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

February 19, 2016

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

AGENDA

8:30 AM

1. Introductions of Board and Staff

2. Minutes of the January 13, 2016 Board Meeting

   Presentation By: Henry Jennings
   Director

   Action Needed: Amend and/or Approve

3. Discussion of the Key Messages for Homeowner Outreach

   At the last three meetings, the Board discussed public concerns about homeowner pesticide use and explored ideas for promoting Integrated Pest Management (IPM) to this audience. Before embarking on an outreach campaign the Board needs to clarify exactly which messages are to be promoted so that there is consistency between co-operators. The staff has drafted a memo for the Board's consideration.

   Presentation By: Megan Patterson
   Pesticide Safety Educator

   Action Needed: Provide Guidance to the Staff

4. Update on Actionable Strategies Developed by Board Staff for Promoting Integrated Pest Management with Homeowners

   At the November 13, 2015 meeting, the Board discussed public concerns about homeowner pesticide use and explored ideas for promoting Integrated Pest Management (IPM) to this audience. At the December 18, 2015 meeting, the Board heard from invited recipients of pesticide registration revenues as they discussed their current activities related to homeowner IPM and whether there may be opportunities to expand their roles. At the January 13, 2016 meeting, the staff presented the actionable strategies list they created for promoting IPM to homeowners. The

Board directed the staff to begin work on these strategies, to measure participation/success and give a progress update at the next Board meeting.

Presentation By: Megan Patterson
Pesticide Safety Educator

Action Needed: None

5. Consideration of a Consent Agreement with Jacob Boyington of Appleton Ridge Construction of Appleton, ME

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 involves a lab-confirmed drift of Malathion to residential property during an application made to a blueberry field in Palermo.

Presentation By: Raymond Connors
Manager of Compliance

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

6. Consideration of a Consent Agreement with Priority Real Estate Group, LLC of Topsham, ME

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 involves an employee of Priority Real Estate Group who made an unlicensed application of Roundup Weed and Grass Killer herbicide to curbs and sidewalks of a school in Brunswick while the school was in session.

Presentation By: Raymond Connors
Manager of Compliance

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

7. Consideration of a Consent Agreement with Joseph Lemar of Dresden, ME

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 involves an unlicensed application of Roundup Herbicide made to a blueberry field.

Presentation By: Raymond Connors
Manager of Compliance

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

8. Other Old or New Business

   a. Central Maine Power Company's Transmission Right-of-Way Drift Plan for 2016
   b. Email from Nancy Oden
   c. Email from Carol Laboissonniere
   d. Letter from Physicians for Social Responsibility Maine Chapter

9. Schedule of Future Meetings

   March 25, and May 6, 2016 are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

   Adjustments and/or Additional Dates?

10. 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 Chamberlain, at the Board's office or anne.chamberlain@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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BOARD OF PESTICIDES CONTROL

January 13, 2016

Augusta Civic Center, 76 Community Drive, Kennebec/Penobscot Room, Augusta, Maine

MINUTES

3:00 – 4:00 PM BOARD MEETING

4:00 – 5:00 PM OPEN FORUM

5:00 – 6:00 PM BOARD MEETING CONTINUED IF NECESSARY

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

1. Introductions of Board and Staff
   - The Board and Staff introduced themselves
   - Staff Present: Chamberlain, Connors, Fish, Jennings, Tomlinson

2. Minutes of the November 13, 2015 and December, 18, 2015, Board Meetings

   Presentation By: Henry Jennings
   Director

   Action Needed: Amend and/or Approve

   - Jemison and Morrill pointed out a couple of typos in the November minutes.
     - **Flewelling/Jemison: Moved and seconded to accept the November minutes as amended and the December minutes as presented.**
     - **In Favor: Unanimous**

3. Request from Maine Migrant Health Program and Eastern Maine Development Corporation to Help Support a Worker Safety Training Program for Summer 2016

   Since 1995, the Board has supported a Migrant and Seasonal Farmworker Safety Education program. During 2015, 308 individuals received Worker Protection Standard training, 308 individuals received take-home exposure training, and 310 received heat stress training. The Maine Migrant Health Program and Eastern Maine Development Corporation are proposing to provide training to one health-and-safety outreach worker during the 2016 agricultural season. Funding to support this effort is being requested in the amount of $3,675, a 5% increase over the amount requested last year. The funding has been accounted for in the Board's FY'16 budget

   Presentation By: Chris Huh, Program Manager, Farmworkers Jobs Program,
   Eastern Maine Development Corporation

Elizabeth Charles, Enabling Services Coordinator, Maine Migrant Health Program

Action Needed: Discussion and Determination if the Board Wishes to Fund this Request

Elizabeth Charles was present and she explained that Chris Huh had a conflict and was unable to attend. Charles said that 2015 was a very successful year. 308 farmworkers were trained in pesticide safety, an increase of 11%. 308 were also trained in limiting pesticide exposure to families, an increase of 22%. Heat stress training was included for the first time and given to 310 workers. In 2016 tractor training will be added. Hopefully this will allow them to reach growers that have not sought them out in the past. The person who did the job in 2015 is returning in 2016; he did a great job expanding outreach and building relationships.

- Jemison asked whether there has been any effort to correlate number of trainings, number of accidents and incidents. Charles replied that it is not possible to quantify prevention and a lack of accidents. They do an impact evaluation with farmers, using pre-and post-tests, both on the day of training and three to four weeks later. It tests whether they remember the content and whether behavior has changed based on what was taught.
- Eckert asked why they are asking for a slight increase. Charles replied that the tractor training would be included in the same program. Also, mileage rates have increased. The program has been funded at the same level for the last five or six years.
- Morrill asked whether they had been able to reach all the intended audience, or is there a larger audience that would like the services. Charles replied that several staff members were trained so if the principal trainer was busy another staff member could fill in. They have not had to turn anyone down so far.

    - **Jemison/Eckert: Moved and seconded to approve a grant to Maine Migrant Health Program and Eastern Maine Development Corporation in the amount of $3,675**
    - **In Favor: Unanimous**

4. Discuss List of Actionable Strategies Developed by Board Staff for Promoting Integrated Pest Management with Homeowners

At the November 13, 2015 meeting, the Board discussed public concerns about homeowner pesticide use and explored ideas for promoting Integrated Pest Management (IPM) to this audience. At the December 18, 2015 meeting, the Board heard from invited recipients of pesticide registration revenues as they discussed their current activities related to homeowner IPM and whether there may be opportunities to expand their roles. The Board further directed the staff to develop actionable work items for implementation in 2016 and beyond. The staff has developed a list of ideas for the Board's consideration.

- Jennings stated that the staff reviewed the discussion at the last meeting to see which areas drew the most interest. One of the comments heard repeatedly is that it's going to require a network in order to be effective. The BPC staff does not have sufficient resources to effectively reach 1.3 million non-licensed potential applicators. There are networks already in place that have collaborated on YardScaping and the Portland Flower Show efforts, both of which promote sustainable land care practices. Participants include Soil and Water Conservation Districts, Cooperative Extension and other non-profit organizations involved in water quality efforts. The staff doesn't need to start from scratch; it simply needs to inject some energy into previous groups and look for other cooperators who are interested. Jennings

suggested the staff set up a meeting this winter and then start to get some ideas on how to promote topics.

- Jennings noted there is a lot of interest in lawn care in connection with this topic. There are graphs that everyone likes to cite related to the increase in use of lawn care products. Maine does not have a turf specialist. We rely on University of Massachusetts, University of Rhode Island and Cornell for turf recommendations. In Maine, Lois Stack has some involvement in turf, but it is not her focus. Maybe we need to consolidate all the information available which is specific to the Northeast, and tailor that information to best suit Maine. The staff could register a URL, a catchy name that would stick in peoples' minds. The staff could focus on aggregating existing information instead of starting from scratch. There is a lot of information available, but it's difficult for homeowners to find and figure out what is most applicable to Maine. Since most people have a limited amount of time to invest, making lawn care information easily accessible might increase adoption of recommendations. The staff could offer free articles about sustainable lawn care, or pay for advertising to promote available resources on the internet.
- Jennings said that there was a lot of discussion at previous meetings about training staff at various retail outlets. That has been done in the past. It is a tough group to deal with, especially the big-box stores; it's a pretty dynamic group. Training staff at retailers might be most successful with garden centers; a more static and interested group.
- Jennings noted that there was also a lot of discussion around the signs required at pesticide retailers and their placement. Often they are hard to find. The Board could look at the rule to require better placement, specify what size it has to be or encourage better placement. The signs are available on the website so generally people print in black and white. A color copy is sent with the license renewals every year but usually people post black and white copies which are not very eye catching.
- Jennings went on to discuss the idea of getting homeowner IPM and sustainable practices in the media. We tend to get a little stuck on what the message should be; there is a diversity of opinion on that. It requires a delicate balancing act and needs to be science-based. Positive messages are more readily accepted than negative messages. The staff will need to work with the Board on messaging and be sure it's something everyone can agree on. For instance, we can probably agree that the more educated people are, the better.
- Jemison noted the 700% increase and asked how much of that was weed'n feed. Fish replied almost 90%. Jemison said that seems to be the low hanging fruit. Provide information about how bad it is. It would be interesting to know how many homeowners mow their own lawns, how many buy their own supplies versus hiring professionals. Try to hone down to what that group is, and then have a message: would you rather be mowing your lawn or doing something else? If you use these products you have to mow at least once a week. If you don't fertilize you can go longer between mowing. Appeal to them about air pollution; lawnmowers are worse than automobiles; it's inefficient; it's a waste of your time. Reduce the desire to have a perfect lawn. Appeal to using less fuel.
- Stephenson agreed, saying it helps to spin your position. People are proud of their lawns; that's why they put so much into it. People are even more proud if they are doing it right; they can eliminate mowing six times this year.
- Referring again to the 700% increase in homeowner pesticide use, Fish clarified that 90% of the products were lawn care products, a lot of it was weed'n feed. It includes commercial applicators as well as homeowners applying pesticides themselves.
- Bohlen remarked that the items on the list have very different staff work requirements; some are getting something set up and let run, others are giving talks over and over for many months. Does the staff have the time to do this?

- Jennings replied that that would depend on the current IT project which is taking up significant amounts of time. It also depends on what level of priority the Board wants to assign this. It will take staff time away from other things, but the Board has a talented staff.
- Bohlen asked how to stack them as potential value vs potential staff time. A lot of people will eventually find our websites, how effective is that? Presentations are very effective but to a small audience and are very time consuming.
- Jennings said that the Board used to write a lot of articles and send them to the media and hope they got coverage. The first two items on the list could be worked on before the growing season starts. The third, content to media, could be planned out and under develop before the season begins. Kathy Murray is a great resource. The Maine CDC has data on ticks, vector-borne-diseases, and information on prevention. Other items on list not nearly as time consuming. One thing you don't see on the list that people in the audience talked a lot about, is measurement. In the past, the staff put a lot of effort into measurement and got nothing useful out of it. The data was not particularly useful. It's very hard to measure. When most of what you're doing is prevention, it's really hard to measure the impact.
- Flewelling asked if the use of chemicals has gone up. Fish replied that the trend is up. Flewelling said that people are making choices, they want nice lawns. So the question is: do we like their choices? The goal should be to not eliminate peoples' choices. Flewelling understands there are ordinances going in down south that eliminate choices. Obviously we want people to use products correctly.
- Morrill agreed that people should have choices, but they should be educated about the choices. Fifteen percent of the national insecticide use is home and garden use. Do homeowners really know what they're using? Maybe some education is our job, maybe some is the manufacturers.
- Granger stated that it is difficult to reach people in the marketplace. Training sales staff is difficult in any setting. We might want to think about training a single person to handle questions. If we could interest retailers in having one person be trained, a central person to go to with questions, similar to the IPM Coordinator in schools. They don't have to be licensed. It might be a way to get a higher level of education by using designated individuals.
- Eckert said that the message is to use fewer pesticides to protect air and water and people. She was impressed by the number of potential collaborators that came to the last meeting. The BPC staff doesn't have to do everything; other people and groups could be helpful in sharing the message.
- Morrill said that he liked the first suggestion. Look at the messages we have, expand them and direct them toward homeowners. The knee-jerk reaction is to create a new website, but there's so much information already out there, we don't want to reinvent things. Can we consolidate what's already on the website so homeowners can get to it and get the message out so they know it's there?
- Jennings replied that creating a URL is easy and doesn't cost much; it could just go to our existing site. Needs to be a snappy catchphrase that will stick in peoples' minds. The staff could use information that already exists and links to other sites.
- Stevenson suggested that it should be used as a resource for collaborators so that everyone is delivering the same message.
- Jennings noted that the IPM Council might be the logical place to house that. Associating with them might have some value.
- Flewelling asked if there are BMPs for lawns. Jennings replied that there is a set for schools and a set for commercial applicators. Fish remarked that there is homeowner stuff on the YardScaping site.
- Morrill said the staff has already done good work, but nobody knows about it. The question is how to get homeowners engaged in the process so we can educate them on what they're doing on their property. He agrees with Granger that it's hard to train retail staff, but that doesn't

mean we shouldn't do it. The staff could provide educational opportunities at garden centers; similar to tick talks, open to the general public.

- Bohlen noted that retail outlets that provide do-it-yourself workshops might work with the Board, such as Lowes, Skillins and Longfellows, etc.
- Fish said that we could train someone at each of those places so they could do the talks.
- Jennings noted that getting involved in municipal ordinances is tricky. The staff doesn't want to get caught up in situation where we have to say this is or isn't a good ordinance. Even if we want to give a presentation on what already exists in pesticide law, we still have to be careful. If the staff answers questions it could be portrayed that the Board endorses their ordinance.
- Eckert stated that it seems like you have to get involved early, when they're thinking about writing it, not when they've already written it and have advocates and detractors. She suggested sending information to all municipalities saying that we have a talk about pesticide laws.
- Jennings replied that it is a balancing act in terms of message. At a minimum we will put up a web page specific to municipalities. We have tried working with the Maine Municipal Association, but pesticides are not a priority topic for them. Unless a town is in the middle of writing an ordinance, they generally aren't interested in pesticide law.
- Bohlen opined that the interest in ordinances is directly related to why we want to get information out to homeowners. There is increased usage and people are scared by that. By the time the municipality is paying attention, there is already an advocacy group. These issues are very closely tied together. This is a marketing opportunity for the Board about what it is doing to address these issues and to make that information available to people. Here are ways to minimize pesticide use and here's what we're doing. It's more evidence that people aren't finding the website.
- Morrill noted that when we talk about soil samples and calibration of spreaders—things like that—we talk at a high level and take it for granted that people will comprehend the information. But we all had to learn the basic science at some point.
- Jennings reiterated that we have the resources to work on the list of educational effort or work on measurement, but we can't do both. The Board would need at least one full-time person to try to quantify use.
- Katy Green said she understands the hesitation to commit to measurement, but how will you know if you've moved the dial at all with your efforts?
- Morrill replied that this is a topic that isn't going to go away.
- Jennings said the easiest thing to measure is hits to a website.
- Morrill said we should measure participation. Do more presentations, reach more homeowners, which are all measurable.
- Eckert asked if we could measure the amount of weed 'n feed sold. Fish replied that you can continue to see a trend, but you can't consider them absolute numbers because of how it's reported. It's calculated based on what's shipped into the state, not what sold, and sometimes there's double reporting.

The meeting suspended during the Public Forum, during which time some suggestions around the current topic were given by audience members.

- **Consensus was reached to revisit the topic at the next meeting and the staff should be prepared to give an update.**

5. Other Old or New Business

   a. Email from Cynthia Ladderbush

- Eckert noted that the Board is not who gets to decide how farming is done in the state. If they want something done they need to go to the Legislature.

b. Other

- Eckert said that she had been asked about GMO labeling and wondered if there is a new GMO labeling bill in the Legislature. Jim Dill replied that there are currently two bills in front of the ACF Committee. The one that passed two years ago required contiguous states to pass similar laws; if Maine went alone, many companies wouldn't bother. Vermont was sued and has spent a million dollars defending their GMO law. There was a federal bill; we waited to see how that would fare before considering ours. The federal bill, if passed, would have prevented states from requiring labeling. The new bill basically says if there are any GMO ingredients, it must be labeled, no exemptions. The committee hasn't taken it up yet.

6. Schedule of Future Meetings

February 19, March 25, and May 6, 2016 are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

- No future dates were added

7. Adjourn

- **Jemison/Stevenson: Moved and seconded to adjourn at 4:28 pm**
- **In Favor: Unanimous**

PAUL R. LEPAGE
GOVERNOR

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

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

MEMORANDUM

Date: February 9, 2016
To: Board Members
From: Staff
Subject: Staff Proposed Messages for Homeowner IPM and Outreach

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At the January 13, 2016 meeting, the Board reviewed a list of staff proposed actionable outreach projects related to homeowner Integrated Pest Management (IPM). The Board determined that the proposed list of actionable items was ambitious, but should be pursued.

Staff determined that the selection of messages of focus is a major stepping stone toward developing a cohesive outreach program. Board staff developed a list of topics that seem pertainant to homeowner IPM and that list is provided below. Board staff hope this list will assist the Board in clarifying which messages to promote.

- Is it a pest and does it warrant control efforts?
- Proper identification of pests
- Threshold for action—acceptable levels of control versus complete elimination
- Read control recommendations from reputable sources
- Use the most effective combination of mechanical, cultural and pesticide strategies
- What is a pesticide?
- Product choice and use
    - Read the label carefully
    - Understand the label
    - Follow all label directions
    - Ensure proper measurement and distribution of chosen products
- Minimize pesticide exposure
- How to minimize risks
    - Risks from mechanical control
    - Risks of not controlling the pest
    - Risks of using pesticides

Proposed Administrative Consent Agreement
Background Summary

Subject: Jacob Boyington
Appleton Ridge Construction
1108 Appleton Ridge Road
Appleton, Maine 04862

Date of Incident(s): August 18, 2015

Background Narrative: Board staff responded to a drift complaint in Palermo alleging that drift occurred to a residential property when a pesticide application was made to an abutting blueberry field. The owner / commercial applicator of Appleton Ridge Construction, Jacob Boyington applied malathion insecticide to the blueberry field. Two separate foliage samples collected from turf near the house on the abutting property tested positive for malathion.

Summary of Violation(s):

CMR 01-026 Chapter 22 section 4(B)I

Standards for Unconsented, Off-Target Drift of Pesticides

I. General Standard. Pesticide applications shall be undertaken in a manner which minimizes pesticide drift to the maximum extent practicable, having due regard for prevailing weather conditions, toxicity and propensity to drift of the pesticide, presence of Sensitive Areas in the vicinity, type of application equipment and other pertinent factors.

CMR 01-026 Chapter 22 section 4(B)II

II. Prima Facie Evidence. Pesticide residues in or on any off-target Sensitive Area Likely to Be Occupied resulting from off-target drift of pesticides from a nearby application that are 1% or greater of the residue in the target area are considered prima facie evidence that the application was not conducted in a manner to minimize drift to the maximum extent practicable.

Rationale for Settlement: The staff took into consideration the levels of residue detected, the precautions the applicator took, and the conditions on site at the time of the application.

Attachments: Proposed Consent Agreement

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL

In the Matter of:	)	
Jacob Boyington	)	ADMINISTRATIVE CONSENT AGREEMENT
Appleton Ridge Construction	)	AND
1108 Appleton Ridge Road	)	FINDINGS OF FACT
Appleton, Maine 04862	)	

This Agreement by and between Jacob Boyington (hereinafter called the "Applicator") and the State of Maine Board of Pesticides Control (hereinafter called the "Board") is entered into pursuant to 22 M.R.S. §1471-M (2)(D) and in accordance with the Enforcement Protocol amended by the Board on June 3, 1998.

The parties to this Agreement agree as follows:

1. That the applicator operates Appleton Ridge Construction and provides commercial pesticide application services including applying pesticides to commercial blueberry fields.

2. That on August 20, 2015, the Board received a call alleging pesticide drift to a residential property when a blueberry field across the Level Hill Road in Palermo managed by RT Allen & Sons Inc., blueberry company was sprayed on August 18th.

3. That in response to the call in paragraph two, a Board inspector conducted a follow up inspection with the caller the same day the call was received. The inspector also called RT Allen & Sons Inc. and was granted permission to sample the field. The inspector was informed by the blueberry company that Jacob Boyington from the Appleton Ridge Construction company was contracted to make the pesticide application to the field. Three foliage samples were collected from the residential property described in paragraph two. One foliage sample was collected from the treated blueberry field and one foliage sample was collected from the untreated buffer left by the applicator. The applicator was called at this time but was not available to meet the inspector until August 27th.

4. That on August 27, 2015, the inspector conducted a follow up inspection with the applicator for the application described in paragraphs two and three.

5. That from the inspection described in paragraph four, it was determined that the applicator applied malathion insecticide to the blueberry field on the Level Hill Road in Palermo on August 18, 2015. The applicator stated he left an approximately fifty- foot unsprayed buffer between where he was spraying and the Level Hill Road.

6. That two foliage samples collected from the caller's property and the foliage samples from the treated blueberry field and untreated buffer were sent to a lab for analyses.

7. That the lab results for both foliage samples collected from the lawn of the residential property were positive for malathion. The sample near the house had 0.19 ppm. The sample twenty-eight feet from the house towards the Level Hill Road had 0.10 ppm. The lab result from the treated field was positive for malathion at 2.0 ppm . The sample forty feet in from the Level Hill Road in the untreated buffer was positive for malathion at 0.081 ppm.

8. That the caller's property described in paragraph two is a Sensitive Area Likely to be Occupied as that term is defined in CMR 01-026 Chapter 10 section 2(CCC)8.

9. That CMR 01-026 Chapter 22 section 4(B)I requires applicators to undertake applications in a manner that minimizes pesticide drift to the maximum extent practicable.

10. That CMR 01-026 Chapter 22 section 4(B)II provides that pesticide residues in or on any off-target Sensitive Area Likely to be Occupied resulting from off-target drift of pesticides from a nearby application that are 1% or greater of the residue in the target area are considered prima facie evidence that the application was not conducted in a manner to minimize drift to the maximum extent practicable.

11. That during the inspection described in paragraph four, the applicator stated the wind was 7-10 mph and blowing from the blueberry field towards the residential property at the time of the application and an airblast sprayer was used to make the application.

12. That the circumstances described in paragraphs one through eleven establish that sufficient precautions were not taken to minimize drift to the maximum extent practicable.

13. That the circumstances described in paragraphs one through twelve constitute violations of CMR 01-026 Chapter 22 section 4(B)I and CMR 01-026 Chapter 22 section 4(B)II.

14. That the Board has regulatory authority over the activities described herein.

15. That the Applicator expressly waives:

    a. Notice of or opportunity for hearing;

    b. Any and all further procedural steps before the Board; and

    c. The making of any further findings of fact before the Board.

16. That this Agreement shall not become effective unless and until the Board accepts it.

17. That, in consideration for the release by the Board of the causes of action which the Board has against the Applicator resulting from the violations referred to in paragraph thirteen, the Applicator agrees to pay to the State of Maine the sum of $500. (Please make checks payable to Treasurer, State of Maine.)

IN WITNESS WHEREOF, the parties have executed this Agreement of two pages.

_____ Date: _____
JACOB BOYINGTON

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____
Henry Jennings, Director

APPROVED:

By: _____ Date: _____
Mark Randlett, Assistant Attorney General

Proposed Administrative Consent Agreement
Background Summary

Subject: James Howard
Priority Real Estate Group
2 Main Street
Topsham, Maine 04086

Date of Incident(s): August 28, 2014

Background Narrative: An employee of the company made an unlicensed Roundup Weed and Grass Killer herbicide application to curbs and sidewalks of a school in Brunswick. The school was in session at the time of the application. The school was not aware the application was going to be made and the applicator did not obtain written authorization for the application from the school IPM Coordinator prior to making the application.

Summary of Violation(s):

Any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A) III.

CMR 01-026 Chapter 31 Section 1(D) requires that any company required to have personnel licensed commercially under state pesticide law shall have in its employment at least one master applicator. The master applicator must actively supervise persons applying pesticides.

CMR 01-026 Chapter 27 Section 5(D) requires that, when a pesticide application is deemed necessary at a school, the applicator must comply with all the requirements of CMR 01-026 Chapter 31–Certification and Licensing Provisions/Commercial Applicator.

CMR 01-026 Chapter 27 Section 6(A) requires that prior to conducting a non-exempted pesticide application in a school building, or on school grounds, commercial pesticide applicators must obtain written authorization from the IPM Coordinator. Authorization must be specific to each application and given no more than 10 days prior to the planned application.

Rationale for Settlement: The staff compared the violations to similar cases settled by the Board.

Attachments: Proposed Consent Agreement

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION, AND FORESTRY
BOARD OF PESTICIDES CONTROL

Priority Real Estate Group, LLC	)	ADMINISTRATIVE CONSENT AGREEMENT
2 Main Street	)	AND
Topsham, Maine 04086	)	FINDINGS OF FACT

This Agreement, by and between Priority Real Estate Group, LLC (hereinafter called the "Company") and the State of Maine Board of Pesticides Control (hereinafter called the "Board"), is entered into pursuant to 22 M.R.S. §1471-M (2)(D) and in accordance with the Enforcement Protocol amended by the Board on June 3, 1998.

The parties to this Agreement agree as follows:

1. That the Company is a commercial real estate investment and development company which offers commercial property for rent in the Topsham area.

2. That on August 28, 2014, the Board received an email from a staff member at the Providence Merrymeeting and Achieve Program School in Brunswick. The email alleged that a person identified as Jay Lemont applied Roundup Weed and Grass Killer to curbs and sidewalks in front of the school to kill weeds and grass.

3. That in response to the call in paragraph two, a Board inspector conducted a follow up inspection with Lemont on September 2, 2014.

4. That from the inspection described in paragraph three, it was determined that Lemont was employed by the Company as their Facilities and Maintenance Supervisor at the time of the application described in paragraph two. In that capacity, Lemont acknowledged that he applied Roundup Weed and Grass Killer on the Company's behalf to curbs and sidewalks at the Providence Merrymeeting and Achieve Program School in Brunswick on August 28, 2014. The school was leasing the building and site from the Company at that time.

5. That the facility is a school as defined in CMR 01-026 Chapter 27 Section 1(B), and was in session at the time of the application described in paragraph two.

6. That CMR 01-026 Chapter 27 Section 5(D) requires that, when a pesticide application is deemed necessary at a school, the applicator must comply with all the requirements of CMR 01-026 Chapter 31–Certification and Licensing Provisions/Commercial Applicator.

7. That any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. 1471-D (1) (A) and CMR 01-026 Chapter 31 Section 1(A) III.

8. That a custom application is defined in 22 M.R.S. § 1471-C(5-A) as any application of any pesticide under contract or for which compensation is received or any application of a pesticide to a property open to use by the public. Applications made to rented properties are considered applications for which compensation is received, and applications made to sidewalks and curbs around buildings are considered as applications made to areas that are open to the public.

9. That the application described in paragraphs two and four constitutes a custom application of pesticides in accordance with 22 M.R.S. § 1471-C (5-A).

10. That CMR 01-026 Chapter 31 Section 1(D) requires that any company required to have personnel licensed commercially under state pesticide law shall have in its employment at least one master applicator. The master applicator must actively supervise persons applying pesticides.

11. That the Company did not employ a master applicator, and no one from the Company had a commercial pesticide applicator's license at the time of the application described in paragraphs two and four.

12. That the circumstances described in paragraphs one through eleven constitute violations of 22 M.R.S. § 1471-D(1)(A), CMR 01-026 Chapter 31 Section 1(A) III, CMR 01-026 Chapter 31 Section 1(D), and CMR 01-026 Chapter 27 Section 5(D).

13. That CMR 01-026 Chapter 27 Section 6(A) requires that prior to conducting a non-exempted pesticide application in a school building, or on school grounds, commercial pesticide applicators must obtain written authorization from the IPM Coordinator. Authorization must be specific to each application and given no more than 10 days prior to the planned application.

14. That the company did not obtain written authorization from the IPM Coordinator at the school prior to making the non-exempted pesticide application described in paragraphs two and four.

15. That the circumstances described in paragraphs two, four, thirteen and fourteen constitute a violation of CMR 01-026 Chapter 27 Section 6(A)

16. That the Board has regulatory authority over the activities described herein.

17. That the Company expressly waives:

    a. Notice of or opportunity for hearing;

    b. Any and all further procedural steps before the Board; and

    c. The making of any further findings of fact before the Board.

18. That this Agreement shall not become effective unless and until the Board accepts it.

19. That, in consideration for the release by the Board of the causes of action which the Board has against the Company resulting from the violations referred to in paragraphs twelve and fifteen, the Company agrees to pay to the State of Maine the sum of $500. (Please make checks payable to Treasurer, State of Maine).

IN WITNESS WHEREOF, the parties have executed this Agreement of two pages.

PRIORITY REAL ESTATE GROUP, LLC

By: _____ Date: _____

Type or Print Name: _____

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____
Henry Jennings, Director

APPROVED

By: _____ Date: _____
Mark Randlett, Assistant Attorney General

Proposed Administrative Consent Agreement
Background Summary

Subject: Joseph Lemar
20 Calls Hill Road
Dresden, Maine 04342

Date of Incident(s): One application sometime between 4-12-12 and 2013 growing season.

Background Narrative: On October, 2, 2014, the Board received an email from a landowner in Dresden. The landowner raised concerns over an itemized invoice she received from Lemar for work done on her blueberry land that included a line item for "poison". Lemar later confirmed to a Board inspector that he made an application of Roundup Herbicide to the landowner's blueberry land in Dresden. Lemar was not licensed as a commercial applicator to apply pesticides.

Summary of Violation(s):

Any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A) III.

Rationale for Settlement: The staff compared the violations to similar cases settled by the Board.

Attachments: Proposed Consent Agreement

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION, AND FORESTRY
BOARD OF PESTICIDES CONTROL

Joseph Lemar 20 Calls Hill Road Dresden, Maine 04342	)))	ADMINISTRATIVE CONSENT AGREEMENT AND FINDINGS OF FACT

This Agreement, by and between Joseph Lemar and the State of Maine Board of Pesticides Control (hereinafter called the "Board"), is entered into pursuant to 22 M.R.S. §1471-M (2)(D) and in accordance with the Enforcement Protocol amended by the Board on June 3, 1998.

The parties to this Agreement agree as follows:

1. That on October 2, 2014, the Board received an email from Mary Fabus who owns land in Dresden. Fabus stated she asked the original landowner she bought her land from, Joseph Lemar, to manage the blueberries on her land while he was managing his own blueberry land. She later received an invoice from Lemar listing work done on her land from 4-12-12 through 2013. The invoice included a line item listing "poison". Fabus included the invoice as an attachment to her email.

2. That on December 2, 2014, a Board Inspector spoke with Lemar by telephone. In that phone conversation Lemar acknowledged that the "poison" referenced on his invoice to Fabus was for a Roundup Herbicide application he made to Fabus's property in Dresden.

3. That any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A)III.

4. That a custom application is defined in 22 M.R.S. § 1471-C(5-A) and includes any application of any pesticide under contract or for which compensation is received.

5. That the pesticide application to Fabus's property as described in paragraphs one and two constitute a custom application under 22 M.R.S. § 1471-C(5-A) and, therefore, a commercial applicator's license was required for the application.

6. That Lemar did not have a commercial pesticide applicator's license at the time of the pesticide application described in paragraph two.

7. That the circumstances described in paragraphs one through six constitute violations of 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A)III.

8. That the Board has regulatory authority over the activities described herein.

9. That the Company expressly waives:

    a. Notice of or opportunity for hearing;

    b. Any and all further procedural steps before the Board; and

    c. The making of any further findings of fact before the Board.

10. That this Agreement shall not become effective unless and until the Board accepts it.

11. That, in consideration for the release by the Board of the causes of action which the Board has against the Company resulting from the violations referred to in paragraph seven, the Company agrees to pay to the State of Maine the sum of $300. (Please make checks payable to Treasurer, State of Maine.)

IN WITNESS WHEREOF, the parties have executed this Agreement of two pages.

JOSEPH LEMAR
By: _____ Date: _____

Type or Print Name: _____

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____
Henry Jennings, Director

APPROVED

By: _____ Date: _____
Mark Randlett, Assistant Attorney General

January 30, 2016

Henry Jennings, Director
Maine Board of Pesticide Control
28 State House Station
Augusta, ME 04333

Dear Mr. Jennings:

Enclosed is a copy of Central Maine Power Company's Transmission Right-of-Way Drift Plan for 2016. If you have any questions, I can be reached at 621-3942.

Sincerely,

Nicholas Hahn
Vegetation Management

DRIFT MANAGEMENT PLAN FOR CENTRAL MAINE POWER TRANSMISSION LINE RIGHTS-OF-WAY

During the 2016 calendar year, Central Maine Power Company (CMP) will be treating approximately 10,000 acres as part of our regular vegetation management program. Some of this acreage is comprised of agricultural and industrial uses, and only needs to be patrolled. Integrated vegetation management techniques are employed on the remaining acreage to minimize the use of herbicides.

The first phase of the program requires that a contract crew patrol each right-of-way cutting all hardwood species over 8 feet tall and most of the softwood species. The stumps of trees capable of resprouting are treated with a herbicide. This reduces the amount of foliage that must be treated each cycle. Areas not suitable for foliar herbicide application during the summer are to be entirely cut at this time, and stump treatment to be used where appropriate.

The second phase of this year's program requires that the contract crew patrol each transmission line a second time, treating all remaining tree species capable of growing into the conductors or that block access to the right-of-way. The herbicides are applied with a backpack, hand pressurized spray tank. The tank pressure is low, so the potential for off target movement of the mix is minimized. A contract crew composed of 5 to 8 people will selectively treat the capable species.

A no spray zone is maintained around wells, municipal water supplies or any open water. The buffer zone will vary depending on the topography, a minimum of 25 feet is maintained on all water and a minimum 100-foot buffer is maintained on drinking water supplies. These buffers provide an additional margin of safety.

A low-pressure foliar application technique will be used on the majority of right-of-way scheduled this year. The herbicides and adjuvants, including a drift control agent, are mixed in water at rates of 1/8% - 5%. A hand-pressurized backpack sprayer is used to selectively apply the mix directly to the leaves of the undesirable species. The large droplet size, low tank pressure, and drift control agents, combined with the selective application technique, reduces the potential for drift to a very minimal level. The following is a list of herbicides CMP may use depending on species composition, density and environmental factors:

Garlon 4 Ultra EPA Reg. No. 62719-527
Arsenal Powerline EPA Reg. No. 241-431
Milestone VM EPA Reg. No. 62719-537
Rodeo EPA Reg. No. 62719-324
Stalker EPA Reg. No. 241-398
Aqufact (adjuvant)
HY-Grade I (carrier)
Liberate (adjuvant)
Penetron (adjuvant)
Propolene Glycol (carrier) - used in winter cst mix

Before a treatment technique or herbicide is selected, a review of the right-of-way is conducted including a list of landowner maintenance agreements, known municipal water supplies, and brush densities. This information helps CMP personnel select the herbicides and determine the mix rates.

A form is given to each crew foreman before the job starts listing all special arrangements, herbicides, and mix rates. All the work is performed by licensed contract crews. The contract crews will post a sign on the first structure on each side of all public roads stating the date and herbicide used. If herbicides are not applied near the road crossing structure, the first structure where herbicides are used will be posted.

Each town that has a transmission right-of-way scheduled for herbicide work in 2016 will be notified in advance. A landowner maintenance agreement is available to any landowner or municipality objecting to the use of herbicides. The landowner agrees to keep brush to a height less than 10 feet and a CMP inspector looks over each area annually. CMP personnel will notify the staff of the Board of Pesticide Control at the start of the season of general work locations. Daily locations are available at CMP's General Office.

The following list identifies the CMP transmission section numbers and general locations for 2016 scheduled work. Plan and profile maps for each right-of-way are on file at the General Office in Augusta.

2016 CMP TRANSMISSION VEGETATION MANAGEMENT SCHEDULE

Line	Line Name
2	Bowman Street to Capital Street
9	Shawmut to Weston Hydro
13	Fort Halifax to Jct. L. 38
15	Lakewood 34.5KV to Anson
23	Edgecomb to Boothbay Harbor
24	Belfast 115KV to Benton Switch
24A	Jct. L. 24 to Beaver Ridge
25	Mason to Edgecomb
25A	Jct. L. 25 to Sheepscot
28	Damariscotta Mills to Bristol
29	Guilford to Monson
34	Guilford to Dover
35	Jct. L. 5 to Carmel
36	McCoy's to South China

39	Puddledock Rd. to Augusta E. Side
39A	Jct. L. 39 to Capital Street
39B	Jct. L. 39 to Bond Brook
39C	Jct. L. 39 to Augusta K-5
48	Park Street to Thomaston Creek
51	Park Street to Waldoboro
51A	Highland to Jct. L. 51
53	Hotel Road to Norway
53A	Mechanic Falls to Mech. Falls Hydro
57	Norway to Kimball Road
61	Larrabee Rd. to Norway
61A	Jct. L. 61 to Hotel Road
65	Bucksport to Orrington
71	Winslow 34KV to Scott Paper Co.
71A	Jct. L. 71 to Hydro-Kennebec
73	Weston Hydro to Lakewood
79	Weston Hydro to Lakewood
80	Coopers Mills to Highland
87	Norway to Kimball Road
89	Livermore Falls to Riley
91	Bridgton to Hiram Hydro
94	Kimball Road to Bridgton
95	Bonny Eagle to Limerick
95A	Jct. L. 95 to Perrier
100	Moshers to Spring Street
101	Spring Street to Sewall Street
101A	Jct. L. 101 to Reg. Waste Systems
104	Elm Street to Freeport
112	Sanford to Sanford Switch
112A	Jct. L. 112 to High & Allen Stations
114	Sanford to Sanford Switch
114A	Jct. L. 114 to High St.
145	W. Buxton 115 to Perrier
160	Cape S/S to Pleasant Hill
161	Moshers to Sewall Street
171	Bidd. Ind. Park to Branch Brook
171A	Jct. L. 171 to Kennebunkport
174	Louden to Factory Island
175	Louden to Bidd. Ind. Park
176	Bolt Hill to Portsmouth Navy Yd
176A	Jct. L. 176 to Eliot
177	Bolt Hill to Airco
183	West Buxton to Bonny Eagle
186	Bishop St. to Prides Corner
188	Spring Street to Bishop St.
190	Moshers to Prides Corner
191	Moshers to Sewall Street
199	Factory Island to MERC

200	Livermore Falls to Larrabee Rd.
200A	Jct. L 200 to AEI
202	Crowley's to Lewston Lower
204	Mason to Newcastle
205	Bucksport to Orrington
208	Surowiec to Raymond
210	Kimball Road to Woodstock
214	Kimball Road to NH Border
215	Wyman Hydro to Bigelow
217	Kimball Road to Rumford I. P.
218	Rumford to Meade
221	Woodstock to Rumford I.P.
226	Newcastle to Highland
227	Riley to A.E.L.L.C.
228	Rumford to Rumford I.P.
229	Rumford I. P. to Ludden Lane
230	Riley to Jay I.P.
251	Livermore Falls to Larrabee Rd.
268	Gulf Island 115 to Larrabee Rd.
280	Riley To Ludden Lane
378	Mason to Maine Yankee
385	NH to Pole 80 (Lebanon) cut only
391	NH to pole 82 (Lebanon) cut only
3024	Cooper Mills to Albion Rd.
3025	Coopers Mills to Larrabee Rd.

MEPCO

Line	Line Name
392	Maine Yankee to Coopers Mills

From: cleanearth@tds.net [mailto:cleanearth@tds.net]
Sent: Friday, January 08, 2016 10:30 AM
To: Jennings, Henry
Subject: neonics found to kill bees

Henry – Do you put information I send into Board members' packets? I've seen no action on neonicotinoids.....

Here's yet another reason for the Board to ban neonicotinoids in Maine – the Environmental Protection Agency has finally found that neonics kill bees.....after much of the civilized world has done so for years.

http://www.motherjones.com/tom-philpott/2016/01/epa-finds-major-pesticide-toxic-bees – please print out this article and put into Board members' folders.

From: Carol Laboissonniere [mailto:info@cldesignlandscape.com]
Sent: Thursday, January 28, 2016 7:21 PM
To: Fish, Gary
Cc: Sarah Lachance; Deborah Bauman; alandpals@yahoo.com; Patricia Keller
Subject: FW: Roundup Resistant Grass - Attachment now attached!!

Gary,
This is a follow up to our recent telephone conversation on the Kennebunkport Conservation Commission's effort to reduce pesticide use. The attached article was in Turf Magazine, an industry publication to promote the lawn care business. The article also includes a section on low mow grass which was left in to be able to include the author's information at the end of the article.

We are concerned that the use of this grass will create more indiscriminate use of chemicals on lawns. We would appreciate the Board of Pesticide's thoughts on this issue.

Thank you for your attention to this matter,
Carol Laboissonniere (207-475-7870)
On behalf of the Kennebunkport Conservation Commission members who are copied on this message.

PSR® Maine
Physicians for Social Responsibility
Maine Chapter

PO Box 4744
Portland ME 04112

207.210.0084

www.psrmaine.org

February 8, 2016

Maine Board of Pesticides Control
Department of Agriculture, Conservation and Forestry
28 State House Station
Augusta ME 04333-0028

Dear Members of Maine's Board of Pesticides Control,

Physicians for Social Responsibility Maine Chapter (PSR Maine) is a statewide organization comprised of medical and healthcare professionals and advocates. We are writing today to endorse the Maine Organic Farmers and Gardeners Association (MOFGA) work to reduce pesticide reliance and use in Maine.

As we are all aware, pesticides are designed to kill living organisms, and today more scientific studies are finding connections between the use of pesticides, especially organophosphates, and certain diseases.

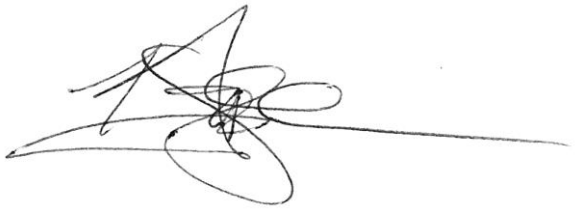
A urinary biomonitoring study completed in 2006[1] found that an organic diet immediately reduced the exposure to organophosphate pesticides in school-aged children. Another study in 2011, indicated a 50% increase in childhood leukemia risk following routine maternal pesticide use in the home or garden.[2] The American Academy of Pediatrics recommends reducing children's exposure to pesticides at home including the use of pesticides indoors and outdoors where a 2015 AAP study found an association to leukemia and brain tumors.[3] Children are most vulnerable from pesticide exposures because their bodies are still developing, however; adults' health is also at risk.

Pesticides can damage the male reproductive system in a number of ways. Some chemicals can kill or damage cells resulting in infertility. Others may alter DNA structure, causing gene mutations that may result in birth defects or an inability to conceive, while still others can change the way genes are expressed.[4] And in 2015, the International Agency for Research on Cancer, a research arm of the World Health Organization, said that glyphosate is a "probable" cancer-causing substance, or carcinogen.

Over two dozen municipalities in Maine currently ban or restrict the use of pesticides in a number of ways that protect their citizens and natural resources. The number is growing with Portland and South Portland

currently working on ordinances. The importance of education and public health policy cannot be understated. PSR Maine supports policy restrictions as well as education that would reduce exposures to all Maine families and children and prevent disease.

Thank you.



Karen A D'Andrea
Executive Director

[1] Lu C, Toepel K, Irish R, Fenske RA, Barr DB, Bravo R, EHP. 2006, http://www.ncbi.nlm.nih.gov/pubmed/16451864
[2] inson F, Merhi M, Baldi I, Raynal H, Gamet-Payrastre L. Exposure to pesticides and risk of childhood cancer: a meta-analysis of recent epidemiological studies. Occupational and environmental medicine. Sep 2011;68(9):694-702
[3] Mei Chen, Chi-Hsuan Chang, Lin Tao, Chensheng Lu, 2015, American Academy of Pediatrics, Residential Exposure to Pesticide During Childhood and Childhood Cancers: A Meta-Analysis, http://bit.ly/1L0d3a4
[4] Collatta, M. et al "Epigenetics and pesticides," Toxicology 307 (2013) 35-41

Maine Board of Pesticides Control

Miscellaneous Pesticides Articles
February 2016

(identified by Google alerts or submitted by individuals)

From: Carol Laboissonniere [mailto:info@cldesignlandscape.com]
Sent: Thursday, January 28, 2016 7:21 PM
To: Fish, Gary
Cc: Sarah Lachance; Deborah Bauman; alandpals@yahoo.com; Patricia Keller
Subject: FW: Roundup Resistant Grass - Attachment now attached!!

Gary,
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We are concerned that the use of this grass will create more indiscriminate use of chemicals on lawns. We would appreciate the Board of Pesticide's thoughts on this issue.

Thank you for your attention to this matter,
Carol Laboissonniere (207-475-7870)
On behalf of the Kennebunkport Conservation Commission members who are copied on this message.

By DOUG BREDE

Scientists regenerate genetically modified, or GM, grass plants from living tissue after new genes are inserted.

Seeds of Disruption

Two technologies are lining up to change the lawn care industry as we know it.

What do these four businesses—Insley, Koehring, Little Giant and Link-Belt—have in common?

In the 1950s, they were major manufacturers of cable-actuated backhoes, or what used to be called steam shovels. They were also among more than 30 manufacturers that failed when an innovative and disruptive technology—hydraulics—emerged in the 1960s.

Firms such as J.I. Case, John Deere, Ford, International Harvester, Caterpillar, Komatsu and Hitachi were the winners—the businesses that jumped into hydraulics and capitalized on this new technology. They endured because they not only accepted change but also used it to their advantage. Disruptive businesses may produce lower gross margins, target smaller markets and provide simpler products and services, says Clayton Christensen, Harvard Business School professor, author and leading thinker on innovation. Disruptive products are initially ones the customer doesn't want and can't use, yet they revolutionize the marketplace, just as hydraulics forever changed the excavator industry.

Two seed innovations on the horizon may prove as disruptive to the lawn service industry as hydraulics was to machinery. But opportunities exist for companies to hold their own when these new technologies come knocking rather than being left out as the marketplace evolves.

Roundup-resistant grass seed

Over the past decade, Scotts Miracle-Gro has transformed itself from a company selling commodities such as seed and fertilizer into one of the top U.S. players in residential and commercial lawn care. Now, after 17 years in the lab, Scotts is preparing to unleash a disruptive innovation: Roundup-resistant turfgrass.

Scotts has gained federal deregulation of Roundup-resistant tall fescue, with similar innovations in Kentucky bluegrass and St.

Augustinegrass close behind, according to a West Coast agricultural newspaper. This means the firm is free to plant and market genetically modified (GM) turf without further federal regulation. GM crops are commonplace in agricultural production fields. But this will mark the first time these varieties have entered the turfgrass seed market.

By some estimates, putting a single GM variety through federal regulatory approval costs north of $20 million. With turfgrasses, it's even more costly. Why? In a cornfield, a single variety of corn grows. In a lawn, four varieties of various species may be in the mix. If a contractor intends to spray Roundup on that mixture, the seed company would have to put all four varieties through federal registration at a cost of $80 million.

How did Scotts get Roundup-resistant turf approved without breaking the bank? The answer to this question requires a little background. Unbeknownst to many, lawmakers have never created a federal agency to approve GM plants. The authority was bootlegged from existing programs based on the fact that some pathogenic organisms and virus genes are used to develop GM plants. Certain federal agencies do indeed have the

Understanding disruptive innovations

Many companies fail while fighting innovations rather than embracing them. Clayton Christensen, Harvard Business School professor, author and leading thinker on innovation, shares a few of his teachings on this topic.

- New disruptive technologies are initially embraced by the *least* profitable businesses, not the most profitable ones.
- Most often, new ideas catch fire in small, insignificant market segments. Rarely do they start with market leaders.
- The usual paradigms of sound business management—work harder and smarter, listen more—are useless when dealing with a disruptive technology.
- Companies that listen to their customers rarely invest in disruptive technologies until it is too late.
- Businesses focused on stealing competitors' customers take their eyes off of their customers' next-generation needs.
- Companies that succeed with a disruptive technology have managers who took the time to find the right customers for the product.

authority to regulate transport of potential pathogens or parts thereof.

In a stroke of near genius, scientists at Scotts created Roundup-resistant grass without using pathogens or viruses to help insert the genes. Therefore, this innovation does not fall under federal jurisdiction, clearing the way for commercial release.

As Christensen asserts, disruptive technologies like this one initially have some warts. Five separate concerns have emerged about Roundup-resistant turfgrass:

1. Resistance isn't bulletproof. When the plant is exporting into its roots, it may become susceptible to damage from Roundup.
2. To achieve slower growth and to make its product government friendly, Scotts had to use old technology. It is uncertain whether this strategy will work or will result in uncompetitive, easily trampled plants that produce little seed.
3. Pollen escape is still a real possibility. Turfgrasses don't creep far vegetatively, but they can take a ride by way of the wind when pollen is shed. Scotts discovered this the hard way when pollen from its experimental Roundup-resistant bentgrass wafted 15 miles to cross with other bentgrasses in the landscape, creating Roundup-resistant "weeds."
4. As with all disruptive products, there is a possibility that customers may not appreciate the value of the product. Do customers really want Roundup-resistant fescue, and are they willing to pay extra for it? Will the seed be inexpensive enough to allow contractors to make a profit? Will GM turf create more problems than it solves?
5. There is the issue of exclusivity. Will Scotts be willing to share this innovation with friendly competitors or will it keep it to itself to capture market share?

All existing vegetation must be killed before converting to a turfgrass like My Holiday Lawn. Any vegetation left behind will, unfortunately, outgrow My Holiday Lawn and cause problems later.

PHOTOS: DOUG BREDE

These grass plugs were extracted from one-year-old turf plots that had not been mowed for one month. The appearance of the turfgrass on right improves as it matures.

Low-mow grasses

My Holiday Lawn is the brand name for a series of grasses I developed over the past 14 years that can be mowed as little as once a month rather than once or twice a week. According to Homewyse, a "vendor-neutral" online reference for consumers and trade professionals, the average homeowner could save $1,000 per year in mowing service costs. Commercial property owners stand to save even more.

The idea for this patent-pending innovation traces back 25 years. Arden Jacklin, who founded Jacklin Seed in 1936, authored an opinion article in which he describes the most common question homeowners' groups ask him: "When will you have for us a lawn grass that doesn't have to be mowed?"

Jacklin's response: "You just think you want a grass that does not require mowing. Reduced mowing may be possible, but no mowing at all is not." He went on to explain that if a grass is not actively growing, it won't be able to heal from normal wear and tear. Some growth is desirable but too much just leads to extra mowing.

I began envisioning the possibilities back in the 1990s, when I stumbled upon some curious miniature plants growing in my breeding nursery. In plant breeding, serendipity is often the mother of invention. In 2002, I assembled a lawn trial containing plots of all the dwarf mutants I could locate at the time. It actually was a small trial of only 40 entries, but it was intended as a proof of concept. The results were something less than desirable. The grasses looked dismal with infrequent mowing. They just weren't pretty.

But I didn't give up. My eureka moment came a couple of years later when I had tractor and plow poised to recycle several large, aging turf trials. What if we turned these trials into source material for infrequent-mow varieties? The technique sounded deceptively simple: Mow the variety trials just a few times a year and see what performs best.

The technique worked amazingly well. In all, 10,000 experimental varieties were tested and rated. A rating of one was undesirable, five was minimally acceptable and nine was get-down-on-your-knees-and-kiss-the-grass beautiful. Believe it or not, out of 10,000 plots, there were a handful that got me down on my knees.

The selected varieties are somewhat shorter than a typical Kentucky bluegrass plant, but they are not miniature or dwarf. Being shorter in stature, these grasses do not produce as much seed as normal lawn grasses, so their seed price is somewhat higher, but not prohibitively expensive considering the savings in mowing costs. For homeowners, these grasses can pay for themselves after the first year or two.

The difference between a normal lawn grass and My Holiday Lawn, however, is more complex than just less top growth. In between mowings, a normal lawn grass grows substantially above the intended mowing height, whereas My Holiday Lawn grows green foliage both above and below the mowing height.

These unique grasses require a different approach to lawn care. The lawn's mowing frequency is dictated by the tallest growing component, not the shortest. Just a few tufts of fescue here or there indicate that it's time to mow when otherwise the low-growing grass wouldn't need it for another two weeks. That's why it's important to start with a clean planting bed.

Besides being susceptible to tall grasses, this turf has other quirks. First, the attractive striping pattern after a monthly cut doesn't last as long. It will dissipate in a couple of weeks, replaced by a soft, uniform appearance. Second, it will need regular mowing during its establishment year. Like any lawn grass, it needs fertilization to complete the stand. After the stand is full, fertilizing and mowing can be reduced. Third, My Holiday Lawn is a series of bluegrasses, and bluegrass is not adaptable everywhere. However, in North America alone, more than 100 million people can grow a bluegrass lawn.

One of the steps Scotts used to get Roundup-resistant fescue past government regulators was to insert genes into the new plant using a gene gun. The U.S. Department of Agriculture ruled that it doesn't have jurisdiction over such methods because they don't involve pathogenic bacteria or viruses in the gene transfer.

Discover your niche

Roundup-resistant turf and My Holiday Lawn are scheduled for full release in 2016. Both products, which are aimed at reducing lawn mowing, could be disruptive innovations. Should contractors embrace them or continue with business as usual? Here are some thoughts on how to proceed:

- Rather than viewing these innovations as threats to the lawn service industry, look for ways to use them to advance.
- These novel lawn grasses require novel care. Become a specialist in applying Roundup to the grass and not the flowers or solve the problem of unwanted grass emerging in My Holiday Lawn.
- Become an expert at renovating lawns using these new technologies. This requires specialized expertise that is hard to copycat.
- Consider the advantages of being an early adopter. Early adopters would be first in line for second-generation products.

Doug Brede, Ph.D., has been research director for Jacklin Seed by Simplot for nearly 30 years. In that time, he and his staff have developed more than 100 popular turf varieties used around the world. He is the author of the book "Turfgrass Maintenance Reduction Handbook" and more than 400 articles on turf maintenance.

World | Fri Feb 5, 2016 2:26pm EST

Related: U.S., ENVIRONMENT, REGULATORY NEWS, BREAKINGVIEWS

Bayer rejects EPA request to pull insecticide from U.S. market

CHICAGO | BY KARL PLUME

The logo of German drugmaker Bayer is seen in Leverkusen April 26, 2014.
REUTERS/INA FASSBENDER

The agricultural unit of German chemicals company Bayer AG said on Friday it will fight a U.S. Environmental Protection Agency (EPA) request to pull one of its insecticides from the marketplace amid concerns that it could harm organisms in streams and ponds.

Bayer CropScience will instead ask for an administrative law hearing from the EPA's Office of General Counsel to review the registration of flubendiamide, the active ingredient in Bayer's Belt pesticide.

The registration, granted in 2008, was a limited-time conditional registration that could be canceled if additional studies found the chemical to be damaging, the EPA said in a statement.

"EPA concluded that continued use of the product will result in unreasonable adverse effects on the environment," the agency said.

Flubendiamide products are used to control yield-damaging moths and worms in more than 200 crops including almonds, oranges and soybeans.

Bayer's own tests have found that the pesticide is toxic in high doses to invertebrates in river and pond sediment. The organisms can be an important food source for fish.

However, the company's field studies showed that doses in waters near agricultural fields never reached high enough levels to be toxic.

But the EPA's risk assessment disagreed so the agency sent Bayer the request on Jan. 29.

"We are disappointed the EPA places so much trust on computer modeling and predictive capabilities when real-world monitoring shows no evidence of concern after seven years of safe use," said Peter Coody, Bayer vice president of environmental safety.

The EPA said after Bayer's refusal that it will issue a formal request to cancel the pesticide's registration. After a comment period mandated by U.S. pesticide regulation law, Bayer will ask for a formal hearing to determine the pesticide's fate.

Belt will remain on the market throughout the process.

Bayer reported 471 million euros ($527.5 million) in insecticide sales globally in its most recent quarter. The company declined to provide sales details of Belt.

The EPA's move follows the agency's unsuccessful attempt to withdraw its registration for Dow Chemical Co's Enlist Duo weed killer.

(Editing by Matthew Lewis and Meredith Mazzilli)

Monday, February 8, 2016 | 11:21 am

State orders halt to sale of pesticide used on cannabis plants

Taken off shelves; growers asked to stop using Guardian

From KTVZ.COM news sources

POSTED: 12:54 AM PST February 6, 2016
UPDATED: 1:23 AM PST February 6, 2016

SALEM, Ore. - The Oregon Department of Agriculture said Friday it has ordered a halt of sale and the removal of the pesticide product Guardian, which is labeled for use on ornamental, food, and feed crops for mite control but also used by cannabis growers.

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In addition, ODA is asking growers who may have purchased the pesticide product to refrain from using it. ODA's actions come following an investigation of the product that found the presence of the pesticide active ingredient abamectin, which is not listed on the product label.

A statewide Stop Sale, Use, or Removal Order (SSURO) has been issued by ODA to the manufacturer of Guardian, All In Enterprises, Inc. of Machesney Park, Illinois. The order calls for the company to immediately cease all sales, offers of sale, or other distribution of the product in Oregon.

The product label identifies the active ingredients as cinnamon oil and citric acid, and claims the product is 100 percent natural.

ODA said it's investigation was a result of concerns of product adulteration brought to the agency by a private laboratory as well as representatives of the cannabis industry. ODA's Pesticides Program obtained and sampled Guardian from several retail locations in Oregon. Laboratory analysis found the presence of abamectin.

ODA said it is working with the Oregon Health Authority and Oregon Liquor Control Commission to determine potential human health concerns associated with the use of cannabis products treated with Guardian.

"Growers are advised, in an abundance of caution, not to use Guardian until a review and assessment of human health concerns are completed," the announcement said. "Retailers and the general public in possession of the product are advised not to sell, offer for sale, or distribute Guardian. ODA is working with the manufacturer to determine the appropriate disposition of product that is currently in commerce or with growers."

ODA also said it will be proceeding to address violations of Oregon's Pesticide Law, which include adulteration of a pesticide product, misbranding of a pesticide product, and making false or misleading claims about a pesticide product.

Meanwhile, the agency said it continues to maintain a list of pesticide products to help guide marijuana growers and pesticide applicators throughout the state. The guide list is available on ODA's cannabis

and pesticides webpage at <http://go.usa.gov/cURJH>.

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NIOSH

New Study First to Describe Scope of Illness Associated with the Use of Two Common Herbicides

NIOSH Update: **February 3, 2016**

Contact: Stephanie Stevens (202) 245-0641

A majority of herbicide-related deaths are caused by just two of the more commonly used weed killers—paraquat and diquat—and despite its toxicity, most cases of illness related to paraquat poisoning were low to moderately severe according to new research published in the journal, Environmental Research by the National Institute for Occupational Safety and Health (NIOSH).

To identify the magnitude of illness attributed to the use of paraquat and diquat in the U.S., as well as the causes of illness, researchers examined combined data from three sources from 1998 to 2011: the NIOSH Sentinel Event Notification System for Occupational Risks (SENSOR)-Pesticides Program; the California Department of Pesticide Regulation Pesticide Illness Surveillance Program; and the U.S. Environmental Protection Agency, Office of Pesticide Programs' Incident Data System. Additionally, researchers assessed data from a national database, the National Poison Data System, for national trends of paraquat- and diquat-related illnesses.

"This is really the first time we've looked at the extent of illness caused by these herbicides," said NIOSH Director John Howard, MD. "We now know that all of the cases of illness and death related to these products are preventable, which will help us identify ways to better protect both the workers who need to use these products as part of their job and others exposed to these potentially harmful chemicals."

The study found 300 paraquat- and 144 diquat-related acute illnesses were reported in 35 states and 1 U.S. territory; 76 percent of paraquat-related cases were work-related. While the majority of cases of paraquat-related illness were low to moderately severe—health effects commonly included skin, eye, or neurological symptoms—researchers identified several deaths. Compared to other pesticides, paraquat or diquat was responsible for the majority, 85 percent, of herbicide-related deaths in the U.S.

Of the cases reported, 43 individuals ingested paraquat and 25 ingested diquat. The majority of ingestion cases were unintentional and frequently occurred because the pesticides were improperly stored (e.g. in beverage bottles).

Failure to wear Personal Protective Equipment (PPE), especially eye protection, was the most common

reason people were sickened by paraquat; other causes included drift from the pesticide application site and accidental spills or splashes. For diquat, the most common cause of illness stemmed from application equipment failure followed by accidental spills or splashes.

“When less harmful weed control options aren’t an option, these findings suggest that additional training and stricter compliance with label instructions to ensure proper herbicide storage and PPE use are important measures to help prevent illness or even death,” said NIOSH Medical Officer and senior study author Geoff Calvert, MD, MPH.

For access to a copy of the study please visit: http://dx.doi.org/10.1016/j.envres.2016.01.003 (http://dx.doi.org/10.1016/j.envres.2016.01.003). For more information about the Sentinel Event Notification System for Occupational Risk (SENSOR) visit www.cdc.gov/niosh/topics/pesticides/overview.html (http://www.cdc.gov/niosh/topics/pesticides/overview.html).

NIOSH is the federal agency that conducts research and makes recommendations for preventing work-related injuries, illnesses, and deaths. For more information about NIOSH visit www.cdc.gov/niosh/ (http://www.cdc.gov/niosh/).

Page last reviewed: February 3, 2016
Page last updated: February 3, 2016
Content source: National Institute for Occupational Safety and Health (http://www.cdc.gov/NIOSH/) Education and Information Division

Full study link http://www.sciencedirect.com/science/article/pii/S0013935116300032

INSIGHTS

No larger than a pinhead in size, a female *V. destructor* uses a worker bee as transport and food source.

PERSPECTIVES

ECOLOGY

The mite that jumped, the bee that traveled, the disease that followed

Global expansion and trade contributed to the declining health of honeybees

By **Ethel M. Villalobos**

European honeybees are among the best-studied and most widely recognized insect species in the world. Originally kept for honey production, they have become the flagship species for pollination and large-scale agriculture. Since large colony losses were reported across the United States in 2006, researchers have investigated the myriad factors that contribute to the decline in honeybee populations. In particular, the aptly named *Varroa destructor* mite (see the photo) and the deformed wing virus (DWV) have been clearly linked to colony collapse (*1*). On page 594 of this issue, Wilfert *et al.* use a phylogeographic analysis to examine the evolutionary origin and mechanisms for the global spread of the DWV (*2*).

Based on molecular data from 17 countries and 32 geographical regions, the authors confirm that DWV is an endemic

PHOTO: MATT BERTONE

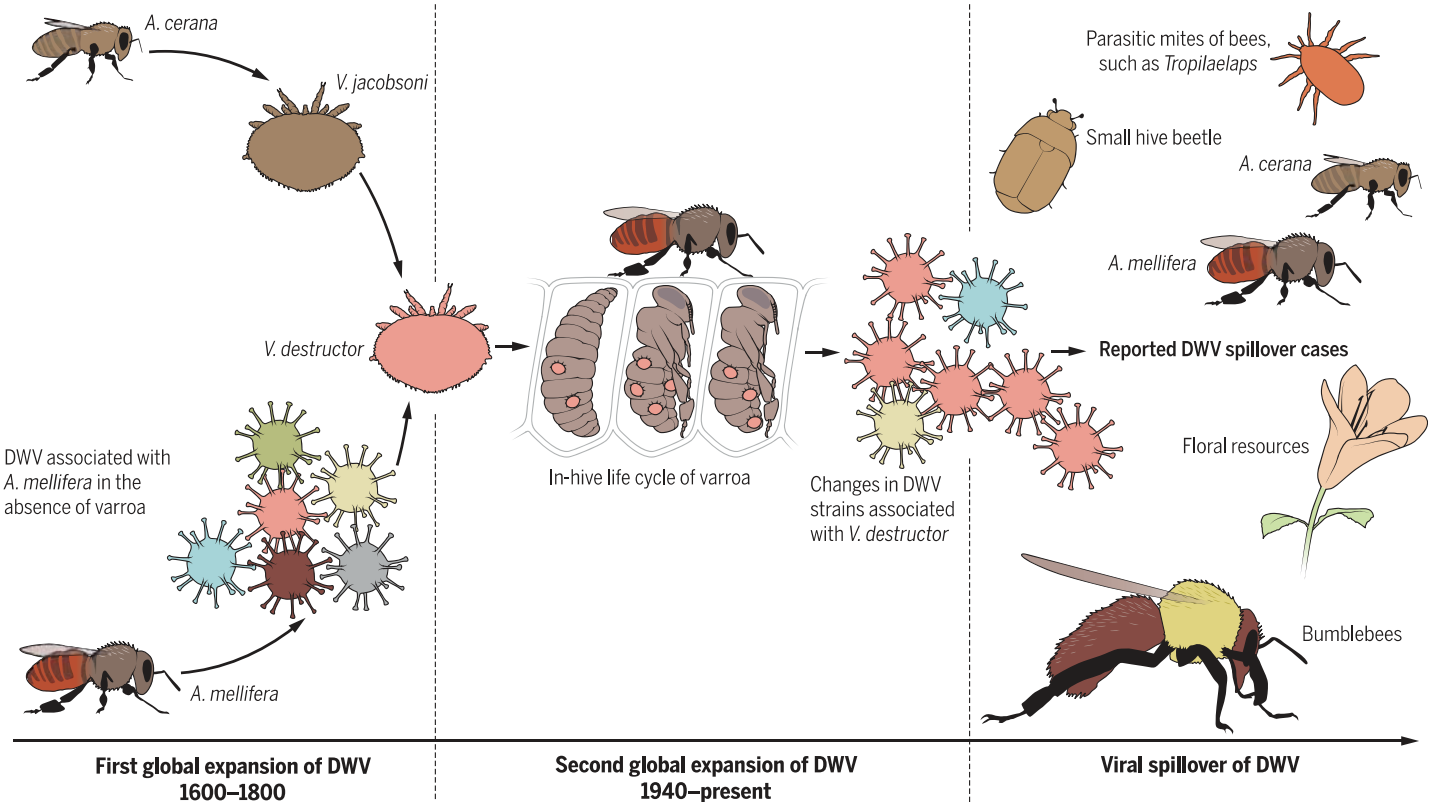
pathogen of the European honeybee, *Apis mellifera* (see the figure). Thus, the recent honeybee decline associated with DWV constitutes the reemergence of a previously existing disease of *A. mellifera*. This reemergence was facilitated by the spread of the new vector *V. destructor* and by human transport of honeybee colonies from Europe and North America to other geographical regions.

The DWV epidemic is part of a global trend of disease reemergence affecting a diverse range of organisms. In the past 20 years, an increase in viral diseases of vegetable crops has greatly affected productivity worldwide. This change was driven by the spread of an insect vector, the whitefly, *Bemisia tabaci*, and the human transport of infected plants (*3*). In the case of the European honeybee and *V. destructor*, natural genetic variation in the brood parasite *Varroa jacobsoni* facilitated its jump from the Asian honeybee (*Apis cerana)* to the European honeybee (*A. mellifera*). Two haplotypes derived from *V. jacobsoni* have adapted to reproduction on *A. mellifera*; both of these haplotypes are now grouped under *V. destructor* (*4*). This novel vector-host relationship was mediated by human introduction of European honeybees to central and southeastern Asia, bringing these two closely related bee species (*5*) into contact.

Martin *et al.* (*1*) have shown that the arrival of *V. destructor* on previously varroa-free islands in Hawaii led to a rapid reduction in DWV strain diversity, coupled with a dramatic increase in virulence. Wilfert *et al.* (*2*) now track the historical global movements of DWV and show that in the recent past, the virus has spread to multiple hosts. Cross-species infections and viral reemergence are more likely to occur if the virus is a "generalist" that can recognize a range of cell receptors and invade a diversity of tissues and hosts (*6*, *7*). According to Wilfert *et al.* (*2*), three viral fragments of the DWV (*rdrp*, *vp3*, and *lp*) show little host specificity, a trait that would favor global expansion. The data provide solid evidence for transmission of DWV from the ancestral host, *A. mellifera*, to *V. destructor,* as well as to novel hosts, such as *Tropilaelaps clarea* (another Asian honeybee mite) and bumblebees.

As with the viral-whitefly association (*3*), the role of humans in the global spread of the European honeybee, the varroa mite, and DWV is undeniable. The first expansion of the honeybee's range began in the early 1600s and continued until the late 1800s. Honeybee colonies were transported on slow-moving cargo ships, packed in iceboxes to simulate winter months and slow their metabolism (*8*). The second large wave of expansion occurred in the past 75 years, promoted by the development of large-scale modern agriculture (see the figure). Wilfert *et al.* use 20th-century samples to reconstruct the origin and migration rates of the DWV during this second wave and correlate the virus expansion with global patterns of mite distribution. Europe and North America are clearly the main centers for transmission of DWV to other areas of the world. Varroa-free areas, such as Australia and some islands in Hawaii, show weaker migration rates of DWV due to geographical isolation, reduced trade, and restrictions on the import of live honeybees to these regions.

Knowledge of the history and ecology of new diseases provides a framework in which to understand the origins, effect, and possible strategies for pathogen control.



Global spread. As shown by Wilfert *et al*., factors driving the global reemergence of DWV, an endemic pathogen of the European honeybee, include human-mediated movement of managed bees, adaptation of a vector mite to a novel host, and changes in the viral population. The first global movement involved managed bees without the vectoring mite. The second, more recent, event occurred after the varroa mite had come into contact with DWV. The increased viral levels and pathogenicity of DWV in the presence of *V. destructor* appear to be linked to a viral spillover to floral resources and a number of arthropod species, including native solitary and social bees.

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ILLUSTRATION: P. HUEY/*SCIENCE*

Wilfred *et al.* provide such a tool by combining molecular data, geography, and a time line for the global dispersion of DWV and *V. destructor*. The high levels of DWV due to mite-related transmission (*9*) affect not only honeybees, but also possibly other insects that may come into contact with the virus (*10*) and food resources they share (*10*, *11*). DWV has been detected in various insect groups that play dramatically different ecological roles, including insect predators and scavengers, pollinators, and pest species that live inside the colony (*10*).

The increased prevalence of DWV in infected colonies, combined with the high density of colonies in certain regions, creates a favorable environment for the virus to spread. The global snapshot provided by Wilfert *et al.* suggests that certain geographic areas have unique ecological conditions that may shed light on the evolution of the DWV and the host-vector relationship. South America, for example, hosts a hybrid of the European and the African honeybee, *Apis scutellata*, which shows genetic differences in immune responses and a greater tendency to remove brood infected by varroa from the hive (*5*). The overlapping ranges of *A. mellifera* and *A. cerana* in Southeast Asia provide an opportunity to compare noncoding RNAs that may be related to antiviral activity (*12*).

Finally, three master variants of DWV—type A, type B, and the newly discovered master variant type C—may produce recombinants, compete with each other within the host colony, and differ in virulence levels (*7*). The few remaining varroa-free refugia provide a unique opportunity to study the numerous master strains that exist without the vector's input. In-depth studies of virus, vector, and host populations in diverse geographical regions will help to understand how viruses spread to new hosts and adapt to new environments. ■

REFERENCES AND NOTES

1. S. J. Martin *et al.*, *Science* **336**, 1304 (2012).
2. L. Wilfert *et al.*, *Science* **351**, 594 (2016).
3. J. Navas-Castillo *et al.*, *Annu. Rev. Phytopathol.* **49**, 219 (2011).
4. D. L. Anderson, J. W. H. Trueman, *Exp. Appl. Acarol.* **24**, 165 (2000).
5. A. Wallberg *et al.*, *Nat. Genet.* **46**, 1081 (2014).
6. A. Moya *et al.*, *Nat. Rev. Microbiol.* **2**, 279 (2004).
7. G. J. Mordecai, L. Wilfert, S. J. Martin, I. M. Jones, D. C. Schroeder, *ISME J.* 10.1038/ismej.2015.178 (2015).
8. E. Crane, *The World History of Beekeeping and Honey Hunting* (Routledge, New York, 1999).
9. Y. P. Chen *et al.*, *Appl. Environ. Microbiol.* **71**, 436 (2005).
10. R. Singh *et al.*, *PLOS ONE* **5**, e14357 (2010).
11. D. P. McMahon *et al.*, *J. Anim. Ecol.* **84**, 615 (2015).
12. M. Jayakodi *et al.*, *BMC Genom.* **16**, 680 (2015).

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The mite that jumped, the bee that traveled, the disease that followed

Ethel M. Villalobos

Science **351**, 554 (2016);
DOI: 10.1126/science.aaf0938

From: cleanearth@tds.net [mailto:cleanearth@tds.net]
Sent: Friday, January 08, 2016 10:30 AM
To: Jennings, Henry
Subject: neonics found to kill bees

Henry – Do you put information I send into Board members' packets? I've seen no action on neonicotinoids.....

Here's yet another reason for the Board to ban neonicotinoids in Maine – the Environmental Protection Agency has finally found that neonics kill bees.....after much of the civilized world has done so for years.

http://www.motherjones.com/tom-philpott/2016/01/epa-finds-major-pesticide-toxic-bees – please print out this article and put into Board members' folders.

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The EPA Finally Admitted That the World's Most Popular Pesticide Kills Bees—20 Years Too Late

—By ***Tom Philpott*** *(/authors/tom-philpott)* | Thu Jan. 7, 2016 2:08 PM EST

Armando Frazao (http://www.shutterstock.com/pic-94126963/stock-photo-a-dead-honey-bee-showing-many-details-of-body-legs-and-mouth-parts-apis-mellifera.html?src=LmKqi8V1VCv2S_dCMh_s7A-1-1)/Shutterstock

Bees are dying in record numbers—and now the government admits that an extremely common pesticide is at least partially to blame.

For more than a decade (https://grist.files.wordpress.com/2010/12/clothianidin-condl-reg-timeline.pdf), the Environmental Protection Agency has been under pressure from environmentalists and beekeepers to reconsider its approval of a class of insecticides called neonicotinoids, based on a mounting body of research (http://www.npr.org/sections/thesalt/2015/04/22/401536105/buzz-over-bee-health-new-pesticide-studies-rev-up-controversy) suggesting they harm bees and other pollinators at tiny doses. In a report (https://www.motherjones.com/files/epa-hq-opp-2008-0844-0140.pdf) released Wednesday, the EPA basically conceded the case.

Marketed by European chemical giants Syngenta and Bayer, neonics are the most widely used insecticides (http://www.tfsp.info/systemic-pesticides/) both in the United States and globally. In 2009, the agency commenced a long, slow process of reassessing them—not as a class, but rather one by one (there are five altogether (http://www.epa.gov/pollinator-protection/schedule-review-neonicotinoid-pesticides)). Meanwhile, tens of millions of acres of farmland

> The report card was so dire that the EPA "could potentially take action" to "restrict or limit the use" of

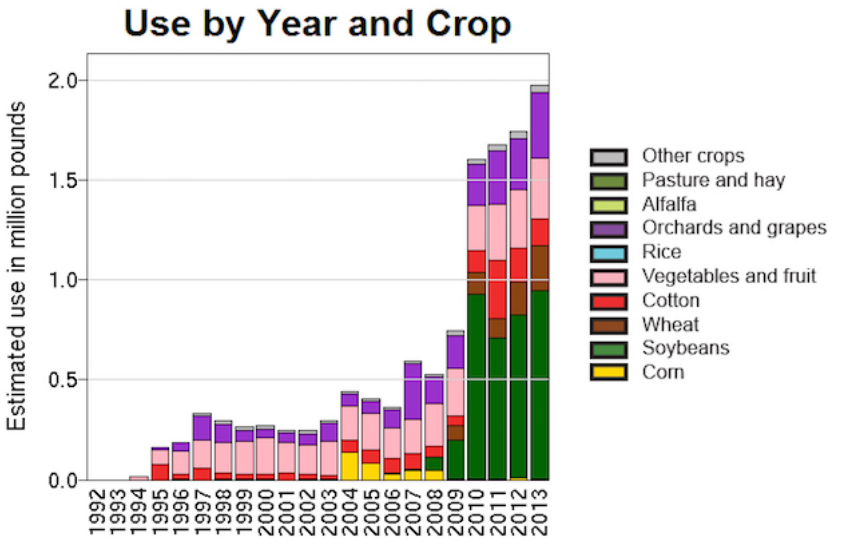
are treated with neonics each year, and the health of US honeybee hives continues to be dismal.

the chemical by the end of this year.

The EPA's long-awaited assessment focused on how one of the most prominent neonics—Bayer's imidacloprid—affects bees. The report card was so dire that the EPA "could potentially take action" to "restrict or limit the use" of the chemical by the end of this year, an agency spokesperson wrote in an emailed statement.

Reviewing dozens of studies from independent and industry-funded researchers, the EPA's risk-assessment team established that when bees encounter imidacloprid at levels above 25 parts per billion—a common level for neonics in farm fields—they suffer harm. "These effects include decreases in pollinators as well as less honey produced," the EPA's press release (http://yosemite.epa.gov/opa/admpress.nsf/eeffe922a687433c85257359003f5340/63e7fb0e47b1aa3685257f320050a7e3!OpenDocument) states.

The crops most likely to expose honeybees to harmful levels of imidacloprid are cotton and citrus, while "corn and leafy vegetables either do not produce nectar or have residues below the EPA identified level." Note in the below USGS chart (https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2013&map=IMIDACLOPRID&hilo=L&disp=Imidacloprid) that a substantial amount of imidacloprid goes into the US cotton crop.



Imidacloprid use has surged in recent years. Uh-oh. *US Geological Survey (https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2013&map=IMIDACLOPRID&hilo=L&disp=Imidacloprid)*

Meanwhile, the fact that the EPA says imidacloprid-treated corn likely doesn't harm bees sounds comforting, but as the same USGS chart (https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2013&map=IMIDACLOPRID&hilo=L&disp=Imidacloprid) shows, corn gets little or no imidacloprid. (It gets huge amounts of another neonic (https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2013&map=CLOTHIANIDIN&hilo=L&disp=Clothianidin), clothianidin, whose EPA risk assessment hasn't been released yet (http://www.epa.gov/pollinator-protection/schedule-review-

neonicotinoid-pesticides).)

> Soybeans could expose bees to dangerous levels of imidacloprid, but data on how much of the pesticide shows up in soybeans' pollen and nectar are "unavailable."

The biggest imidacloprid-treated crop of all is soybeans, and soy remains an information black hole. The EPA assessment notes that soybeans are "attractive to bees via pollen and nectar," meaning they could expose bees to dangerous levels of imidacloprid, but data on how much of the pesticide shows up in soybeans' pollen and nectar are "unavailable," both from Bayer and from independent researchers. Oops. Mind you, imidacloprid has been registered for use by the EPA since the 1990s.

The agency still has to consider public comments on the bee assessment it just released, and it also has to complete a risk assessment of imidacloprid's effect on other species. In addition to their impact on bees, neonic pesticides may also harm birds (http://www.motherjones.com/tom-philpott/2013/03/not-just-bees-bayers-pesticide-may-harm-birds-too), butterflies (http://www.mprnews.org/story/2015/02/10/butterfly-deaths-neonicotinoids), and water-borne invertebrates (http://www.ncbi.nlm.nih.gov/pubmed/25454246), recent studies suggest. Then there are the assessments of the other four neonic products that need to be done. Meanwhile, a coalition of beekeepers and environmental groups filed a lawsuit (http://www.centerforfoodsafety.org/files/2016-1-6-dkt-1--pls--complaint_11142.pdf) in federal court Wednesday pointing out that the agency has never properly assessed neonics in their most widely used form: as seed coatings, which are then taken up by crops.

As If Slavery Weren't Enough, 6 Other Reasons to Avoid Shrimp (/tom-philpott/2016/01/six-reasons-think-hard-about-shrimp-craving)

The Oregon Militia Is Picking the Wrong Beef With the Feds (/tom-philpott/2016/01/malheur-militants-are-picking-wrong-beef-feds)

TOM PHILPOTT (/authors/tom-philpott) *Food and Ag Correspondent*

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