.S.A. §§ 1301-1319-Y, the Protection of Natural Resources Act 38 M.R.S.A. §§ 480-A-480-Z, the Site Location of Development Act 38 M.R.S.A.§ 481-490, and the rules adopted under those articles, as amended from time to time.[1]

IN WITNESS WHEREOF, UNDER SEAL OF THE TOWN, this Ordinance as duly approved by the voters acting on Article 11 at an Annual Town Meeting held on June 14, 2011.

Ordinance Change Effective January 1, 2015

Maine Board of Pesticides Control

Miscellaneous Pesticides Articles
June 2014

(identified by Google alerts or submitted by individuals)

Pesticide illness cases show jump this spring in Washington

By Kate Prengaman of the Yakima Herald-Reupblic

- As of Tuesday, May 13, 2014

The state Department of Heath reports a spike in pesticide-related illnesses, with 60 people becoming ill so far this spring.

In total, 15 pesticide exposure events have been reported to the Health Department in the past two months, which is as many as the agency normally sees in a year, spokeswoman Kelly Stowe said.

All of the recent cases have occurred in Eastern Washington in counties with lots of orchards. Most of the exposures are believed to be the result of pesticide drift — when the chemical spray drifts away due to wind or improper application.

Stowe said the two cases reported in Yakima County both affected one person. In one case, an employee was exposed and had to be taken to the emergency room for treatment. In another, a bystander was exposed, but declined medical attention.

The state Department of Agriculture is investigating 13 drift complaints as of Monday, including nine that affected two or more people, said spokesman Hector Castro. The highest number of cases are in Grant and Chelan counties, he added.

“To see this many pesticide drift cases this early in the season is a concern,” Castro said.

The Agriculture Department is only investigating one case in Yakima, in which a fungicide drifted from an orchard onto a neighboring residence. Joel Kangiser, Pesticide Compliance Program manager, said it could be the same situation that the Health Department referred to as the bystander case, but he couldn’t be sure.

Incidents that involve workers exposed on the job are investigated by the Department of Labor and Industries, Kangiser added, which typically explains the difference in case numbers.

His office also issued a news release Monday reminding pesticide applicators to take steps to reduce drift and exposure.

Such steps include evaluating the winds, ensuring that all workers are wearing protective equipment and scouting adjacent areas to make sure no one is in the treatment zone.

Last year, the Agriculture Department pursued enforcement actions in 28 cases of pesticide drift.

Using beekeepers' real world experience to solve beekeepers' real world problems
Be Included, Be Involved, Bee Informed

Colony Loss 2013-2014

Posted on **May 15, 2014** by **The Bee Informed Team**

Preliminary Results: Honey Bee Colony Losses in the United States, 2013-2014

May 6, 2014

Dennis vanEngelsdorp[1]*, Nathalie Steinhauer[1], Karen Rennich[1], Michael Wilson[2], Kathy Baylis[3], Dewey M. Caron[4], Keith S. Delaplane[5], Jamie Ellis[6], Kathleen Lee[7], Eugene J. Lengerich[8], Jeff Pettis[9], Robyn Rose[10], Ramesh Sagili[4], John Skinner[2], Angela M. Spleen[8], David R. Tarpy[11], Dominic Travis[7], James T. Wilkes[12] for the Bee Informed Partnership.

Note: *This is a preliminary analysis. A more detailed final report is being prepared for publication at a later date.*

The Bee Informed Partnership (http://beeinformed.org), in collaboration with the Apiary Inspectors of America (AIA) and the United States Department of Agriculture (USDA), is releasing preliminary results for the eighth annual national survey of honey bee colony losses. For the 2013/2014 winter season, 7,183 beekeepers in the United States (U.S.) responded. Collectively, they managed 564,522 colonies in October 2013, 21.7% of the country's 2.6 million colonies.

For the winter of 2013/14, 23.2% of managed honey bee colonies in the U.S. died. Nearly two-thirds of the respondents (65.4%) experienced winter colony loss rates greater than the average self-reported acceptable winter mortality rate of 18.9%. The 2013/14 winter colony loss rate of 23.2% is 7.3 points (or 23.9%) lower than the previous years' (2012/13) estimate of 30.5% loss. (Figure 1) and is notably lower than the 8-year average total loss of 29.6% .

Preliminary results for the 2013/14 survey indicate that 20.0% of all colonies managed between April 1 2013 and Oct 1 2013 died. Responding beekeepers who managed bees over the entire April 2013 – April 2014 survey period reported losing 34.2% of the 670,568 colonies managed over this period. The annual loss differs from the sum of summer and winter losses reported above because the respondent pool differed as only respondents who reported for both the summer and winter period are included in the annual loss rate calculation.

The 2012/13 survey expanded beyond only winter mortality estimates to improve our understanding of colony losses by also reporting on summer and annual colony mortality rates. Results from the 2012/13 survey indicated that that summer colony losses (between April 1 2012 and Oct 1 2012) were 25.3%. Loss estimate for the 12-month period (between April 1, 2012 and March 30, 2013) was 45.2%.

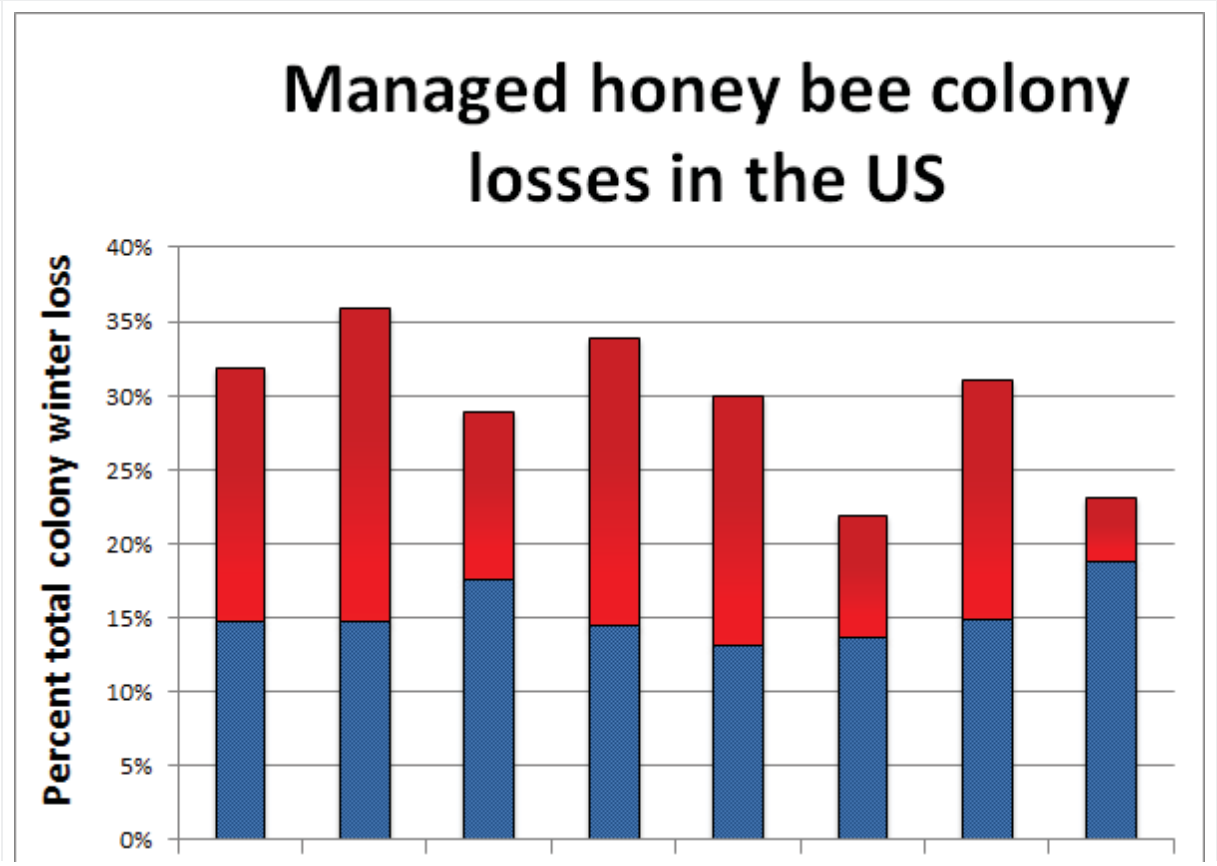
This survey was conducted by the Bee Informed Partnership, which receives a majority of its funding from the National Institute of Food and Agriculture, USDA (award number: 2011-67007-20017).

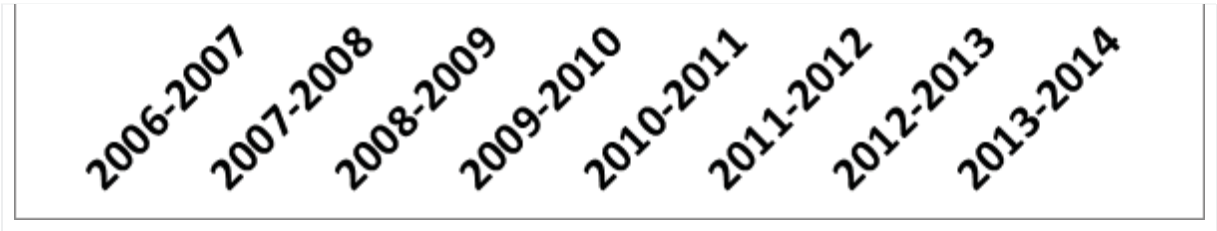
1. University of Maryland, dennis.vanengelsdorp@gmail.com, 717-884-2147
2. University of Tennessee
3. University of Illinois
4. Oregon State University
5. University of Georgia
6. University of Florida
7. University of Minnesota
8. The Pennsylvania State University – Hershey
9. USDA-ARS Bee Research Lab
10. USDA Animal and Plant Health Inspection Service
11. North Carolina State University
12. Appalachian State University

*Corresponding author

1. Based on NASS Honey report 2013 figures

2. Previous survey results found a total colony loss in the winters of 30.5% in the winter of 2012/2013, 21.9% in 2011/2012, 30% in 2010/2011, 34% in 2009/2010, 29% in 2008/2009, 36% in 2007/2008, and 32% in 2006/2007 (see figure attached)





— Figure 1: Summary of the total overwinter colony loss (October 1 – April 1) of managed honey bee colonies in the US across the 8 annual national surveys (red bars). The acceptable range (blue bars) is the average percentage of acceptable loss declared by the survey participants in each of the 8 years of the survey.

Like Send Tweet g+1 Share tumblr Submit Digg This Story
http://beeinformed.org/wp-content/uploads/2014/05/ColonyLossWinterup2014-v2-150x134.png
reddit this! Share

This entry was posted in **Results**, **Winter Loss Survey** by **The Bee Informed Team**. Bookmark the **permalink [http://beeinformed.org/2014/05/colony-loss-2013-2014/]** .

About The Bee Informed Team

The Bee Informed Team regularly announces the release of results at beeinformed.org. The Bee Informed Partnership is an extension project that endeavors to decrease the number of honey bee colonies that die over the winter. A listing of all project activity reports can be found at the **'Results'** tab above. Results published in scientific journals are included as links. Who's on the team? See the **Team Pages.**

View all posts by The Bee Informed Team →

7 THOUGHTS ON "COLONY LOSS 2013-2014"

Pingback: Updates: news releases and updates

Pingback: Bee losses highlight urgent need to restrict pesticides, shift to sustainable agriculture | Ecocide Alert

Pingback: Yearly Survey Shows Better Results for Pollinators, but Losses Remain Significant | AgNetWest

Pingback: Honeybee deaths went down last winter, survey finds | Science Recorder

Don Blume

on **May 15, 2014 at 5:40 pm** said:

It would be helpful to see a state-by-state or at least a regional breakdown of the data. Obviously, hives in the southwestern US this past winter were exposed to dramatically different conditions than here in Connecticut, where I am a suburban gardener.

I have yet to see a honeybee in my garden this year, and have been fortunate that queen bumblebees are present and have been busy as bees.

One more thought: what do we know about residential uses of neonicotinoids like Imidicloprid in lawn and garden products? Garden centers, Home Depots and Lowes in this area push these products hard.

D.B.

Pingback: US bee losses drop but not far enough : Nature News Blog

Pingback: Honeybee deaths went down last winter, survey finds – Science Recorder | Latest News Portal Info

Bulletin of Insectology **67** *(1): 125-130, 2014*
ISSN 1721-8861

Sub-lethal exposure to neonicotinoids impaired honey bees winterization before proceeding to colony collapse disorder

Chensheng Lu[1], Kenneth M. Warchol[2], Richard A. Callahan[3]
[1]*Department of Environmental Health, Harvard School of Public Health, Landmark Center West, Boston, MA, USA*
[2]*Worcester County Beekeepers Association, Northbridge, MA, USA*
[3]*Worcester County Beekeepers Association, Holden, MA, USA*

Abstract

Honey bee (*Apis mellifera* L.) colony collapse disorder (CCD) that appeared in 2005/2006 still lingers in many parts of the world. Here we show that sub-lethal exposure of neonicotinoids, imidacloprid or clothianidin, affected the winterization of healthy colonies that subsequently leads to CCD. We found honey bees in both control and neonicotinoid-treated groups progressed almost identically through the summer and fall seasons and observed no acute morbidity or mortality in either group until the end of winter. Bees from six of the twelve neonicotinoid-treated colonies had abandoned their hives, and were eventually dead with symptoms resembling CCD. However, we observed a complete opposite phenomenon in the control colonies in which instead of abandonment, they were re-populated quickly with new emerging bees. Only one of the six control colonies was lost due to *Nosema*-like infection. The observations from this study may help to elucidate the mechanisms by which sub-lethal neonicotinoids exposure caused honey bees to vanish from their hives.

Key words: colony collapse disorder, CCD, honey bee, neonicotinoids, imidacloprid, clothianidin.

Introduction

Since its emergence in 2005/2006, the continuing significant losses of honey bees (*Apis mellifera* L.) colonies resulting from the symptomatic disease of colony collapse disorder (CCD) has demonstrated our inability to identify and eradicate the responsible cause(s) of CCD (BBC News, 2013; The New York Times, 2013; vanEngelsdorp *et al*., 2008). While the prevailing opinions suggest the linkage of CCD to multi-factorial causes including pathogen infestation, beekeeping practices (including malnutrition), and pesticide exposure in general (Cox-Foster *et al*., 2007; Blanchard *et al*., 2008; Higes *et al*., 2008; vanEngelsdorp *et al*., 2009; Alaux *et al*., 2010; de Miranda *et al*., 2010; Williams *et al*., 2010; Di Prisco *et al*., 2011; Vidau *et al*., 2011; USDA, 2013), this notion ignores the differential mortality symptoms; in particular hive abandonment in CCD *vs.* diseased colonies. However, recent scientific findings linking CCD with exposure to neonicotinoids, a group of systemic insecticides, appear to be gaining traction (Maini *et al*., 2010; Pareja *et al*., 2011; Lu *et al*., 2012; Farooqui, 2013; Matsumoto, 2013) and have led to new regulatory control (Erickson, 2012). In this study, we extend our previous study (Lu *et al*., 2012) showing that sub-lethal exposure of imidacloprid and clothianidin affected the winterization of healthy honey bee colonies that subsequently leads to CCD.

Materials and methods

In order to investigate the detrimental effects of sub-lethal neonicotinoid exposure in healthy honey bee colonies, we utilized the split-plot lifecycle study design in which honey bees are fed with pre-determined known amounts of neonicotinoids and allowed to freely forage in the environment. We then assessed their hive growth and strength, as well as their mortality and morbidity, throughout the lifecycle including multiple worker bee generations. The setup and management of eighteen study colonies (using 10-frame Langstroth pine hive) in three apiaries in central Massachusetts was identical to that previously described (Lu *et al*., 2012). At each apiary, we separated six colonies into two groups in which honey bees were fed with either sucrose water or high-fructose corn syrup (HFCS) over the study period. Each sugar group consisted of two neonicotinoid-treated and one control colonies replicated in each of the three apiaries. We purchased sucrose from a local food store and HFCS from a beverage company. Both sugar waters made of sucrose and HFCS were analyzed prior to be used in the experiment and found non-detectable residues of neonicotinoids using a published method (Chen *et al*., 2013). Starting from July 2nd 2012, we administered 258 µg of imidacloprid (1-(6-chloro-3-pyridinyl) methyl)-N-nitro-2-imidazolidinimine, CAS# 138261-41-3) or clothianidin (1-(2-chloro-1,3-thiazole-5-ylmethyl)-3-methyl-2-nitroguanidine, CAS# 210880-92-5) in 1.9 liter (0.5 gallon) of sucrose water and HFCS to the treated colonies each week, respectively, for thirteen consecutive weeks ending on September 17th 2012. Assuming each colony consisted of 50,000 bees at any given day in spring and summer, we administered 0.74 ng/bee/day of either imidacloprid or clothianidin to treated hives for 13 consecutive weeks. This dosage is far below the oral LD50 of 3.4 and 118.7 ng/bee for clothianidin and imidacloprid, respectively (Laurino *et al*., 2013). Control colonies were given neonicotinoid-free sucrose or HFCS throughout the experimental period. Sugar water (both types) was completely consumed by each colony at the end of each week during the 13-week neonicotinoids administration.

From June 29th to September 24th 2012, we assessed

the brood rearing production of all colonies on a bi-weekly basis using a modified brood assessment method as previously described (Lu *et al*., 2012). In brief, the 20-frames in each hive were scored cumulatively for the area covered by "sealed brood" which is the pupal stage of honey bee development. Brood was estimated by dividing the face of each side of frame into 32 squares (each square containing approximately 100 cells). All 20 frames in each hive were scored by visually estimating the number of squares of capped brood per frame face. All colonies were treated with Miteaway Quick strips for controlling *Varroa* mite on August 13th 2012, followed by Apistan strips from October 1st to November 15th 2012. The *Varroa* mite counts were assessed twice using the common alcohol wash method on August 13th (pre-Miteaway application) and August 22nd (post-Miteaway application). In addition, colonies were treated with Fumagillan-B [9.1 g dissolved in 7.6 liters (two gallons) of sucrose or HFCS] in early October 2012 to control *N. apis* and *N. ceranae*, two common intestinal parasites. Entrance reducers were installed before the hives were ready for winterization.

All colonies were monitored weekly beginning on late October 2012. Notes were taken on the size of the clusters observed by counting the numbers of frames containing honey bees from the top of the hive in which it generally took no more than 10 seconds. Starting from November 2012, hives were supplemented either with crystallized HFCS or with granular sucrose mixed into a thick water paste. The food was placed on waxed paper on top of the frames inside the inner covers. Data were analyzed using SPSS Statistics (version 20.0).

Results

We found honey bee colonies in both control and neonicotinoid-treated groups progressed almost identically, and observed no acute morbidity or mortality in either group until the arrival of winter. In addition, neither the locations where the hives were set up nor the type of sugar (high-fructose corn syrup vs. sucrose) fed to honey bees was associated with the brood rearing or the occurrence of CCD (one-way ANOVA). Therefore data from 3 apiary locations and two types of sugar were pooled in the data analysis. As temperatures began to decrease in late October 2012, we observed a steady decrease of bee cluster size in both control and neonicotinoid-treated colonies. While such decline was quickly reversed in the control colonies in January 2013, the neonicotinoid-treated hives continued to decline (figure 1). As shown in table 1, the numbers of frames containing bees were not significantly different among the treatments from 10/27/2012 to 12/29/2012 (one-way ANOVA), but became statistically significant different from 1/5/2013 to 4/4/2013 (one-way ANOVA, $p < 0.0001$). At the end of the experiment on 4/4/2013, there were 5.3, 2.0, and 2.9 frames of bees in the control, imidacloprid, and clothianidin-treated hives, respectively. The diminishing cluster size in the neonicotinoid-treated colonies led to the loss of six of the twelve (50%) with symptoms resembling CCD, whereas only 1 of the 6 control colonies was lost exhibiting *Nosema ceranae* like symptoms, although we did not perform any test to confirm *Nosema* infection in this control hive. No similar *Nosema*-like symptoms were

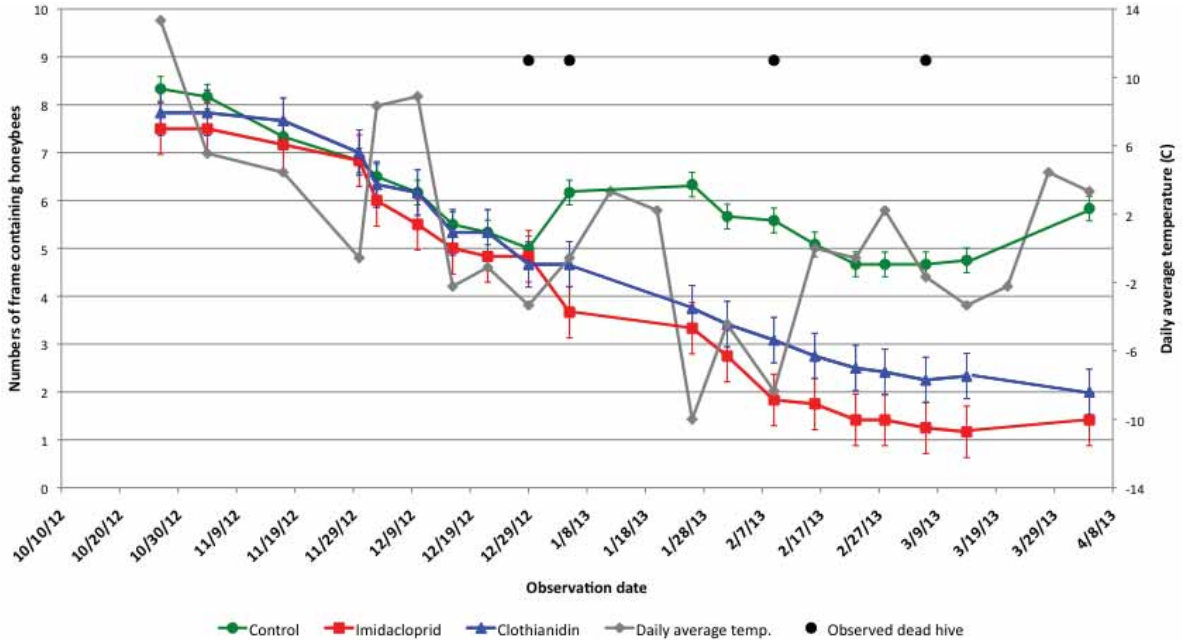


Figure 1. Average numbers of frame (standard deviations shown as error bars) containing honeybees for control-, imidacloprid-, and clothianidin-treated colonies and the corresponding daily average temperature at Worcester regional airport in Worcester MA recorded from October 2012 to April 2013. The daily average temperature readings were obtained from the NOAA website (http://cdo.ncdc.noaa.gov/qclcd/QCLCD).

Table 1. Field recording data from honey bee hives treated with control, imidacloprid, and clothianidin in sucrose water or high-fructose corn syrup (HFCS) from May 2012 to April 2013.

Treatment	Control		Imidacloprid		Clothianidin	
	Sucrose	HFCS	Sucrose	HFCS	Sucrose	HFCS
Honey bee hives	3	3	3	3	3	3
Average # of frame with bees (SD) Recorded from 10/27/2012 to 12/29/2012	6.3 (2)	6.8 (2)	6.0 (3)	6.3 (3)	6.6 (2)	6.3 (2)
Average # of frame with bees (SD) Recorded from 1/5/2013 to 4/4/2013	5.8 (1)	4.9 (3)	1.8 (2)	2.2 (2)	2.9 (2)	2.9 (2)
# of dead colony (%)	0 (0)	1 (33.3)	2 (66.7)	2 (66.7)	1 (33.3)	1 (33.3)
Date of dead colony observed		3/7/2013	1/5/2013 2/9/2013	1/5/2013 3/7/2013	1/5/2013	12/29/12
Average *Varroa* mite counts						
Before treatment (SD)	10 (6) [a]	11 (3) [a]	11 (2) [a]	10 (3) [a]	12 (2) [a]	9 (4) [a]
After treatment (SD)	2 (2) [b]	1 (1) [b]	1 (1) [b]	2 (1) [b]	1 (1) [b]	1 (1) [b]
Pooled Data [c]						
Honey bee hives	6		6		6	
Average # of frame with bees (SD) Recorded from 10/27/2012 to 12/29/2012	6.6 (2) [d]		6.1 (3) [d]		6.5 (2) [d]	
Average # of frame with bees (SD) Recorded from 1/5/2013 to 4/4/2013	5.3 (2) [e]		2.0 (2) [e]		2.9 (2) [e]	
# of dead colony (%)	1 (17)		4 (67)		2 (33)	
Average *Varroa* mite counts						
Before treatment (SD)	10 (4) [f]		12 (2) [f]		10 (3) [f]	
After treatment (SD)	2 (1) [f]		1 (1) [f]		1 (1) [f]	

[a] *Varroa* mite counts were not significantly different before Miteaway Quick strips treatment between sucrose and HFCS in control, imidacloprid, and neonicotinoid-treated hives (one-way ANOVA);
[b] *Varroa* mite counts were significantly different after Miteaway Quick strips treatment between sucrose and HFCS in control, imidacloprid, and neonicotinoid-treated hives (one-way ANOVA);
[c] Data from two sugar treatments were pooled for control, imidacloprid, and neonicotinoid-treated hives;
[d] Numbers of frame containing bees were not significantly different among control, imidacloprid, and neonicotinoid-treated hives during this period of time (one-way ANOVA);
[e] Numbers of frame containing bees were significantly different among control, imidacloprid, and neonicotinoid-treated hives during this period of time (one-way ANOVA, $p < 0.0001$);
[f] *Varroa* mite counts were significantly different before and after Miteaway Quick strips treatment in control, imidacloprid, and neonicotinoid-treated hives (paired t-test, $p < 0.0001$).

observed in the treated hives. Upon close examination of colonies in early April 2013, we found that the majority of bees in all neonicotinoid-treated colonies, regardless of whether they survived or not, had abandoned their hives during the course of winter. However, we observed a complete opposite phenomenon in the control colonies in which instead of abandonment, hives were re-populated quickly with new emerging bees. The honey bee clusters in the six surviving neonicotinoid-treated colonies were very small, and were either without queen bees, or had no brood.

We found no significant difference in the degree of *Varroa* mite infection between the control and neonicotinoid-treated colonies. The average mite counts were 10-12 per 150 bees in the control and neonicotinoid-treated colonies, respectively, as assessed in mid-August 2012 (table 1). We later reduced the mite counts in all colonies to 1-2 mites per 150 bees after the applications of Miteaway Quick strips, a commonly used medicinal treatments prior to the arrival of winter in which it significantly reduced mite counts from 10-12 to 1-2 mites per 150 bees, respectively, in control, imidacloprid, and neonicotinoid-treated hives (paired t-test, $p < 0.0001$). We also found that neonicotinoids do not appear to affect the quality of brood rearing during summer and fall (figure 2). The sealed brood counts for both control and neonicotinoid-treated colonies decreased significantly in parallel from July to September 2012 (Pearson, 2-tails, $p < 0.0001$). This decreasing (slope = −0.62) trend has been reported previously (Lu *et al*., 2012), and is consistent with a dirth of nectar that is common in the New England area during the summer, and is therefore independent of neonicotinoid exposure.

Discussion

The results from this study not only replicate findings from the previous study on imidacloprid and extend to clothianidin, but also reinforce the conclusion that sublethal exposure to neonicotinoids is likely the main culprit for the occurrence of CCD (Lu *et al*., 2012). The survival of 5 out of 6 control colonies in the same apiaries where the neonicotinoid-treated colonies were set up augment this conclusion. The observation of winter temperature modulating the severity of CCD associated

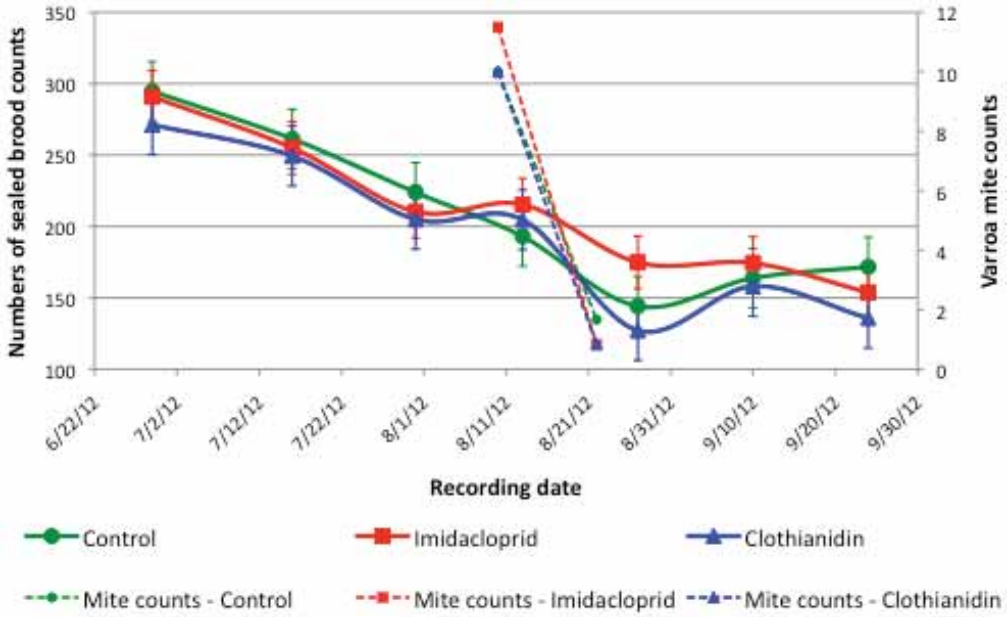


Figure 2. Average numbers of sealed brood count (standard deviations shown as error bars) for control-, imidacloprid-, and clothianidin-treated colonies during the dosing period (from 6/29/2012 to 9/24/2012), and the average numbers of *Varroa* mite counts recorded before and after Miteaway Quick strip treatment on 8/13/2012. Sealed brood counts were neither significantly different between sugars (one-way ANOVA) nor among treatments (one-way ANOVA). However, sealed brood counts were significantly decreased for all colonies from 6/29/2012 to 9/24/2012 (Pearson 2-tails, $p < 0.0001$).

with sub-lethal neonicotinoid exposure coincides with reports that CCD often occurs in the winter season. The modification of the sub-lethal effect of neonicotinoid by the severity of winter might be significant, and should not be overlooked in the evaluation of CCD epidemic. The previous study conducted during a colder winter reported 100% mortality of CCD in colonies treated with 0.1 ng/bee/day of imidacloprid (Lu *et al*., 2012), one-seventh of the dose used in the present study.

We found that chronic sub-lethal neonicotinoid exposures do not appear to compromise honey bees' immune resistance to pathogen infection in this study. This is in contrast to several earlier reports suggesting that the increased CCD mortality of honey bee colonies is due to reduced resistance toward common pathogens, such as increased susceptibility of *Nosema* infection, caused by neonicotinoid exposures (vanEngelsdorp *et al*., 2009; Alaux *et al*., 2010; Vidau *et al*., 2011; Pettis *et al*., 2012). The similar degree of *Varroa* mite infection in both control and neonicotinoid-treated colonies disagrees with the findings that CCD hives are often associated with significantly higher pathogen infestations than non-CCD hives exposures (vanEngelsdorp *et al*., 2009; Alaux *et al*., 2010; Vidau *et al*., 2011). In addition, a recent re-analysis of genomic data previously generated from RNA pools of CCD colonies has also excluded the association of pathogen infection and CCD (Tokarz *et al*., 2011). It is imperative to emphasize that while pathogen infections are common and serious diseases found in honey bees that often lead to colony death, the post-mortem examinations of the pathogen-caused dead colonies are vastly different to those suffered from CCD (Anderson and East, 2008; Lu *et al*., 2012). One of the defining symptomatic observations of CCD colonies is the emptiness of hives in which the amount of dead bees found inside the hives do not account for the total numbers of bees present prior to winter when they were alive (figure 3). On the contrary, when hives die in the winter due to pathogen infection, like the only control colony that died in the present study, tens of thousands of dead bees are typically found inside the hives (figure 4). The absence of dead bees in the neonicotinoid-treated colonies is remarkable and consistent with CCD symptoms.

Two critical questions remain to be answered in order to solve the CCD puzzle. First, why do neonicotinoid-treated colonies lose their ability to renew brood rearing toward the end of winter when temperatures began to rise? Considering that neonicotinoid-treated and control colonies had identical brood rearing performance prior to the arrival of winter (figure 1), the failure of neonicotinoid-treated colonies to resume brood rearing, in particular during the transition from winter to spring might be part of the interplay between sub-lethal neonicotinoid exposure and CCD. While it is true that the lack of brood rearing might simply be due to smaller surviving clusters during cold winter months, the surviving neonicotinoid-treated colonies never re-initiated the brood rearing into warm weather. We found that the severity of CCD caused by sub-lethal neonicotinoid exposures might be modulated by winter temperature. A colder and prolonged winter in 2010/2011 in central Massachusetts rendered a higher CCD mortality rate of 94% (Lu *et al*., 2012) than the current 50% in 2012/2013. Such disparity

Figure 3. Picture of the bottom board taken from one of the dead neonicotinoid-treated colonies on March 1st, 2013. The numbers of dead bees in the six dead CCD colonies ranged from 200-600 dead bees.

Figure 4. Picture of the bottom board taken from the only dead control colony on March 1st, 2013. The volume of dead bees was estimated to be 3.5 l using 1-L graduate cylinder using Atkins (1986) method.

might be due to the fact that the daily average temperature was lower in 63 of 91 days in the winter of 2010/2011 than of 2012/2013. The overall average temperature in the winter months was −3.8 °C (25 °F) in 2010/2011, approximately 2.78 °C (5 °F) lower than in 2012/2013.

Second and perhaps the foremost; why do honey bees vanish from neonicotinoid-treated colonies during the winter? It is striking and perplexing to observe the empty neonicotinoid-treated colonies because honey bees normally do not abandon their hives during the winter. This observation may suggest the impairment of honey bee neurological functions, specifically memory, cognition, or behavior, as the results from the chronic sublethal neonicotinoid exposure. Although the failure to initiate brood rearing and the vanishing of the worker caste in the neonicotinoid-treated colonies might be governed by completely different mechanisms, they suggest the possible involvement of cascading events prior to the occurrence of CCD. The findings from this study could be used to elucidate mechanisms by which sublethal neonicotinoid exposure impairs honey bees' ability to over winter with symptoms consistent with CCD.

We conclude that when honey bees were exposed to either imidacloprid or clothianidin at a dose of 0.73 ng/bee/day for 13 consecutive weeks from July to September 2012, six of twelve previously healthy neonicotinoid-treated colonies died and all progressed to exhibit CCD symptoms during the winter months. The survival of control colonies and the absence of CCD-like symptoms in the only dead control colony not only augment this conclusion but also support the finding that chronic

sub-lethal neonicotinoid exposure do not appear to compromise honey bees' immunity toward pathogen infection. The mechanisms by which sub-lethal neonicotinoid exposure caused honey bees to vanish from their hives during the winter months needs to be elucidated.

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"AS IRRESISTIBLE AS IT IS MOVING" -MANOHLA DARGIS THE NEW YORK TIMES

WOU0

Fewer Honeybees Died Over the Winter, a Report Says

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Honeybees could be on their way back, according to a new federal report.

The collapse of bee populations around the country in recent years has led to warnings of a crisis in foods grown with the help of pollination. Over the past eight years, beekeepers have reported losses over the winter of nearly 30 percent of their bees on average.

The new survey, published on Thursday, found that the loss of managed honeybee colonies from all causes has dropped to 23.2 percent nationwide over the winter that just ended, down from 30.5 percent the year before. Losses reported by some individual beekeepers were even higher. Colony losses reached a peak of 36 percent in 2007 to 2008.

The survey of thousands of beekeepers was conducted by the Department of Agriculture and the Bee Informed Partnership, an organization that studies apian health and management.

“It’s better than some of the years we’ve suffered,” said Dennis vanEngelsdorp, a director of the partnership and an entomologist at the University of Maryland. Still, he noted, a 23 percent loss “is not a good number.” He continued, “We’ve gone from horrible to bad.”

He said there was no way to say at this point why the bees did better this year.

Jeff Pettis, the co-author of the survey who heads the federal government’s bee research laboratory in Beltsville, Md., warned that “one year does not make a trend.”

While much attention has been paid to colony collapse disorder, in which masses of bees disappear from hives, that phenomenon has not been encountered

in the field in the past three years, Dr. vanEngelsdorp said. Instead, what has emerged is a complex set of pressures on managed and wild bee populations that includes disease, a parasite known as the varroa mite, pesticides, extreme weather and poor nutrition tied to a loss of forage plants.

Treating colonies for the varroa mite, an Asian parasite that first reached the United States in 1987, seems to have the most direct effect on stemming losses, Dr. vanEngelsdorp said. “The beekeepers that are treating for varroa mites lose significantly fewer colonies than beekeepers that are not treating colonies for varroa mites,” and those who treat them four or five times a year do better than those who only treat them once or twice, he said.

The new report will not satisfy those who argue that the loss of bees can be traced to a class of pesticides known as neonicotinoids, especially one manufactured by Bayer.

Those views are supported by papers such as one published this month in the journal Bulletin of Insectology that found that six of 12 previously healthy colonies exposed to the pesticides died and all exhibited symptoms of colony collapse disorder in the winter.

Bayer attacked that study, saying that the lead author, Dr. Chensheng Lu of the Harvard School of Public Health, “greatly misdiagnosed colony collapse disorder” in the colonies he studied, and that he used dosages of the pesticide 10 times greater than what bees might encounter in the wild.

In an interview, Dr. Lu said that Bayer should reveal what it believes an “environmentally relevant” level of the pesticide should be.

Dr. vanEngelsdorp said that Dr. Lu and his colleagues gave the bees doses far beyond what they would encounter in nature, and over longer periods of time, so the new study only shows that “high doses of ‘neonics’ kill bees — which is not surprising.”

Rather than looking for a single chemical or class of chemicals, Dr. Pettis said, it is important to assess the interplay of parasites, illness, food sources and pesticides. “Nobody likes that kind of complicated story, but year to year, all those factors could play into colony health,” he added.

Eric Mussen of the University of California, Davis, said colony collapse disorder and other pressures have made beekeepers focus more intently on maintenance of their colonies than in the past.

"People are being forced now to look more carefully at their bees," he said. "If you don't take care of them, you lose them."

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Journeys Over a Hot Stove

Humorous stories/anecdotes from my travels around the country, with simple, delicious recipes.

The tick-borne Powassan virus – you don't want it

No food or comedy this week. I felt this story was important enough to tell it straight. Also, this blog has a mind of its own… it does what it does.

Beyond Lyme – a nightmare tick virus

The Centers for Disease Control and Prevention list 14 diseases that people can get from tick bites. Many of them are regional, like Heartland virus in the Midwest and Colorado tick fever in the Rockies, but there are six that are fairly widespread and can infect people here in Maine. Lyme heads the list for its prevalence (it's estimated that Lyme is carried by half of all deerticks, which are also known as blacklegged ticks) and for being at "top of mind" among people and the medical community here.

Lyme, a bacterial disease, has had plenty of attention among some of my fellow bloggers and also in the Bangor Daily News, and rightly so. It can make you very sick in the short term and spawn a host of health problems down the road. But the bacterium responds to aggressive antibiotic therapy, so many people make a full recovery after initial symptoms.

The tick-borne Powassan virus, on the other hand, doesn't respond to *anything*.

Lyn Snow's case

We were friends and neighbors of Lyn Snow and her husband Jack, whose house is just three doors up the road, and got together several times for dinner and other things, until Lyn took ill last November. She'd been out on a walk with a mutual friend, Jerry, and returned, unbeknownst to her, with a deertick lodged in her scapula. Two days later, she was sick enough to go to PenBay Medical Center, which found the tick, suspected Lyme and started intravenous antibiotics. She got progressively worse over the next few days, then became unconscious, and when her kidneys shut down she was transported to Maine Medical Center. She remained in a

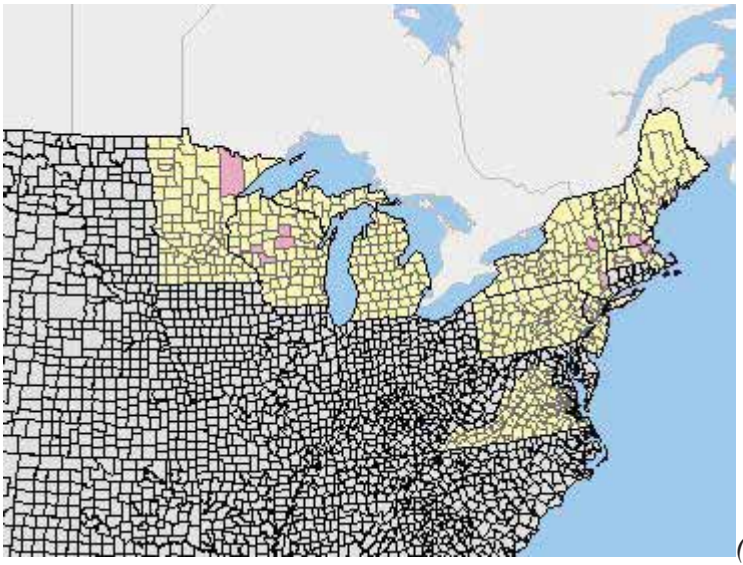
coma and was unresponsive to any stimuli. An EEG was performed, showing minimal brain activity.

About that same time – several weeks after the bite, her doctors sent blood samples to the labs at CDC's Division of Vector-Borne Diseases in Ft. Collins, Colorado. Tests indicated the pathogen was either Powassan or a variant strain of it. Case closed. There was nothing to be done.

Some five weeks after being bitten, life support was discontinued and Lyn died the following day. She was one of only 50 people in the U.S. (and the fifth in Maine) ever to contract Powassan, and only the fifth to die from it. Her story was covered widely in the media statewide, including this newspaper.

The virus and its surveillance

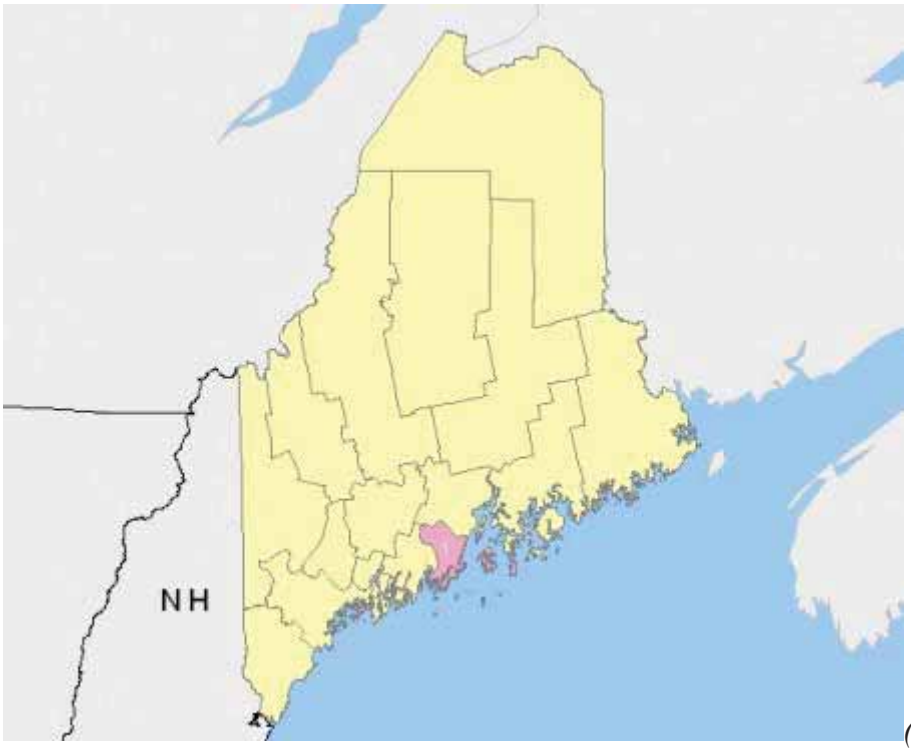
Powassan virus, named after the town of Powassan, Ontario where the first case was identified in the late 1950s (a young boy who died after a tick bite), can cause symptoms similar to encephalitis, including seizures, brain swelling, and loss of consciousness, and in 10% of the cases, death. Half the patients who survive suffer permanent and debilitatingly severe neurological damage.



(Cases testing positive for Powassan, 2013. Two fatal – in Poughkeepsie, NY, and here in So. Thomaston, ME)

As rare as it is, this is one very terrifying germ. It's almost certainly in the woods around us, but it's impossible to know just how prevalent it is. I spoke with Dr. Sheila Pinette, Director of Maine Centers for Disease Control in Augusta, and she added some important information: though the Powassan's host (or vector) is the deertick, it's believed the ticks come more frequently from woodchucks, mice, and squirrels than deer. Others have said the tick moves from the woodchuck to the deer, and then to humans. (See Maine CDC's Powassan page here). What makes it all so sinister is that, unlike with Lyme-bearing ticks, there is *no delay* between the bite and the transmission of the virus. Once it bites you, you have the virus. Maine Medical Center has an excellent web page on this virus and other tick-borne pathogens.

Maine CDC and the University of Maine seek more information about ticks, and to do this they want your ticks in the mail! The better the surveillance, the more we know about the risk level in our area.



(Lyn's case on a Powassan-positive map, 2013. Both maps from U.S. Geological Survey and Centers for Disease Control and Prevention)

I also spoke with Dr. Marc Fischer, epidemiologist at CDC's facility in Ft. Collins. His specialty is arboviruses, a name derived from **AR**thropod-**BO**rne viruses (arthropods include insects, arachnids, and crustaceans – animals with an exoskeleton and a segmented body). Dr. Fischer also directs ArboNET, a CDC-sponsored national surveillance system for arboviral diseases in the U.S. ArboNET was established in 1999 to respond to the spread of West Nile Virus, but has since expanded to surveil any disease-causing virus from insects and arachnids (which includes ticks), like Powassan. But ArboNET is a *passive* surveillance operation: they don't go out and collect ticks. They keep track of all arbovirus diseases reported to them by the medical community nationwide.

Dr. Fischer knew about Lyn Snow's case with Powassan. He indicated that surveillance of tick-borne diseases – especially those that mimic the symptoms of encephalitis – is catch-as-catch-can. Some clinicians don't find a tick bite and misdiagnose the disease. Others fail to report. But so far, it may be the best data collection effort out there.

Permethrin beats DEET

What to do? Any and everything possible to avoid tick bites. My wife and I bought several bottles of a permethrin clothing treatment, which is odorless and colorless: mix the solution in a

large plastic bag, add four or five pieces of tightly rolled-up clothing you wear a lot in summer, seal the bag, and massage the liquid throughout the clothing. After it soaks for two hours, you can remove the clothing and run it through the dryer. Permethrin-treated clothes can be washed and dried several times without diluting the chemical's effectiveness. It lasts a month or more. Then do it again! (The brand we bought is TickBlock, from Massachusetts).

Permethrin is hugely more effective than DEET at repelling and killing ticks. If a tick lights on permethrin-treated clothing, it will curl up, fall off, and die. Permethrin's toxicity to humans is also very low: it's used as an insecticide on fruits and vegetables, so we eat it all the time.

So that's about it. Ticks are here in abundance, and we don't know what they've got in them.

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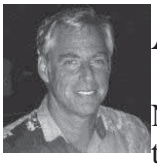
I want to thank Dr. Sheila Pinette, Director of Maine CDC in Augusta, and Dr. Marc Fischer, epidemiologist at CDC's (federal) Division of Vector-Borne Diseases in Fort Collins, Colorado, for their help in preparing this piece.



About Ned White

Ned White is an author, photographer, crossword constructor, humorist, traveler through 49 states, and an avid cook. He lives with his wife in South Thomaston.

http://hotstove.bangordailynews.com/2014/05/30/home/the-tick-borne-powassan-virus-you-dont-want-it/#.U4qVGELVMjA.twitter

Source: Bangor Daily News, May 30, 2014

Courthouse News Service

Thursday, June 05, 2014 Last Update: 4:58 AM PT

Environmentalists Fight New Pesticide

By RYAN ABBOTT

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WASHINGTON (CN) - Without consulting with expert biologists, the U.S. Environmental Protection Agency authorized a new pesticide that could affect as many as 1,377 federally protected species, environmental groups claim in court.

The Center for Biological Diversity, the Center for Food Safety and Defenders of Wildlife sued the EPA in Federal Court, challenging its authorization for widespread use of cyantraniliprole (CTP), a new pesticide that the agency expects to be used on a wide variety of agricultural crops, as well as golf courses, lawns, ornamental plants, fly bait and public health pests.

According to the lawsuit, CTP is a broad-spectrum systemic insecticide absorbed throughout plants.

"It kills by causing unregulated activation of ryanodine receptors, which results in unregulated muscle contraction, paralysis, and death," according to the complaint.

It adds: "Based on data showing the concentrations or amounts of CTP that cause direct effects, EPA classified the chemical as 'slightly to moderately toxic to freshwater fish; slightly toxic to estuarine/marine fish; slightly to very highly toxic to freshwater invertebrates; moderately to highly toxic to estuarine/marine invertebrates, highly toxic to benthic invertebrates; highly to very highly toxic to terrestrial insects' from acute exposures."

The groups claim that though the agency found that CTP was not acutely toxic to birds and mammals, their offspring showed "some impacts to weight and effects to thyroid and liver from chronic exposures."

Their complaint accuses the EPA of lacking information for specific species before performing a risk analysis.

"While EPA admitted that it lacked the ability to make determinations about the specific species and habitats affected by CTP, it 'identified a total of 1,377 listed species that overlap at the county-level with areas where cyantraniliprole is proposed to be used ... This preliminary analysis indicates that there is a potential for cyantraniliprole use to overlap with listed species and that a more refined assessment is warranted,'" the complaint states. "Based on these risks, several entities, including some of the plaintiffs here, urged EPA to consult with the Services before authorizing uses of cyantraniliprole."

The Services refers to the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service.

The EPA registered the pesticide in January, including product mixtures containing other pesticides such as thiamethoxam.

"Despite specific comments urging EPA to consult and EPA's conclusions in the Risk Assessment that additional analyses and cooperation with the Services were necessary, EPA finalized its CTP Registration Decision without consulting with NMFS or FWS as required by Section 7 of the ESA [Endangered Species Act]," states the complaint.

The groups say the government's authorization of the pesticide violates the Endangered Species Act. They want a court order vacating the EPA authorization of CTP use.

The groups' lead counsel is Patti Goldman, with Earthjustice, of Seattle.

Toxin-Resistant Corn Pest Thwarts Genetic Engineering Efforts

Posted By Matthew Heller On June 5, 2014 @ 5:00 am In Front Page: Health & Lifestyle,Health & Lifestyle,National,News,Top Stories | No Comments

Larry Hasheider walking along one of his corn fields on his farm in Okawville, Ill. (AP/Jeff Roberson)

LOS ANGELES — In a case of evolution outfoxing agricultural biotechnology, a voracious rootworm that was supposed to be poisoned by genetically-modified corn has become resistant to the toxins produced by the plant.

Populations of western corn rootworms, which used to cause billions of dollars in damage to U.S. crops, plummeted across the Midwest after Bt corn engineered to produce insecticidal toxins from the bacterium Bacillus thuringiensis was first planted in 1996. The toxins killed the worms and reduced the use of conventional pesticides, helping to make Bt corn so popular that it now accounts for three-quarters of the U.S. corn crop.

But according to a new study by entomologists at Iowa State University, the rootworm has rapidly developed a resistance to the toxins, with potentially disastrous consequences for farmers and the environment.

The Western Corn Rootworm

"Unless management practices change, it's only going to get worse," Aaron Gassmann, a co-author of the study, told Wired. "There needs to be a fundamental change in how the technology is used."

Gassmann has been studying Bt-resistant worms since 2009, when he looked into reports of extensive rootworm damage in Bt cornfields in northeast Iowa. Resistance has also been reported in parts of Illinois, Minnesota, Nebraska and South Dakota. The new paper describes further incidents of resistance in other parts of Iowa.

"These first cases of resistance by western corn rootworm highlight the vulnerability of Bt maize to further evolution of resistance from this pest," the study said.

Entomologists told Wired that the resistance is the result of farmers failing to set aside refuges where non-Bt corn could be planted, and biotech companies not enforcing the planting of refuges.

Within the non-Bt fields, Wired noted, rootworms would remain susceptible to the Bt toxin. By mating with any Bt-resistant worms that chanced to evolve in neighboring fields, they would prevent resistance from building up in the gene pool.

"Biotech companies have successfully lobbied [the U.S. Environmental Protection Agency] for major reductions in refuge

requirements," said entomologist Bruce Tabashnik of the University of Arizona. He and other scientists have pushed the EPA to double the current requirements, but so far without success.

Farmers likely won't stop using Bt corn because it is still effective against other pests. But as rootworms become more resistant, Gassmann said, farmers will turn to insecticides, increasing their costs and forfeiting the ecological benefits originally gained by using Bt corn.

The results of the new study "illustrate that Bt crops producing less than a high dose of toxin against target pests may select for resistance rapidly; consequently, current approaches for managing Bt resistance should be reexamined," the Iowa State researchers concluded.

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Print Page

By Colleen Quinn
State House News Service

June 05. 2014 5:27PM

House agrees to bill aimed at keeping mosquito population down

BOSTON -- Municipal public works employees and seasonal workers would be given back the authority to drop non-toxic pesticide pellets into storm drains in an effort to prevent an outbreak of mosquito-borne diseases, under a bill that has cleared the Massachusetts House.

Cases of West Nile virus and Eastern Equine Encephalitis (EEE) surged in the last few years, and in 2012 two Massachusetts residents' deaths were attributed to the mosquito-borne diseases.

State public health officials believe this year could bring another high-risk season.

Mosquitoes with West Nile live in small containers of standing water, and transfer the disease to humans. EEE is carried by birds and spread bird-to-bird by mosquitoes.

The legislation (H 3568) would restore emergency authority to public works employees to use pesticides in catch basins.

Tom Philbin, a legislative analyst for the Massachusetts Municipal Association, said allowing DPW workers to apply pesticides in storm drains will help wipe out breeding grounds for mosquitoes.

"It could save lives, and it doesn't cost communities any money," he said Thursday.

Public works employees were allowed to drop pesticides in catch basins from 2001 to 2009, but in 2010 the Department of Agricultural Resources decided against renewing employees' ability to use the pesticides. State law reverted back to allowing only licensed professional pesticide applicators, leaving the job mainly to those who work at local mosquito control commissions.

Mosquito control board members have urged lawmakers to once again allow municipal employees to drop the pesticides, saying it would help them do their job to stop the spread of diseases.

Municipal officials have tried for years to get the authority restored. The House last July advanced an earlier version of the bill (H 757) which was amended Thursday and passed on to the Senate.

http://www.metrowestdailynews.com/article/20140605/NEWS/140607686

Print Page

'Bee-safe' Biopesticide Could Be Neonicotinoid Alternative

UK researchers find new biopesticide that has limited effect on honeybees

Published on: **Jun 9, 2014**

A novel bio-pesticide created using spider venom and a plant protein has been found to be safe for honeybees, despite being highly toxic to a number of key insect pests, according to a study by UK-based Newcastle University.

The new research tested the insect-specific Hv1a/GNA fusion protein bio-pesticide – a combination of a natural toxin from the venom of an Australian funnel web spider and snowdrop lectin.

Feeding acute and chronic doses to honeybees – beyond the levels they would ever experience in the field – the team found it had only a very slight effect on the bees' survival and no measurable effect at all on their learning and memory.

Publishing their findings last week, the authors say the insect-specific compound has huge potential as an environmentally-benign, 'bee-safe' bio-pesticide and an alternative to the chemical neonicotinoid pesticides.

UK researchers find new biopesticide that has limited effect on honeybees

Though research prepared by the USDA and the U.S. EPA have determined there are several causes for declines in bee and pollinator populations, some studies have linked neonicotinoids to the declines. The EU has already authorized a ban on neonicotinoid seed treatments.

Related: NRCS Pledges $3 Million for Honey Bee Health

By pollinating some key crop species, honeybees make a vital contribution to food security. The decline of these insects raises significant concerns about farmers' ability to feed a growing population.

Newcastle professor Angharad Gatehouse, one of the supervisors on the project, says the study's findings suggest that Hv1a/GNA is unlikely to cause any detrimental effects on honeybees.

"Previous studies have already shown that it is safe for higher animals, which means it has real potential as a pesticide and offers us a safe alternative to some of those currently on the market," he says.

During the study, the bees were exposed to varying concentrations of the spider/snowdrop bio-pesticide over a period of seven days. Throughout the study period, the team carried out a series of memory tests and recorded any changes in behavior.

Related: House Subcommittee Reviews Bee Health Research

Honeybees naturally perform sophisticated behaviors while foraging that require them to learn and remember floral traits associated with food. Disruption to this important function has profound implications for honeybee colony survival, because bees that cannot learn will not be able to find food and return to their hives.

"This is an oral pesticide so unlike some that get absorbed through the exoskeleton, the spider/snowdrop recombinant protein has to be ingested by the insects," explained research lead Erich Nakasu, a PhD student at Newcastle University.

Unlike other pesticides, Hv1a/GNA affects an underexplored insecticidal target, calcium channels. These are more diverse than commonly-targeted insecticide receptors, such as sodium channels, and therefore offer the potential for more species-specific pesticides.

"Calcium channels are linked to learning and memory in bees so it's vital that any pesticide targeting them does not interfere with this process," Nakasu says.

Related: **Bee Health Campaign Suggests Neonicotinoid Treatments Unnecessary**

"Although Hv1a/GNA was carried to the brain of the honeybee, it had no effect on the insect which suggests the highly selective spider-venom toxin does not interact with the calcium channels in the bee."

The larvae were also unaffected by the Hv1a/GNA, as they were able to break it down in their gut.

"Around 90% of the world's plants are directly or indirectly reliant on pollinators to survive," says Dr. Geraldine Wright, one of the authors on the paper.

"If we destroy the biodiversity of pollinators then it will be irrelevant how effective our pesticides are because we won't have any crops to protect."

This research was funded by the UK'sTechnology Strategy Board.

Source: Newcastle

THE CONVERSATION

5 June 2014, 6.06am BST

Iconic monarch butterflies under threat from rising herbicide use

AUTHOR

John Pleasants
Adjunct Assistant Professor of Ecology, Evolution and Organismal Biology at Iowa State University

Monarch butterfly: not scared of wearing bold colours. Dean Morley, CC BY-ND

Monarch butterflies are known for their striking flame-orange and black appearance, and especially for their mass migration in their millions to spend winters in the mountain forests of Mexico. But despite growing problems with deforestation in Mexico, their struggle begins at home in the United States and Canada.

The butterflies that fly to Mexico are the great-great-great grandchildren of the monarchs that were in Mexico the previous winter. In 2013 the overwintering population in Mexico covered 0.67 hectares of fir forest (about 44 million butterflies) the lowest since counts began in 1994. Since 1999 their numbers have declined 82%.

What could have caused this? During their larval stage monarchs, which can be found from the US central states to the east coast and into southern Canada, feed exclusively on milkweed plants. We observed in 2001 that many monarchs were feeding on milkweeds in agricultural fields – more than 80% of monarchs from the Midwest. Since then, milkweeds in and around agricultural crop fields have gradually been eliminated, through a combination of spraying with Roundup (glyphosate) herbicide and increased planting of corn and soybeans genetically modified to be resistant to the herbicide.

In previous studies, we’ve shown that the magnitude of monarch population decline in Mexico matched the magnitude of the decline in the abundance of milkweeds in butterflies' prime breeding habitat – the Corn Belt region of the US. This strongly suggests that milkweed loss is the primary factor in the species' decline.

In a recently published paper, Tyler Flockhart and colleagues in Canada and Australia

examined the monarch population decline and tried to gauge the relative roles of all the factors that may lie behind it. Besides the loss of milkweeds in the breeding area, these include climate change, the loss of forests at the overwintering sites, and occasional catastrophic weather events.

The research team developed a population model that incorporated information about birth and death rates for each of the roughly four generations that comprise the monarch annual migration cycle. A number of pieces of information necessary to generate such a population model are unknown or poorly known, so assumptions had to be made. With that caveat, they were able to confirm that the primary driving force behind the population decline was loss of milkweeds in the breeding area, with the other factors playing a minor role.

With population models, not only can you examine the past but also extrapolate into the future. The good news is that the population model projects the population to decline by only a further 14% over the next century – much less than the precipitous drop in numbers over the last 20 years. The bad news is that the new, much lower population level makes the species more vulnerable to events such as catastrophic heatwaves or severe winters that can wipe out millions at a stroke. The model puts the chance of population extinction in the next century at a low but distinctly non-trivial 5%.

The monarch has equally fetching attire as a caterpillar.
Singer Ron/USFWS, CC BY

The chief reason why future declines will not be as pronounced is because milkweeds have been virtually eliminated from farmland, meaning that losses stemming from that habitat have already been accounted for. At present there are two main habitats that provide milkweeds for monarch butterflies.

The Conservation Reserve Program (CRP) provides incentives to farmers to set aside land from growing crops. This land is typically planted with grasses to prevent erosion but often has milkweeds. I have estimated that there are 1.4m hectares (3.6m acres) of CRP land in the Midwest providing suitable milkweed habitat – if there were incentives for farmers to plant milkweed on their CRP land, this could prevent further declines and even promote a population comeback. Unfortunately at present the high demand for corn means farmers are tempted to convert CRP land back to crops.

The second important habitat is roadsides. Transportation Department officials need to be informed about the impact of roadside management practices, such as spraying with herbicide and mowing, on monarchs.

Incentives to plant other flowering species besides milkweed in CRP land and roadsides would

help. Pollinators such as bees and butterflies are in serious decline, largely due to loss of habitat. Other threats to pollinators such as the widespread use of insecticides such as neonicotinoids could also be eliminated.

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA scientists find mosquito control pesticide use in coastal areas poses low risk to juvenile oysters, hard clams

Climate stressors, however, increase risk to shellfish

June 9, 2014

Four of the most common mosquito pesticides used along the east and Gulf coasts show little risk to juvenile hard clams and oysters, according to a NOAA study.

Juvenile clams used in toxicity testing. (Credit: NOAA)

However, the study, published in the on-line journal ***Archives of Environmental Contamination and Toxicology***, also determined that lower oxygen levels in the water, known as hypoxia, and increased acidification actually increased how toxic some of the pesticides were. Such climate variables should be considered when using these pesticides in the coastal zone, the study concluded.

"What we found is that larval oysters and hard clams can withstand low levels of pesticide use, but they are more sensitive to pesticides if their ecosystem is suffering from local climate stressors like hypoxia and acidification," said the study's lead author, Marie DeLorenzo, Ph.D., NOAA environmental physiology and microbiology program lead with **NOAA's Centers for Coastal Ocean Science**. "Hopefully these data will benefit both shellfish mariculture operations and environmental resource agencies as they manage the use of mosquito control pesticides near their coastal ecosystems."

Commercial shellfishing has a large economic national impact. **NOAA Fisheries** estimated that U.S. oyster and hard clam landings for 2010 were worth nearly $118 million and $41 million, respectively. Shellfish growers, however, are concerned that pesticide spraying near the coastlines may contaminate both their hatcheries and source waters. This is compounded by a lack of data on the toxicity of mosquito insecticides for these shellfish.

These ecologically and economically important species inhabit tidal marsh habitats along the U.S. Atlantic and Gulf of Mexico coastlines. Clams and oysters are also important for the coastal ecosystem because they filter water, improving water quality, and serve as habitat and food sources for other estuarine species.

Approximately 200 mosquito species live in the United States. In addition to causing painful itchy bumps to people, mosquito bites can transmit serious diseases such as malaria, dengue fever, and West Nile virus. One approach to controlling mosquitoes is to apply pesticides by spraying from planes or trucks over a large area. However, to effectively control mosquitoes, the pesticides must target species which live in aquatic habitats that are also home to sensitive estuarine species. This may pose a risk to coastal environments. Also, since many residential communities where the pesticides may be used are near these coastal aquatic habitats, the potential for direct overspray or unintentional drift into these waters is increased.

The study sought to address a lack of toxicity data for mosquito control pesticide effects on shellfish early life stages. The research team examined the toxicity of four mosquito control pesticides (naled, resmethrin, permethrin, and methoprene) to larval and juvenile life stages of hard clams (*Mercenaria mercenaria*) and Eastern oysters (*Crassostrea virginica*).

Got feedback?

Lethal thresholds were determined for the four pesticides, and differences in sensitivity were found between chemicals, species, and life stages tested. Overall, clams were more susceptible to mosquito control pesticides than oysters. Naled, an organophosphate chemical, was the most toxic compound in oyster larvae, while resmethrin was the most toxic compound in clam larvae. Decreased swimming activity was observed after four days in larval oysters and decreased growth was found in juvenile clams and oysters after 21 days.

Using a hazard assessment, which compared the toxicity thresholds to concentrations expected in the environment, the researchers calculated a low-level of risk to clams and oysters from application of these pesticides for mosquito control.

The researchers also tested the pesticides' toxicity under climate stress conditions. The more extreme climate conditions caused increased pesticide toxicity.

The study did not address the impacts of the pesticides on other shellfish such as shrimp or lobsters.

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BBC NEWS

SCIENCE & ENVIRONMENT

10 June 2014 Last updated at 12:38 ET

GM lab mosquitoes may aid malaria fight

By Jonathan Webb
Science reporter, BBC News

Scientists have created mosquitoes that produce 95% male offspring, with the aim of helping control malaria.

Flooding cages of normal mosquitoes with the new strain caused a shortage of females and a population crash.

The system works by shredding the X chromosome during sperm production, leaving very few X-carrying sperm to produce female embryos.

In the wild it could slash numbers of malaria-spreading mosquitoes, reports the journal **Nature Communications**.

Although probably several years away from field trials, other researchers say this marks an important step forward in the effort to produce a genetic control strategy.

Malaria is transmitted exclusively by mosquitoes. Despite reductions brought about by measures such as nets or spraying homes with insecticides, it continues to kill hundreds of thousands of people annually, mostly in sub-Saharan Africa.

The idea of using a "sex-distorting" genetic defect to control pest populations was proposed over 60 years ago, but this is the first time it has been practically demonstrated.

The researchers, led by Prof Andrea Crisanti and Dr Nikolai Windbichler of Imperial College London, transferred a gene from a slime mould into the African malaria mosquito *Anopheles gambiae*. This gene produces an enzyme called an "endonuclease" which chops up DNA when it recognises a particular sequence.

Prof Crisanti said his team exploited a "fortuitous coincidence": the target sequence of that endonuclease is found specifically - and abundantly - on the mosquito's X chromosome. "In *Anopheles gambiae*, all 350 copies are together, side-by-side on the X chromosome," he told BBC News.

When sperm are produced normally, in mosquitoes or in humans, 50% contain an X chromosome and 50% a Y chromosome. When they fuse with an egg these produce female and male embryos, respectively.

In the new mosquitoes, the X-attacking endonuclease is turned on specifically during sperm formation. As a result, the males produce almost no X-containing sperm - or female offspring. More than 95% of their progeny are male.

Breaking the cycle

Importantly this change is heritable, so that male mosquitoes pass it on to about half their male progeny. This means if the artificial strain is released into a population - in the lab or in the wild - the trait can spread until *most* males are only producing male offspring, perhaps eradicating the population altogether.

"It can be a self-sustaining effect," said Dr Windbichler.

Indeed, in five test cages that started with 50 males and 50 females, when the team introduced 150 of their new sex-distorter males, the number of females plummeted within four generations. After another couple of generations, in four out of five cages, the population died out entirely.

Both these effects are beneficial, Prof Crisanti explained, because only female mosquitoes bite humans and spread malaria. So a drop in female numbers might slow its spread, while a population crash could "break the cycle" of malaria transmission.

Dr Luke Alphey founded the company Oxitec to develop genetic control strategies for harmful insects and has pioneered the use of GM mosquitoes to **help control dengue fever**. He told the BBC the new research was exciting, but suggested that if used in the wild, this particular sex-distorter strain might not spread indefinitely and would need to be "topped up".

For a really successful, spreading system to eradicate malaria mosquitoes, "You'd have to get such a system expressed on the Y chromosome," Dr Alphey said.

The new study's authors agree this would be much more powerful. "You'd need to release fewer individuals, because all males will inherit the gene from their fathers and pass it on to all their sons - so the effect would not be diluted," said Dr Windbichler.

"Theoretically, if you have it on the Y," Prof Crisanti added, "one single individual could knock out an entire population."

In fact, Dr Windbichler and Prof Crisanti showed in **another recent paper** that this type of gene insertion on the mosquito Y chromosome is perfectly achievable.

"They haven't yet put it all together," Dr Alphey commented, "but all the pieces are in place."

Dr Alphey also commented that the power of that proposed technique would pose additional questions for researchers and regulators. "In principle, what you get is extinction," he said.

"Humans have undoubtedly driven a very large number of species to extinction - but we've only deliberately done it with two: smallpox and rinderpest. Would we want to do that with *Anopheles gambiae*?"

Dr Alphey's answer to his own question appears to be "maybe".

"If this species were to suffer a population crash, it's hard to see how significant negative side-effects might arise," he explained. "The mosquitoes are not keystone species in their ecosystems. And this technique only affects one species, *Anopheles gambiae*, among more than 3,000 known species of mosquitoes."

"If we rely instead on pesticide control we would likely kill non-malarial mosquitoes and many other insects besides. The genetic approach is much more precise."

Crisanti and Windbichler think that extinction is unlikely, even with the proposed Y chromosome-driven system, but agree that caution is warranted. "There are a lot of tests to run through," Dr Windbichler said.

"We are still a couple of years from this being applied in the field. It's very promising but there's still a long way to go."

Dr Michael Bonsall, a reader in zoology at the University of Oxford, said the new research was "super cool" and demonstrated "just how important these sorts of GM technologies are at reducing insect vector population sizes."

"This has important implications for limiting the spread of malaria," Dr Bonsall said, though he also noted that it was "a long way from being deployed."

To begin testing the safety and efficacy of the sex-distorter strains on a bigger scale, Prof Crisanti's team has built a large facility in Italy. "We have big, contained cages in which we can reproduce a tropical environment - and we can test several hypotheses on a

very large scale."

Meanwhile, he and his colleagues are pleased to have developed such a promising genetic weapon against malaria using the elusive sex-distortion mechanism, proposed many years ago.

"One of the first people to suggest it was the famous British biologist Bill Hamilton, while he was actually here at Imperial as a lecturer for a while," commented Dr Windbichler. "So it was theorised 60 years ago, but never put in practice."

The Life Scientific, broadcast at 9am on Tuesday 10th June, featured malaria researcher Professor Janet Hemingway.

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News

FOR IMMEDIATE RELEASE
June 10, 2014

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State Mosquito Program Begins Mosquito Testing for West Nile and Eastern Equine Encephalitis Viruses

First case of EEE identified in the state during 2013; public, clinicians reminded of EEE risk

Hartford – The State of Connecticut Mosquito Management Program today announced it is monitoring mosquitoes for the presence of viruses that can cause illness in people including West Nile virus (WNV) and eastern equine encephalitis virus (EEE). The mosquito trapping and testing program, coordinated by the Connecticut Agricultural Experiment Station (CAES), began June 2nd. Test results to date are negative.

The program also released surveillance results from the 2013 season. The results include the first confirmed human case of eastern equine encephalitis (EEE) in a Connecticut resident. In April, the Centers for Disease Control and Prevention (CDC) confirmed that an adult resident of eastern Connecticut who had been hospitalized with encephalitis and died in the Fall, was positive for EEE.

The resident had been tested for WNV, but was not tested for EEE before death. Fortunately, through the astute actions of a physician at a local hospital, further testing was initiated that lead to the post mortem diagnosis of EEE infection.

"While rare, EEE is serious and underscores the importance of taking personal precautions to avoid mosquito bites," said DPH Commissioner Dr. Jewel Mullen. "The presence of this virus in Connecticut should also remind clinicians to include EEE, along with WNV, among their possible diagnoses so that appropriate tests can be done."

Dr. Mullen said that DPH is preparing an advisory to Connecticut clinicians regarding the current epidemiology of EEE and WNV as well as testing options for diagnosing mosquito-borne diseases.

EEE Surveillance

Mosquitoes infected with EEE virus transmit the virus by biting humans. EEE is a rare illness in humans, and only a few cases are reported in the United States each year. Most cases occur in the Atlantic and Gulf Coast states.

Last season there was significant EEE virus circulation in eastern Connecticut, including infected mosquitoes, a horse, and pheasant flocks. Mosquitoes with EEE virus were identified in five

Connecticut towns: Haddam, Hampton, North Stonington, Plainfield and Voluntown. A horse stabled in Griswold died from EEE-associated illness during the second week of September. In early to mid-September, pheasants in a farm flock in Killingly and a flock in Sprague died from EEE infections.

The numbers and types of mosquitoes with EEE identified in the Pachaug State Forest in Voluntown prompted the Department of Energy and Environmental Protection to temporarily close part of the forest to recreational activities and to conduct ultra-low volume ground spraying to reduce the number of mosquitoes.

WNV Surveillance
Last season, the Connecticut Agricultural Experiment Station (CAES) identified WNV-positive mosquitoes at trap sites in 22 towns: Branford, Bridgeport, Darien, East Haven, Fairfield, Glastonbury, Greenwich, Groton, Manchester, New Haven, North Branford, Norwalk, Plainfield, Stafford, Stamford, Stratford, Voluntown, Wallingford, Waterford, West Haven, Westport and Wilton. Four Connecticut residents from the towns of Stamford, Stratford, and Bridgeport were diagnosed with WNV-associated illnesses. There were no fatalities.

Connecticut Mosquito Management program
The management of mosquitoes in Connecticut is a collaborative effort involving the Department of Energy and Environmental Protection (DEEP), the Connecticut Agricultural Experiment Station (CAES) and the Department of Public Health (DPH), together with the Department of Agriculture and the Department of Pathobiology at the University of Connecticut (UCONN). These agencies are responsible for monitoring and managing the state's mosquito population levels to reduce the potential public health threat of mosquito-borne diseases.

The CAES maintains a network of 91 mosquito-trapping stations in 72 municipalities throughout the state. CAES began its mosquito trapping and testing season last week. Mosquito pools that test positive for WNV and EEE, as well as human cases of these illnesses, will be posted on the Connecticut Mosquito Management Program website.

For information on West Nile virus and EEE, including what you can do to prevent getting bitten by mosquitoes and the latest mosquito test results, visit the Connecticut Mosquito Management Program Web site at www.ct.gov/mosquito.

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War on Cornfield Pest Sparks Clash Over Insecticide

JUNE 12, 2014
By: Bloomberg

Pesticide use is surging among U.S. farmers who are worried about insect resistance to Bt corn. But scientists warn that overuse of chemicals may create a worse problem down the road.

Pesticide use is surging among U.S. corn farmers who are worried that some insects have become resistant to genetically modified versions of the crop.

That's an unexpected reversal since one of the promises of engineered corn when it was introduced 17 years ago was its ability to kill pests. The use of soil insecticides for the crop plunged 90 percent through 2010, according to the U.S. Department of Agriculture.

RELATED STORIES

- Pros and Cons of Soil Insecticide Use for Corn Rootworm Protection
- Four States Confirm Rootworm Resistance

Whether the return to pesticide use makes sense, or is simply spurred by a chemical industry marketing campaign, is at the center of one of the biggest debates in the Corn Belt this spring. At the heart of the controversy is whether snuffing out pests in the short term with chemicals may create a worse problem down the road.

Farmers say they need to do whatever it takes now to control the western corn rootworm, the most damaging U.S. corn pest. Although Monsanto Co. designed its corn to kill the worms, resistant bugs have been found in four states and growers say pesticides are needed again to protect their crops.

It would be "financial suicide" to plant rootworm-killing corn without a soil insecticide as a secondary way to control the larvae, said Illinois farmer Mike Jenks, echoing the views of growers across the Midwest.

That view is driving up profit for pesticide makers like FMC Corp. and American Vanguard Corp. They're marketing corn insecticides as a kind of insurance policy that costs $12 to $25 an acre. Root-eating larvae of the flying insect has historically cost U.S. farmers $1 billion in expenses and lost harvest, according to USDA estimates.

Pesticides Unnecessary

Some scientists are skeptical that a return to pesticide use is in the long-term interests of farmers. Soil insecticides don't improve root health or yields when the corn is already producing its own insecticide, according to a paper by University of Illinois scientists published online April 25 by the Journal of Applied Entomology. Iowa State University researchers reached a similar conclusion last year.

Chemical insecticides are simply redundant, said Michael Gray, a University of Illinois entomologist.

"It's pretty clear where the science and the scientific community is on this point," Gray said. "It really does not add much."

Entomologists also warn that the additional insecticide may exacerbate the resistance problem that farmers fear. That's because pairing pesticides with engineered corn exposes insects to extra toxins, delaying maturity. That leads to increased mating between resistant worms, hastening the evolution of rootworms that aren't vulnerable to GMO corn.

Insurance Approach

An EPA panel of scientific advisers warned in March that "the use of a soil insecticide with a Bt hybrid should not be done." The report refers to GMO corn as Bt because it includes a gene from Bacillus thuringiensis, a soil bacterium widely used to control insects.

That echoes a 2012 warning to the EPA from 22 corn entomologists that "an insurance-based approach" to insecticides "will only increase insect resistance."

That concern over resistant rootworms is driving up sales for insecticide makers including American Vanguard, FMC and Syngenta AG, which dispute the scientists' findings.

There haven't been any studies confirming that soil insecticides are speeding the evolution of resistant rootworms, said Peter Porpiglia, head of product developing at Newport Beach, California-based American Vanguard. "It's pretty much conjecture."

Surging Demand

American Vanguard may have the most at stake. Net income jumped 56 percent from 2011 through 2013 and soil insecticides for corn have been "a very material driver," said William Kuser, a spokesman. More than a quarter of its sales come from soil insecticides such as Smart Choice 5G and Aztec, used on about 5 million acres (2 million hectares) of corn.

Farmers' concerns will boost demand for soil insecticides through at least 2015, American Vanguard Chairman and Chief Executive Officer Eric Glenn Wintemute told analysts on a May 1 conference call.

"We will continue to push our message," Wintemute said on the call. "It's a good return on investment to make a soil insecticide application."

FMC runs ads in farming magazines showing insects gorging on corn roots, warning that Bt "protection isn't enough." The Philadelphia-based company promises to boost yields by as much as 11 bushels an acre with its Capture LFR insecticide.

The campaign seems to be working. Profit in its agriculture unit jumped 55 percent from 2011 through 2013, driven by rising North American pesticide sales.

FMC CEO Pierre Brondeau expects sales to increase this year, in part due to "concern over corn rootworm," he said on a May 7 conference call.

Resistance Rare

The company dismisses concerns that promoting Capture for use with Bt corn may accelerate resistance.

"That's not a theory we necessarily agree with," said David Wheeler, FMC's technical business manager for North American crops.

FMC dropped 0.3 percent to $77.99 at the close in New York while American Vanguard declined 1.1 percent to $14.25 and Syngenta depositary receipts also fell 1.1 percent.

Insecticides are effective in controlling grubs, wire worms and other lesser pests, and are appropriate when resistant rootworms are are known to be in a field.

Monsanto says resistant rootworms are rare. Only 0.2 percent of the 37 million acres with Monsanto's rootworm-protected corn have had "unexpected damage" from the insects, said Jeffrey Neu, a spokesman for the St. Louis-based company.

Toxin Overexposure

Grey, the entomologist, said resistance is probably more common. Resistant worms have been found in six Illinois counties and they may be about as common in other states, he said.

Rootworm resistance can occur when farmers plant GMO corn on the same plot year after year, overexposing bugs to toxins. Other growers fail to plant a so-called refuge of conventional corn to deter resistance.

Similar overuse of Monsanto's Roundup herbicide led to the evolution of superweeds that aren't vulnerable to the world's best-selling weedkiller.

Rotating crops, planting a refuge and using a variety of Bt corn types are the best ways to control rootworms, not insecticides, said Gray.

"When these Bt hybrids came into the marketplace, one of the biggest selling features was that producers were going to eliminate the use of soil insecticides," Gray said. "Right now we are basically throwing everything at this insect. It's not a sustainable approach."

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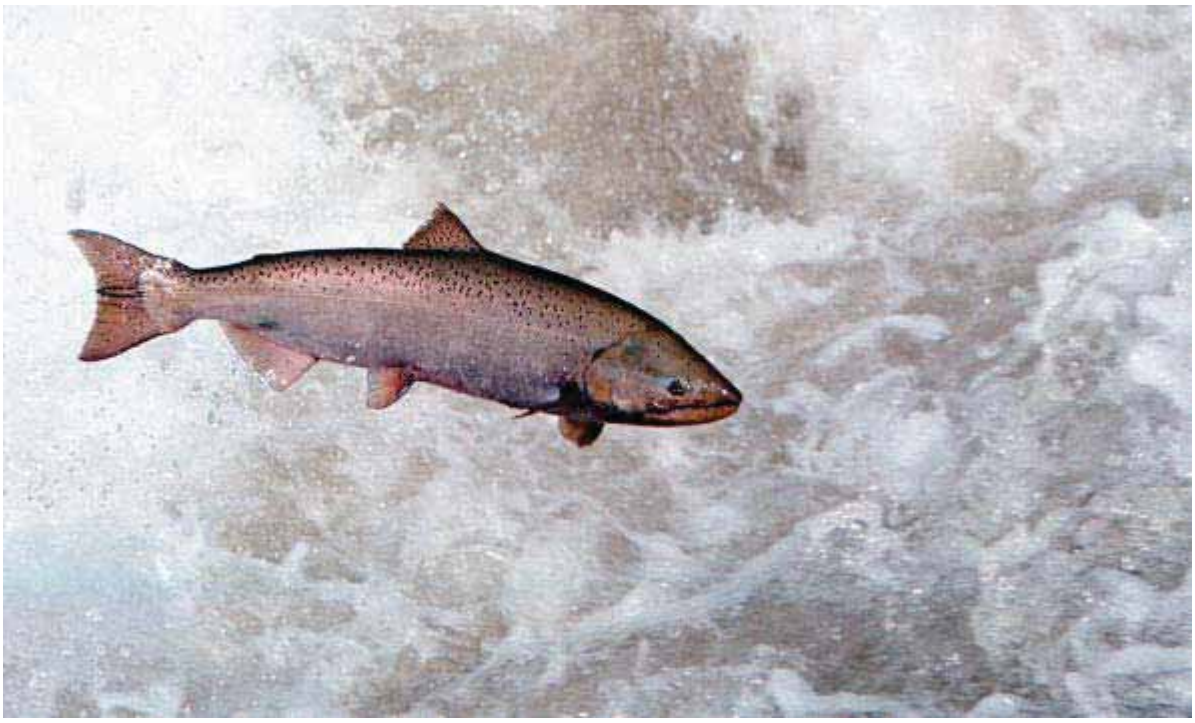
Safer Streams

By Anne Russell Gregory, www.defendersblog.org | June 16, 2014 | Last Updated: June 16, 2014 10:33 am



Last week, Defenders and our allies chalked up another courtroom victory – this time, to protect endangered salmon and steelhead from five deadly pesticides in the Pacific Northwest. Although the five pesticides – carbaryl, chlorpyrifos, diazinon, malathion, and methomyl – were designed to kill insects, they either end up killing the endangered fish, destroying their habitat, inhibiting their reproduction, or killing the insects the fish prey on to survive. Now, the Environmental Protection Agency (EPA) has agreed to put new rules in place to keep these pesticides from being used along streams, where the chemicals can leach into the water and cause so much damage.

The National Marine Fisheries Service (NMFS) raised concerns about these pesticides in 2008 and 2009, when their research found that by allowing these substances to be used near streams, the EPA was putting endangered species in further danger of extinction – in direct violation of the Endangered Species Act. NMFS determined that the pesticides would not only put nearly 30 species of salmon and steelhead at risk, but it would also damage the very streams they rely on for survival. NMFS did their part by planting buffer zones along the streams to minimize the damage, but that step alone would not be enough to keep the streams and their inhabitants safe. NMFS ordered the EPA to protect the fish and the streams by prohibiting any aerial spray of the pesticides within 600-1,000 feet of salmon waters, and any ground application of the pesticides within 50-600 feet.

Despite NMFS' order, the EPA refused to implement the recommendation, opting instead for less protective measures. NMFS even wrote to the EPA, explaining that the agency's inferior protections would end up killing juvenile salmon and their prey. However, the EPA continued to ignore the urgent warnings, allowing pesticides to bypass the inadequate buffers and continue to run into the streams. In November 2010, a year after the mandate from NMFS, the EPA still hadn't put any new protections in place. It was a stalemate. NMFS had used all its authority to demand the right protections, but they didn't have the power to force the EPA to obey. So Defenders and our allies stepped in – we filed suit to force EPA to act, and to ensure that pesticides will not jeopardize the survival and recovery of endangered salmon and steelhead. Last week's long-awaited agreement is the result: a necessary step in protecting the endangered salmon, steelhead, and streams in the Pacific Northwest

Under this new agreement, the EPA will prohibit aerial spraying of the pesticides within 300 feet of salmon waters, and ground application within 60 feet. These "no-spray buffers" will remain in place until the EPA works with NMFS to review and analyze the complete impacts the pesticides can have

on the fish and their streams. EPA also agreed to notify pesticide users, state and local governments, and federal agencies about the reinstated buffers, highlighting the applicable streams. This way, farmers will know how and where they can protect salmon and steelhead from pesticides, and can work to develop alternatives.

As Jason Rylander, our senior staff attorney on the case, said "It's kind of a no-brainer that salmon and pesticides don't mix. Today's agreement will go a long way towards ensuring that these highly toxic chemicals stay out of rivers and streams and out of the food chain." This agreement is not only important for salmon and steelhead, but also serves as a wakeup call to EPA that it cannot ignore orders to protect endangered species.

This article was originally published and writted by Anne Russell Gregory, a contributing writer for www.defendersblog.org. For the original story and more information, please click HERE.

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By Brian Fraga

June 12. 2014 6:48PM

Two Fall River DPW workers hospitalized after being exposed to pesticide at landfill

State police hazmat team called to examine dump truck carrying toxic substance

FALL RIVER — Two Department of Community Maintenance workers were hospitalized Thursday after being exposed to a toxic pesticide at the Fall River Industrial Park landfill.

PHOTO/ HERALD NEWS PHOTO | JACK FOLEY

Members of a hazardous materials team from the Massachusetts Department of Fire Services look over the city trash truck where two workers were affected by an irritating powder dumped by a private trash hauling truck Thursday at the landfill.

Just before 2 p.m., the workers were behind another trash truck when it dumped its load, agitating a white powder that got into the men's faces and immediately caused their eyes to start burning, Fall River Fire Chief Robert Viveiros said.

The DCM workers drove to the Fall River Fire Department's headquarters on Commerce Drive, where medical rescue personnel helped decontaminate and wash out the men's eyes before transporting them to Charlton Memorial Hospital for observation.

Viveiros contacted the Massachusetts state hazardous materials team to investigate and to begin decontamination operations. Meanwhile, the state sent another hazmat team to track down the garbage truck that had dumped the pesticide, Viveiros said.

The driver of that truck, which was located near Fort Devens, also began experiencing his eyes burning, and he was taken to a local hospital for treatment, Viveiros said.

Hazmat officials determined the chemical to be oxybisphenoxarsine, an anti-microbial pesticide that Viveiros said should have been incinerated instead of being taken to the landfill.

The Massachusetts Department of Environmental Protection also responded to the Fall River Fire Department and accompanied the hazmat team to the landfill, Viveiros said.

Hazmat officials recommended that the two Fall River DCM employees — who had been treated and released — be readmitted to the hospital. Viveiros said they returned to the hospital Thursday evening to be kept for observation.

Meanwhile, the DCM truck remained parked across the street from the Fall River Fire Department headquarters late Thursday.

"We can't do anything with it until the determination is made on how to decontaminate it," Viveiros said.

http://fall-river.wickedlocal.com/article/20140612/NEWS/140618158

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UPDATE | Wadley woman ID'd after dying from insecticide exposure

Updated: Thu 6:15 PM, Jun 12, 2014 *By: Staff Email*

More Video...

Woman dies from pesticides

Insecticide Death

Thursday, June 12, 2014

JEFFERSON COUNTY, Ga. (WRDW) -- Deputies are investigating the death of a Wadley woman who inhaled insecticide.

Deputies were called Farm Street where someone told 911 that 58-year-old Rosa B. Gilmore-Green was weak an unable to move just before 8 p.m. The Jefferson County Coroner says shed died just before 1 this morning.

Gilmore-Green's 12-year-old grandson lives with her and was admitted into GRU Medical Center Thursday morning, Robert Chalker of the Jefferson County Sheriff's Office said. His condition is unknown at this time.

Gilmore-Green's two grandaughters were also sent to GRU this morning, were examined and released, Chalker said. They were not at Gilmore-Green's residence when she was exposed to the poisonous gas, but at another residence where she was transported before going to Jefferson ER.

The initial incident happened on North Martin Luther King Blvd and she was picked up by EMS from Farm Street.

An investigation showed a family member distributed an agriculture insecticide in her residence earlier in the day, Jim Anderson with Jefferson County Emergency Services said.

The chemical was identified as Aluminum phosphide (Fumitoxin), Anderson said.

"Aluminum phosphide (AlP) is a cheap, effective and commonly used pesticide. However, unfortunately, it is now one of the most common causes of poisoning among agricultural pesticides," **according to the US National Library of Medicine.**

A haz-mat team was called out to decontaminate everyone who was exposed to the woman and the juveniles, including the emergency room and first responders. The emergency room was reopened overnight. No other part of the hospital was exposed to chemical residue.

An autopsy will be performed at the GBI Crime Lab in Atlanta, Ga. to determine the cause of death.

Have information or an opinion about this story? Click here to contact the newsroom.