



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**

**August 28, 2015**

**Science Building, Room 102, University of Maine at Machias, Machias, Maine**

**AGENDA**

**9:00 AM**

1. Introductions of Board and Staff
2. Minutes of the July 10, 2015, Board Meeting  
Presentation By: Henry Jennings  
Director  
  
Action Needed: Amend and/or Approve
3. Review of the Hearing Record and Potential Adoption of Amendments to Chapters 31, 34, and 35

*(Note: No additional public comments may be accepted at this time.)*

On June 17, 2015, a Notice of Agency Rulemaking Proposal was published in Maine's daily newspapers, opening the comment period on the proposed amendments to Chapters 31, 32, and 35. A public hearing was held on July 10, 2015, at the Deering Building. Three comments were received regarding the amendments. The Board will now review the comments and the responses drafted by the staff; the changes to the proposed amendments; the basis statements; and the statements of impact on small businesses; and determine whether it is prepared to adopt the proposed amendments or whether further refining is warranted.

Presentation by: Henry Jennings  
Director

Action Needed: Review the hearing record and provide direction to the staff on further refinements or adopt the amendments

4. Letter from the Legislative Committee on Agriculture, Conservation and Forestry

On July 16, 2015, the Joint Standing Committee on Agriculture, Conservation and Forestry of the 127<sup>th</sup> Legislature sent a letter to the Board requesting a review of its rules "in order to determine whether the standards for pesticide application and public notification for public parks and playgrounds should be consistent with the standards that have been established for pesticide

application and public notification in school buildings and on school grounds under CMR 01-026, Chapter 27.” The Board will now consider that request and identify an appropriate response.

Presentation By: Henry Jennings  
Director

Action Needed: Review the request from the Joint Standing Committee on Agriculture, Conservation and Forestry and provide guidance to the staff

5. Other Old or New Business

- a. Variance Permit for control of phragmites on Chebeague Island
- b. Variance Permit for control of poison ivy in Windham
- c. Variance Permit for control of phragmites in roadside ditches along forest roads
- d. Variance Permit for control of phragmites in York
- e. Other

6. Schedule of Future Meetings

October 9, November 13, and December 18, 2015, are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

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



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**BOARD OF PESTICIDES CONTROL**

**July 10, 2015**

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

**MINUTES**

Present: Eckert, Granger, Jemison, Morrill & Stevenson

1. Introductions of Board and Staff

- The Board, Staff and Assistant Attorney General introduced themselves.
- Staff Present: Connors, Fish, Hicks & Jennings

2. Public Hearing on Proposed Rule Amendments to Chapters 31, 34 and 35

The Board will hear testimony on the proposed amendments to the following three rules:

▪ **Chapter 31 Certification and Licensing Provisions/Commercial Applicators**

1. Change the license period from two years to three; change the certification period from six years to three and align the licensing and certification periods.
2. Amend the description of Category 6B to clarify what types of applications are included.
3. Change the requirement for passing both the core and category exams within one year of each other to within five years.
4. Clarify that certified or licensed wastewater or drinking water operators are exempt from licensing only while applying pesticides to the wastewater or drinking water and not while performing other duties such as weed management.

▪ **Chapter 34 Certification and Licensing Provisions/Dealers**

- a. Shorten the time period a person must wait before re-taking an exam they have failed to align with other licensing rules.
- b. Change the license period from one year to three; change the certification period from five years to three and align the licensing and certification periods.

▪ **Chapter 35 Certification and Licensing Provisions/Spray Contracting Firms**

1. Remove the requirements for spotters and monitors for forest insect aerial spray programs.
2. Change the license period from two years to three.

- The public hearing opened at 8:33 AM

- Morrill summarized the proposed changes and Jennings mentioned that written comments were due by July 24<sup>th</sup>
- No comments were received

3. June 5, 2015, Minutes:

Presentation By: Henry Jennings  
Director

Action Needed: Amend and/or Approve

- Jemison requested the following changes
  - Page 2, fourth bullet, last line should be “high “off” target residues...” and,
  - Page 3, 8<sup>th</sup> bullet, should start with, “Granger suggested a third option:...”
    - **Stevenson/Jemison: Moved and seconded to adopt as amended**
    - **In Favor: Unanimous**

4. Board Discussion About Herbicide Label Plant-Back Restrictions as They Apply to Cover Crops

At the April 24, 2015 meeting, John Jemison requested that the Board review the herbicide plant-back label restrictions and how they currently prevent farmers from planting cover crops that are being recommended by the United States Department of Agriculture. The staff has been researching the question and will update the Board on the current status.

Presentation By: Lebelle Hicks  
Staff Toxicologist

Action Needed: Provide input to staff

- Hicks introduced the issue and explained that there are many cover crops that may be recommended in Maine cropping systems, each with different susceptibilities to the herbicides commonly used on forage and vegetable crops. She also mentioned there are over 500 herbicide products which could potentially be applied to forage and vegetable crops, which is too many to review individually.
- Hicks looked at various cover crops like those that might follow corn or barley and compared those cover crops to the labels on both broadleaf and grass herbicides. Some of the herbicides would cause stunting on the cover crops but most would not affect grain development. Residues from some of the broad spectrum herbicides might affect most of the cover crops.
- Some of the herbicides are PrePlant or PreEmergence and they only have tolerances for the primary crop (as opposed to a cover crop). The herbicide needs a tolerance for the cover crop too if it will be used for food or feed. Green manure is not defined as a non-food use so that complicates things. Ideally there should be no need for a tolerance for a green manure.
- USDA recommends plant mixes as cover crops with 2 – 4 different plants in them which makes the analysis even more difficult. Some are not recognized as human food, but they are forages for animals. Some also provide feed for wildlife.
- Hicks described the table she has been working on. Thirty-two labels were reviewed. She only looked at commodities grown in Maine and only captured information for the Northeast region or Maine. Twelve out of thirty-two labels had specific language regarding cover crops: the others did not. Some had directions on doing bioassays before planting the cover crop to see if the plant grows well or not. A few examples of specific label language include:

- Shaper herbicide - don't count frozen ground time as part of the rotation restriction,
  - Sandea – 3 year restriction on planting cover crops
  - Rimsulfuron – very confusing label. Rotation intervals had guidelines and restrictions which depended on rain, irrigation etc. to determine when you could plant a new crop
- Eckert asked the staff to define “plant-back restriction.” Planting back the same crop?
  - Hicks explained that it was label restriction relating to planting of crops on a specific site after treating that site with an herbicide.
  - Jemison noted that USDA is encouraging multispecies cover crop mixes and some growers qualify for cost share money. He is concerned that the government may be paying for a grower to do something that is not completely legal. Because there are many benefits and the cover crop will not be used as food or feed, Pennsylvania has a huge program to promote the use of cover crops. Other states allow it for just soil cover. Jemison's objective is to make sure Maine allows soil management practices that are the most sustainable without the potential of getting farmers in trouble. He asked what can we do as a Board to affect this end? Rational public policy would allow Maine growers to use recommended cover crops even if they don't get a full stand. Otherwise they will just use glyphosate and that will result in glyphosate resistant weeds.
  - Lauchlin Titus was asked to speak. He said he was sorry that he started this and he is passionate about cover crops. He sought recertification credit for the last cover crop presentation he developed. He looked at labels on-line. Has done this for a long time and thought nothing of it.
  - In preparing for the Board Meeting, Titus did research and found a reference from the University of Nebraska Lincoln which states: “cover crops can be planted after any herbicide application if not used for food or feed.” If it will be used for food or feed it is breaking the law.
  - A statement from Penn State indicates, “cover crops not harvested can be planted after any herbicide application.” Cary Giguere, from the Vermont Agency of Agriculture, said growers can plant cover crops if they will accept a reduced stand and the crop will not be fed to animals. In those circumstances, it is considered green manure.
  - Jennings explained that all the statements Titus read are not from EPA. There are two important questions around cover crops: is it legal and is it beneficial. Cary Giguere gave a practical answer to a legal question. It is unfortunate that herbicide labels appear to prohibit most recommended cover crops. It's a shame to not allow this because it has environmental and agronomic benefits, but the Board is stuck because it was asked a legal question, which was then sent to EPA to interpret. We cannot give a practical answer to a legal question. We can't say a cover crop is not a crop. We need EPA and USDA to work together to figure this out. We need to ask the registrants to move this forward.
  - Tim Hobbs asked, what are the implications for potato growers? Titus replied that if a grower uses Sencor or Matrix they could have problems if they plant a mixed stand cover crop following potatoes.
  - Stevenson asked whether EPA has addressed this at all. Hicks replied that they have not and that she is trying to get the State FIFRA Issues Research and Evaluation Group's (SFIREG) Pesticides Operations and Management (POM) subcommittee to do an issue paper to send to EPA to address this problem and hopefully get USDA there as well. Stakeholders need to figure out what are the liability issues, what happens if an off label recommendation kills a cover crop? Can the grower sue the manufacturer? There have been problems in the past like this. Twelve of the thirty-two products have specific crop restrictions.

- Morrill asked whether this could be done with a 24C label? Hicks said not if it is a tolerance issue. Morrill asked, is it a tolerance issue? Hicks explained that if it is food or feed then it is a tolerance issue.
- Hobbs asked, what is the intended use? Morrill replied, I think you go with the intent of the use. Hicks said since the Starlink corn issue EPA probably won't allow the intent to be enough.
- Jennings explained that if you explicitly do a 24C where the cover crop is limited to green manure it might work but the company may not support the 24C label. He noted that there might be too many products to do this for. Jemison disagreed and asked whether the Board could adopt a policy that would allow for this use? Jemison distributed a draft policy.
- Randlett stated that adopting this policy would encourage growers to violate federal and state law. Stevenson said that isn't good. Morrill said the label is the law.
- Jennings suggested that maybe the Department could issue a policy? Randlett said he would not want that to happen either.
- Stevenson asked, how long has this been an issue? Hicks mentioned that in 1991 we had a similar plant-back issue.
- Morrill asked whether Hicks go to the SFIREG POM with this issue. Eckert asked, is the SFIREG POM the official committee? Hicks replied that it is.
- Stevenson mentioned the 24C registration idea again. Hicks said it is not a local need and that it is a national need.
- Morrill suggested the manufacturers should tackle this. Jemison said they will not because the companies are afraid of lawsuits for injured crops.
- Hicks offered another way to deal with it: have USDA come up with cover crops that are herbicide specific.
- Eckert asked is there a way to meet the letter of the law, or is that too difficult? Or is it impossible?
- Jemison said it would be a lot of work to offer specific cover crops. They might be able to do the research and develop an App for a smart phone. Growers will resort to the simplest solution. Growers do not have the time to figure it all out.
- Hicks said the Stinger label allows any grain but no legumes. So you could do a good mix following a Stinger application.
- Titus explained that tank mixes make this a lot more complex. The combination of herbicide products, as many as nine different active ingredients, makes it very complex to figure out what cover crops are allowed. Manufacturers are trying to get good residual control. They can't have that and then allow grass or brassica cover crops because those plants are the same families as the weeds they are trying to control. Farmers accept many risks and will plant a five species mix and realize some species are not going to do well.
- Katy Green said prescribed mixes just would not work for their growers, they need legumes, etc.
- Jennings asked how many herbicides are actually involved. Hicks said Titus and Jemison picked the thirty-two. Titus said forage growers use about fifteen and vegetable growers use a lot more.
- Eckert asked, don't potato growers sell some of their cover crops for feed? Hobbs replied that some are used for feed and he asked whether this could be a low priority enforcement wise. Can we work and educate the growers on this? Jemison agreed with that in theory. He said it would be hard for Cooperative Extension to make recommendations. If we could adopt the policy it would make it easier for him to educate the grower about this issue. They are still trying to get growers to do cover crops.
- Hobbs said Cooperative Extension just hired an agronomist to help promote rotational crops for potatoes.

- Jemison realized that Randlett was not going to approve of the policy statement.
  - Eckert wanted to add language to make this a low priority and use enforcement discretion.
  - Hicks mentioned again that she would bring the issue to the EPA -SFIREG POM committee. Morrill supported that.
  - Jennings asked if the Board still wants the staff to send a letter to EPA on this topic. Morrill replied that, if a letter will help, we should do that. Morrill suggested a letter to EPA and Congress, Marge Kilkelly that works for Angus King and Representative Pingree's office. Jennings said the staff will draft the letter but does not like being in this situation.
  - Morrill asked the staff to make it a low priority for enforcement. Jennings stated that the enforcement staff must weigh the public consequence when determining an appropriate enforcement response. In this circumstance, there's actually a public benefit associated with this violation. That fact should give regulators cause to reconsider.
  - Stevenson asked, is the USDA ignoring this issue? Hicks said they are taking about it.
  - Morrill said we should not hold companies liable.
  - Jemison said we won't have a policy.
  - Jennings suggested the Board had reached a consensus on enforcement discretion.
  - Hobbs said the letter should not go to USDA because it might put the cost share money in jeopardy. He wanted the Board to let EPA inform USDA. Morrill suggested we only send the letter to the EPA.
  - Jennings wondered if working with SFIREG POM was good enough.
  - Hobbs said a letter to EPA from the Board and to the congressional delegation will be enough. Send no letter to USDA.
- **Consensus reached to have Hicks work with SFIREG-POM and to have Jennings draft a letter for Board Chair signature to EPA and the Congressional delegations.**

5. Board Discussion About Further Streamlining of the Agency Licensing and Other Processes

The staff has been working to develop a new, comprehensive technology solution to better manage the licensing processes and provide a self-service internet portal for licensees. Because programming/automating complex business rules is both difficult and expensive, one aspect of the development involves a methodical analysis of the current processes with a view toward identifying opportunities to simplify and/or improve those processes. The staff will provide a brief overview of the current progress and invite input on other potential areas to improve the agency processes.

Presentation By: Gary Fish  
 Manager of Pesticide Programs

Action Needed: Provide Guidance to the Staff

- Fish said we are working hard to develop a new licensing, compliance and enforcement portal. We need to find ways to simplify some processes to make the application coding less complicated and costly.
- Jennings said we have seen many situations that need to be changed. One example is the insurance affidavit. We are asking for applicator and public input to help us recognize where we can streamline our application, inquiry/complaint and product registration processes. Now is a good time for people to chime in.

- Eckert noted that our rules are very complicated. Jennings said some are hard to figure out. Like company affiliated licenses. It drives business rules that make the database application very complicated. We are trying to sidestep processes where we can but have to pay attention to the rules and statutes. Soon applicators will be able to pay for a license on-line, but it has to be checked to make sure all the requirements are satisfied. The Board doesn't have enough money to fully automate most processes. In the future we hope we can simplify so it can be fully automated.

- **Information only. Board was supportive of potential rule changes.**

6. Review of Letter to from Justin Nichols Recommending Changes to the Board's Posting Requirements

Justin Nichols and Gail Jones, landscapers, were working at a client's property in Falmouth for about 35 minutes when both of them started feeling ill. Shortly thereafter they discovered a sign indicating the lawn had been sprayed just prior to their arrival. Nichols called the telephone number listed on the sign but was unable to get any timely information about what had been applied at the site. Nichols subsequently wrote to the Board inspector with the goal of providing input and recommendations for the Board to consider.

Presentation By: Henry Jennings  
Director

Action Needed: Determine the appropriate response

- Jennings said we need to separate the question of compliance issues from the suggestions for changes to the rules. Nichols met with Inspector, Eugene Meserve. When Nichols began explaining his suggested procedural changes, Meserve suggested that Nichols convey those ideas to the Board. We usually put the letters on the agenda. We just did rulemaking on the posting issue. Nichols has a series of recommendations. Chapter 28 says you just have to list a phone number but it doesn't assign any duties beyond that. Is that an issue? Is there liability for the lawn care company?
- Eckert asked if he found someone to answer his toxicity questions. Hicks and Jennings said that he did. Connors also helped him find out what products were involved. However, when Meserve did the use inspection the products used were different from the list given on the phone.
- Eckert said they should be able to go to Poison Control. It's unacceptable that they could not get the info on what was used quickly.
- Granger asked, was the sign posted at the end of the driveway (street end)? Don't we have a requirement that it show out to the road? Randlett explained that the rule is very subjective. Connors said the sign was not at the sidewalk end of the driveway. It was not directly facing the street, but you could see it from the road.
- Granger asked whether the landscaper could see it as they came into the property. Connors said the landscapers came in from the road not by the driveway. So they missed the sign until they worked their way to the driveway.
- Granger asked whether the rule requires information on the product used to be included on the sign. Connors said, no, just "Caution Pesticide Application".
- Granger suggested that since it was hard to get the active ingredient information, should we require the EPA number on the sign? Connors said that would be more consistent with the other parts of Chapter 28.

- Morrill expressed concern that all companies are different. The number of applications that require posting is really high for some companies. The real problem was the phone number not being answered. The customer had the information.
- Granger said the information did not get to the person that needed it. How hard is it to just write the EPA numbers on the sign? Is that unreasonable to require? There is no fail-safe backup. EPA numbers are necessary if it is not unreasonable.
- Eckert said Nichols and his partner (landscapers with a pesticide license) had knowledge others would not have.
- Hicks said EPA numbers get you into all the databases. Morrill replied some EPA numbers are a lot of numbers, there will be high potential for a mistake. The common name will be better. Granger said the common name can be even longer. Hicks added the common name will not give you the solvent in the mix.
- Stevenson said sharpies are hard to read. Do lawn care companies mix products? Hicks replied three or more products are mixed sometimes.
- Stevenson stated recording products on the signs presents challenges. The big problem was no one answered the phone. Do we make a rule for one company that did not follow the rules?
- Eckert asked is it logical to require a local phone number? 800 numbers go to nowhere.
- Stevenson added could it be the Master Applicator number? Local numbers may go outside Maine too?
- Jennings said phone answering is sometimes contracted out. Many go to a call center instead.
- Stevenson noted that the posting rules have been in place for a long time. Jennings inquired whether this rises to the level of making rule changes?
- Jemison added we could do a spot check to see if you can reach someone in 5 minutes each time. He is worried that it probably would not be good. This brings home why we need to improve the signs. He sees problems with using EPA numbers, as a dyslexic.
- Morrill said the sign has to be rigid and waxed and a sharpie is necessary to write on it. The big issue is to make sure someone answers the phone and can respond to information requests.
- Jemison added that we need to make sure the signs are posted properly. Do we need to have more signs?
- Hicks said we may need to do an educational program on how the number should mean something. Morrill suggested the staff send an advisory out to companies about making sure the phone number is answered.
- Jennings wondered if the Board needs to set clearer expectations around the posting locations? We can encourage companies to make sure the phone is answered.
- Morrill said it is not in the spirit of the rule. We need to address the phone number issue. It is time to do a better job communicating issues.
- Hicks asked can they use stickers with EPA numbers. Stevenson replied that there are-already too many stickers.
- Jemison offered could we ask the 5 inspectors to spot check 4 or 5 signs and call the number and see if they get anyone as a survey and see how widespread the problem is? Can you get the information needed?
- Jennings replied the field staff could do this, but a question arises about who is entitled to pesticide application information? What if a pesticide opposition group started calling those numbers? Stevenson said those within 500 feet have the right to know.
- Connors asked whether it is worth documenting the posting practices at each site as well? Bring that in as part of the discussion.
- Jennings asked whether it is the Board's intent to require posting to alert people entering a treated site from the sidewalk or is it just where people normally enter the property?
- Morrill indicated there are instances where more signs are needed.

- Stevenson said the real issue is making sure the phone is answered. Shouldn't the landscaper have been more diligent in checking the surroundings before working on the property? Seems like the existing rule is adequate as long as the phone number is answered and the questions are answered.
- Connors added that the landscaper did talk to the homeowner. Stevenson asked whether the landscaper ask the property owner what was applied. Katy Green, MOFGA, said yes and the homeowner gave incorrect information.
- Stevenson replied the invoice should have been there. Jemison asked, doesn't the invoice go on the door?
- Jennings asked if they had consensus on the need to provide a phone number that works. Should we do a survey? What is the Board's expectation on the signs?
- Morrill said yes on sending a communication about the phone number.
- Eckert also said she likes the survey idea.
- Morrill was worried about the time it will take to get the information about what was applied. Eckert said it seems like it would not be that hard.
- Stevenson added that this is a posting for information. It is not an emergency number. Companies should be able to provide the information in a reasonable amount of time, but not for emergencies.
- Jennings indicated the staff would benefit from further guidance on what the Board wants for an interpretation of the rule where it is vague and performance based. We have one point of consensus so far.
- Eckert said we just surveyed land trusts why not survey on this? Morrill said he would support a survey if it is mailed out. The survey could ask, what number, where does it go, who answers the number? Connors felt it would be self-graded and it would not work that well.
- Granger asked whether the Board would be content if someone on the urban registry could not get the label and SDS? These options do not allow for providing the information that someone needs if they may have been exposed. Hicks said having the label or SDS also helps to rule out the pesticide if they have a copy of either one or both.
- Eckert added that workplaces have SDSs and employees can get that information quickly. The landscaper should have the right-to-know too.
- Stevenson said the homeowner has all the information on the invoice. Signs must be bigger to incorporate this information. How many people are being poisoned?
- Hicks asked how often people would work on a lawn and not know what was applied, get a reaction and never report it to us?
- Morrill observed the discussion could go on indefinitely. We agree to write a letter. Jennings said should the letter go out to everyone that has to post? Morrill and Stevenson said yes to all that have to post.
  - **Granger/Eckert Moved and seconded to require all applicators that need to post get a letter.**
  - **In Favor: Eckert, Morrill, and Stevenson**
  - **Against: Jemison and Granger**

7. Consideration of a Consent Agreement with the Town of Hartland

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 two unlicensed

municipal employees who applied sodium bisulfite to control weeds on municipal sidewalks and walkways.

Presentation By: Raymond Connors  
Manager of Compliance

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

- Connors summarized the issue. It involved an application of sodium bisulfate with a hand can to weeds on sidewalks.
- Hicks asked whether the product is registered. Connors indicated it was not. Jennings said it constitutes use of an unregistered product. Connors said it still is a pesticide because of their intent.
- Morrill asked how toxic is it? Hicks replied corrosive.
- Morrill inquired if it is also used in wine. Hicks replied it is used at a very low concentration as a food preservative. Here it was much more concentrated. The SDS says it could cause blindness, corneal damage, and digestive tract injury.

- **Jemison/Eckert: Moved and seconded to accept the agreement as presented**
- **In Favor: Unanimous.**

8. Draft Policy Regarding Interpretation of CMR 01-026, Chapter 10, Section 2 (P) (2), Definition of Property Open to Use by the Public as Regards Outdoor Applications

At the December, 2014 and the April and June, 2015 meetings the Board had discussions about the definition of “property open to use by the public,” as it applies to treating small areas within a large land holding. Section 2 (P) (2) of Chapter 10 provides the exemption, “where the public has not been permitted upon the property at any time within seven days of when the property received a pesticide application.” The discussion included information from a survey made of land trusts which use this exemption to apply pesticides to control invasive vegetation. The staff has drafted a policy based on that discussion.

Presentation By: Henry Jennings  
Director

Action Needed: Approve/Disapprove the Policy

- Jennings said the staff submitted a cleaner document as requested by Randlett. The staff re-wrote the policy consistent with the last meeting discussion.
- Granger asked, will this conflict with the rules at all? Fish replied it would not.

- **Stevenson/Eckert: Moved and seconded to approve as presented.**
- **In Favor: Unanimous.**

9. Other Old or New Business

a. Department of Agriculture, Conservation and Forestry Pollinator Protection Plan

- Jennings said the Department plan is in Board packet. The public may submit comments to Ellis Additon, Bureau Director.
- Hobbs commented that he was surprised there was no public process and asked whether there needs to be.

- Eckert asked what happens with it now. Will it just be filed, will it be shared? Jennings said it is posted on web, it was distributed to AGCOM and it will be revised over time.
- Eckert mentioned that an editorial in the KJ commented that a local town was spraying a park and it was not good for bee protection. She concluded that the Board must not have gotten a complaint. Should this message be sent out to municipalities? She thought it might have been Gardiner.
- Stevenson asked a question about CCD: what qualifies as CCD? Jennings said it must meet certain standards. Could be varroa mites, winter die-off, etc.

b. Other - None

10. Schedule of Future Meetings

a. August 27-28, October 9, November 13, and December 18, 2015, are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

a. August meeting:

- Who is planning to travel in the state van from Augusta?
- Who will be staying at the Machias River Inn?
- Make sure to sign up for sandwiches and drinks before leaving today.

b. Adjustments and/or Additional Dates?

11. Adjourn

- **Jemison/Granger: Moved and Seconded that the meeting adjourn at 11:01 AM**
- **In Favor: Unanimous**

SUMMARY OF COMMENTS—CHAPTERS 31, 34, 35—AUGUST 2015

PUBLIC HEARING, JULY 10, 2015

END OF COMMENT PERIOD, JULY 24, 2015

<b>TESTIMONY AND WRITTEN COMMENTS RECEIVED</b>			
<b>Person/Affiliation</b>	<b>Summary of Testimony</b>	<b>Type of Comment</b>	<b>Board Response</b>
Erik Grove	“Less is always more. You have my support.”	Written	Board agrees that simplification and consistency is preferable.
Robert P. Gagnon, MSAD#1	It is difficult to get credits within the six-year window; three years will be more difficult. (for commercial applicators, Chapter 31)	Written	The number of credits will also be reduced, so the number of credits per year stays the same. The Board reasoned the benefits of a standard license and certification period outweigh other considerations.
Gary Fish, BPC	The proposed change of the requirement for passing both the core and category exams from within one year to within five years should be amended to within three years to coincide with the new licensing period. (for commercial applicators, Chapter 31)	Written	The Board agreed that aligning the time frame for becoming certified with the standard certification period was logical. Consequently, the Board determined it was appropriate to adopt the change to the proposed amendments.



**BASIS STATEMENT FOR ADOPTION OF  
CMR 01-026, CHAPTER 31—CERTIFICATION AND LICENSING  
PROVISIONS/COMMERCIAL APPLICATORS**

**Basis Statement**

Four amendments to Chapter 31 were proposed by the Board:

1. Change the license period from two years to three; change the certification period from six years to three and align the licensing and certification periods.
2. Amend the description of Category 6B to clarify what types of applications are included.
3. Change the requirement for passing both the core and at least one category exam within one year of each other to within five years.
4. Clarify that certified or licensed wastewater or drinking water operators are exempt from licensing only while applying pesticides to the wastewater or drinking water and not while performing other duties such as weed management.

Three comments were received. One person was in favor of the changes. One person suggested that getting recertification credits in three years instead of six would be a challenge. The Board reasoned that since the number of credits per year did not change it should not cause a hardship. Furthermore, the Board contended that the shorter certification period aligned with the license period is less confusing, discourages procrastination and promotes participation in seminars where current issues are reviewed.

The third comment was from the Board staff suggesting that the time period requirement for passing both the core and at least one category exam be changed to three years to align with the licensing and certification period. The Board agreed that made sense because it simplifies record management for the staff and consistency with the certification is logical.

**Impact on Small Business**

In accordance with 5 MRSA §8052, sub-§5-A, a statement of the impact on small business has been prepared. Information is available upon request from the Maine Board of Pesticides Control office, State House Station #28, Augusta, Maine 04333-0028, telephone 207-287-2731.

# **Rulemaking Statement of Impact on Small Business**

## **5 MRSA §8052, sub-§5-A**

### **Agency**

Department of Agriculture, Conservation and Forestry—Maine Board of Pesticides Control

### **Chapter Number and Title of Rule**

CMR 01-026, Chapter 31—Certification and Licensing Provisions/Commercial Applicators

### **Identification of the Types and an Estimate of the Number of the Small Businesses Subject to the Proposed Rule**

Currently there are about 1,800 licensed commercial pesticide applicators in Maine. They will all be affected by this amendment:

1. recertification credits will now have to be accrued during a three-year period rather than a six-year period, however the actual number of credits per year remains the same, so there is no added cost; and
2. license periods will change from two to three years, reducing the paperwork. The cost per year remains the same.

### **Projected Reporting, Record Keeping, and Other Administrative Costs Required for Compliance with the Proposed Rule, including the Type of Professional Skills Necessary for Preparation of the Report or Record**

None

### **Brief Statement of the Probable Impact on Affected Small Businesses**

The amendments will result in a slight decrease in paperwork.

### **Description of Any Less Intrusive or Less Costly, Reasonable Alternative Methods of Achieving the Purposes of the Proposed Rule**

Since there are no anticipated increased burdens on small businesses, there are no less intrusive or less costly alternatives.

**01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**

**026 BOARD OF PESTICIDES CONTROL**

**Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS**

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**SUMMARY:** These regulations describe the requirements for certification and licensing of commercial applicators.

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**1. Individual Certification and Company/Agency Licensing Requirements**

- A. Any commercial applicator must be either:
  - I. licensed as a commercial applicator/master; or
  - II. licensed as a commercial applicator/operator; or
  - III. supervised on-site by either a licensed commercial applicator/master or a commercial applicator/operator who is physically present on the property of the client the entire time it takes to complete an application conducted by an unlicensed applicator. This supervision must include visual and voice contact. Visual contact must be continuous except when topography obstructs visual observation for less than five minutes. Video contact does not constitute visual observation. The voice contact requirement may be satisfied by real time radio or telephone contact. In lawn care and other situations where both the licensed and unlicensed applicator are operating off the same application equipment, the licensed applicator may move to an adjoining property on the same side of the street and start another application so long as he or she is able to maintain continuous visual and voice contact with the unlicensed applicator.
- B. All commercial applicator licenses shall be affiliated with a company/agency and shall terminate when the employee leaves the employment of that company or agency.
- C. Individuals certified as commercial applicators are eligible to license with one or more companies/agencies upon submission of the application and fee as described in Section 6 of this regulation. The individual's certification remains in force for the duration of the certification period as described in Section 5 of this regulation.
- D. Each branch office of any company, agency, organization or self-employed individual ("employing entity") required to have personnel licensed commercially under state pesticide law shall have in its employment at least one master applicator. This Master must be licensed in all categories which the branch office of the company or agency performs applications and any Operators must also be licensed in the categories in which they perform or supervise pesticide applications. This master applicator must actively supervise persons applying pesticides within such employing entity and have the ability

to be on site to assist such persons within six (6) hours driving time. Whenever an out-of-state employing entity is conducting a major application project they must have a master applicator within the state.

**E. Exemptions**

- I. Employing entities ~~only~~ performing only post harvest treatments to agricultural commodities are exempt from master licensing requirements.
- II. Persons applying pesticides to household pets and other non agricultural domestic animals are exempt from commercial applicator licensing.
- III. Swimming pool and spa operators that are certified by the National Swimming Pool Foundation, National Spa and Pool Institute or other organization approved by the Board are exempt from commercial applicator licensing. However, these persons must still comply with all provisions of C.M.R. 10-144, Chapter 202 – Rules Relating to Public Swimming Pools and Spas Administered by the Maine Bureau of Health.
- IV. Certified or licensed Wastewater or Drinking Water Operators applying registered disinfectants to waste or drinking water as part of their employment.
- V. Adults applying repellents to children with the consent of parents/guardians.
- VI. Persons installing antimicrobial metal hardware.

**2. Categories of Commercial Applicators**

- A. All commercial applicators shall be categorized according to the type of work performed as outlined below:
  - I. **Agricultural Animal and Plant Pest Control**
    - a. **Agricultural Animal** - This subcategory includes commercial applicators using or supervising the use of pesticides on animals and to places on or in which animals are confined. Doctors of Veterinary Medicine engaged in the business of applying pesticides for hire as pesticide applicators are included in this subcategory; however, those persons applying pesticides as drugs or medication during the course of their normal practice are not included.
    - b. **Agricultural Plant** - This subcategory includes commercial applicators using or supervising the use of pesticides in the production of crops including blueberries, orchard fruit, potatoes, vegetables, forage, grain and industrial or non-food crops.

**Option I - Limited Commercial Blueberry** - This option includes commercial applicators using or supervising the use of pesticides in the production of blueberries only.

**Option II - Chemigation** - This option includes commercial applicators using or supervising the use of pesticides applied through irrigation equipment in the production of crops.

**Option III - Agricultural Fumigation** - This option includes commercial applicators using or supervising the use of fumigant pesticides in the production of crops.

**Option IV - Post Harvest Treatment** - This option includes commercial applicators using or supervising the use of pesticides in the post harvest treatment of food crops.

## II. **Forest Pest Control**

This category includes commercial applicators using or supervising the use of pesticides in forests, forest nurseries, Christmas trees, and forest seed producing areas.

## III. **Ornamental and Turf Pest Control**

- a. **Outdoor Ornamentals** - This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of outdoor ornamental trees, shrubs and flowers.
- b. **Turf** - This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of turf, such as at turf farms, golf courses, parks, cemeteries, athletic fields and lawns.
- c. **Indoor Ornamentals** - This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of live plants in shopping malls, businesses, residences and institutions.

## IV. **Seed Treatment**

This category includes commercial applicators using or supervising the use of pesticides on seeds.

## V. **Aquatic Pest Control**

- a. **General Aquatic** - This subcategory includes commercial applicators using or supervising the use of pesticides applied directly to surface water, including but not limited to outdoor application to public drinking

water supplies, golf course ponds, rivers, streams and wetlands. Excluding applicators engaged in public health related activities included in categories VII(e) and VIII below.

- b. **Sewer Root Control** - This subcategory includes commercial applicators using or supervising the use of pesticides applied to sewers to control root growth in sewer pipes.

## VI. ~~Right-Of-Way~~ **Vegetation Management**

- a. **Rights-of-Way Vegetation Management** - This subcategory includes commercial applicators using or supervising the use of pesticides in the management of vegetation on utility, roadside and railroad rights-of-way.
- b. **~~Industrial/Commercial/Municipal~~ General Vegetation Management** - This subcategory includes commercial applicators using or supervising the use of pesticides in the management of vegetation (including invasive plants) on sites not included in category VI a ~~industrial, commercial, municipal or publicly owned areas~~ including, but not limited to, municipal and other publicly owned properties, industrial or commercial plants and buildings, lumber yards, airports, tank farms, storage areas, parking lots, ~~and~~ sidewalks, and trails.

## VII. **Industrial, Institutional, Structural and Health Related Pest Control**

- a. **General** - This subcategory includes commercial applicators using or supervising the use of pesticides in, on or around human dwellings, office buildings, institutions such as schools and hospitals, stores, restaurants, industrial establishments (other than in Category 6) including factories, warehouses, food processing plants, food or feed transportation facilities and other structures, vehicles, railroad cars, ships, aircraft and adjacent areas; and for the protection of stored, processed or manufactured products. This subcategory also includes commercial applicators using or supervising the use of pesticides to control rodents on refuse areas and to control other pests, including but not limited to birds and mammals.
- b. **Fumigation** - This subcategory includes commercial applicators using or supervising the use of fumigants or fumigation techniques in any type of structure or transportation device.
- c. **Disinfectant and Biocide Treatments** - This subcategory includes commercial applicators using or supervising the use of pesticides to treat water in manufacturing, swimming pools, spas, industrial cooling towers, public drinking water treatment plants, sewers and air conditioning systems.
- d. **Wood Preserving** - This subcategory includes commercial applicators using or supervising the use of restricted use pesticides to treat lumber,

poles, railroad ties and other types of wooden structures including bridges, shops and homes. It also includes commercial applicators applying general use pesticides for remedial treatment to utility poles.

- e. **Biting Fly & other Arthropod Vectors** - This subcategory includes commercial applicators and non-public health governmental officials using or supervising the use of pesticides in management and control of biting flies & other arthropod vectors of public health and public nuisance importance including, but not limited to, ticks, mosquitoes, black flies, midges, and members of the horsefly family.
- f. **Termite Pests** - This subcategory includes commercial applicators using or supervising the use of pesticides to control termites.

#### VIII. **Public Health Pest Control**

- a. **Biting Fly Pests** - This subcategory includes governmental officials using pesticides in management and control of potential disease vectors or other pests having medical and public health importance including, but not limited to, mosquitoes, black flies, midges, and members of the horsefly family.
- b. **Other Pests** - This subcategory includes governmental officials using pesticides in programs for controlling other pests of concern to public health including, but not limited to, ticks and birds and mammal vectors of human disease.

#### IX. **Regulatory Pest Control**

This category includes governmental employees using pesticides in the control of pests regulated by the U.S. Animal and Plant Health Inspection Service or some other governmental agency.

#### X. **Demonstration and Research Pest Control**

This category includes all individuals who (1) demonstrate to the public the proper use and techniques of application of pesticides or supervise such demonstration, (2) conduct field research with pesticides, and in doing so, use or supervise the use of pesticides. Individuals who conduct only laboratory-type research are not included. Applicants seeking certification in this category must also become certified in whatever category/subcategory they plan to make applications under; e.g., Categories I - IX.

## XI. **Aerial Pest Control**

This category includes commercial applicators, including pilots and co-pilots, applying or supervising the application of pesticides by means of any aircraft. Applicants seeking certification in this category must also become certified in whatever category/subcategory they plan to make applications under; e.g., Categories I - IX.

### 3. **Competency Standards for Certification of Commercial Applicators**

- A. Applicants seeking commercial certification must establish competency in the general principles of safe pest control by demonstrating knowledge of basic subjects including, but not limited to, pesticide labeling, safety, environmental concerns, pest organisms, pesticides, equipment, application techniques and applicable laws and regulations. (Core Exam).
- B. Applicants seeking commercial certification must demonstrate competency in each applicable category or subcategory. (Category Exam). Competency in the applicable category or subcategory shall be established as follows:

#### I. **Agricultural Animal and Plant Pest Control**

- a. **Agricultural Animals.** Applicants seeking certification in the subcategory of Animal Pest Control as described in Section 2(A)(I)(a) must demonstrate knowledge of animals, their associated pests, and methods of pest control. Areas of practical knowledge shall include specific toxicity, residue potential, relative hazards of different formulations, application techniques, and hazards associated with age of animals, stress, and extent of treatment.
- b. **Agricultural Plant.** Applicants seeking certification in the subcategory of Plant Pest Control as described in Section 2(A)(I)(b) Options I - IV must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using pesticides. Areas of such practical knowledge shall include soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, potential for environmental contamination, non-target injury, and community problems related to pesticide use in certain areas. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

#### II. **Forest Pest Control**

Applicants seeking certification in the category of Forest Pest control as described in Section 2(A)(II) must demonstrate practical knowledge of forest vegetation management, forest tree biology and associated pests. Such required knowledge shall include population dynamics of pest species, pesticide-organism interactions, integration of pesticide use with other pest control methods, environmental contamination, pesticide effects on non-target organisms, and use of specialized equipment. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

### III. **Ornamental and Turf Pest Control**

- a. **Outdoor Ornamentals.** Applicants seeking certification in the Outdoor Ornamental subcategory as defined in Section 2(A)(III)(a) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of trees, shrubs and floral plantings. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Turf.** Applicants seeking certification in the Turf subcategory as described in Section 2(A)(III)(b) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of turf. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- c. **Indoor Ornamentals.** Applicants seeking certification in the Indoor Ornamental subcategory described in Section 2(A)(III)(c) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of indoor ornamental plantings. Such knowledge shall include pest recognition, proper pesticide selection, undue pesticide persistence, and application methods with particular reference to techniques used in proximity to human presence.

#### IV. **Seed Treatment**

Applicants seeking certification in the category of Seed Treatment as described in Section 2(A)(IV) must demonstrate practical knowledge of seed types and problems requiring chemical treatment. Such knowledge shall include seed coloring agents, carriers and binders which may affect germination, hazards associated with handling, sorting, and mixing in the treatment process, hazards of introduction of treated seed into food and feed channels, and proper disposal of unused treated seeds.

#### V. **Aquatic Pest Control**

- a. **General Aquatic** - Applicants seeking certification in the subcategory of General Aquatic as described in Section 2(A)(V)(a) must demonstrate practical knowledge of proper methods of aquatic pesticide application, application to limited area, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include basic factors contributing to the development of nuisance aquatic plant growth such as algal blooms, understanding of various water use situations and potential downstream effects from pesticide use, and potential effects of various aquatic pesticides on plants, fish, birds, insects and other organisms associated with the aquatic environment. Also required shall be an understanding of the Department of Environmental Protection laws and regulations pertaining to aquatic discharges and aquatic weed control and a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Sewer Root Control** - Applicants seeking certification in the subcategory of Sewer Root Control as described in Section 2(A)(V)(b) must demonstrate practical knowledge of proper methods of sewer root control pesticide application, application to pipes, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include potential effects on water treatment plants, movement of pesticides into off target pipes or buildings and the hazards of sewer gases.

#### VI. **~~Right-of-Way~~ Vegetation Management**

Applicants seeking certification in the subcategories under ~~Right-of-Way~~ Vegetation Management as described in Section 2(A)(VI) (a-b) must demonstrate practical knowledge of the impact of ~~right-of-way~~ pesticide use on a wide variety of environments. Such knowledge shall include an ability to recognize target organisms and circumstances specific to the subcategory, awareness of problems of runoff, root pickup and aesthetic considerations associated with excessive foliage destruction and "brown-out", and an understanding of the mode of action of ~~right-of-way~~ herbicides, and reasons for

the choice of particular chemicals for particular problems, importance of the assessment of potential impact of ~~right-of-way~~ spraying on adjacent public and private properties and activities, and effects of ~~right-of-way~~ spraying on fish and wildlife species and their habitat. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

## VII. **Industrial, Institutional, Structural and Health Related Pest**

- a. **General.** Applicants seeking certification in the subcategory of General Pest Control as described in Section 2(A)(VII)(a) must demonstrate a practical knowledge of a wide variety of pests and methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.
- b. **Fumigation.** Applicants seeking certification in the subcategory Fumigation as described in Section 2(A)(VII)(b) must demonstrate a practical knowledge of a wide variety of pests and fumigation methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, fumigant formulations, methods to avoid contamination of food and damage to structures and furnishings, and avoidance of risks to employees and customers.
- c. **Disinfectant and Biocide Treatments.** Applicants seeking certification in the Disinfectant and Biocide Treatments subcategory described in Section 2(A)(VII)(c) must demonstrate practical knowledge of water organisms and their life cycles, drinking water treatment plant, cooling water and pool or spa system designs, labels and hazards of disinfectants and biocides and proper application techniques to assure adequate control while minimizing exposure to humans and the environment.
- d. **Wood Preserving.** Applicants seeking certification in the Wood Preserving Subcategory described in Section 2(A)(VII)(d) must demonstrate practical knowledge in wood destroying organisms and their life cycles, nonchemical control methods, pesticides appropriate for wood preservation, hazards associated with their use, proper handling of the finished product, proper disposal of waste preservatives, and proper application techniques to assure adequate control while minimizing exposure to humans, livestock and the environment.
- e. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest control as described in Section 2(A)(VII)(e) must demonstrate a practical knowledge of the species involved, their

potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

- f. **Termite Pests.** Applicants seeking certification in this subcategory must demonstrate a practical knowledge of Termite pests and methods for their control. Such knowledge shall include identification of termites and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.

#### VIII. **Public Health Pest Control**

- a. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest Control as described in Section 2(A)(VIII)(a) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Other Pests.** Applicants seeking certification in the subcategory of Other Pest Control as described in Section 2(A)(VIII)(b) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

#### IX. **Regulatory Pest Control**

Applicants seeking certification in the category of Regulatory Pest Control as described in Section 2(A)(IX) must demonstrate practical knowledge of regulated pests and applicable laws relating to quarantine and other regulations of pests. Such knowledge shall also include environmental impact of pesticide use in eradication and suppression programs, and factors influencing introduction, spread, and population dynamics of relevant pests. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

**X. Demonstration and Research Pest Control**

Applicants seeking certification in the category of Demonstration and Research Pest Control as described in Section 2(A)(X) must demonstrate practical knowledge in the broad spectrum of activities involved in advising other applicators and the public as to the safe and effective use of pesticides. Persons involved specifically in demonstration activities will be required to demonstrate knowledge of pesticide-organism interactions, the importance of integrating chemical and non-chemical control methods, and a grasp of the pests, life cycles and problems appropriate to the particular demonstration situation. Field researchers will be required to demonstrate general knowledge of pesticides and pesticide safety, as well as a familiarity with the specific standards of this Section which apply to their particular areas of experimentation. All individuals certified in this category must also be certified in one or more of the previous categories or subcategories which represent at least 80% of their practice. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

**XI. Aerial Pest Control**

Applicants seeking certification in the category of Aerial Pest Control as described in Section 2(A)(XI) must demonstrate at least a practical knowledge of problems which are of special significance in aerial application of pesticides, including chemical dispersal equipment, tank, pump and plumbing arrangements; nozzle selection and location; ultra-low volume systems; aircraft calibration; field flight patterns; droplet size considerations; flagging methods; and loading procedures. Applicants must also demonstrate competency in the specific category or subcategory in which applications will be made, as described in paragraphs I, II, VI and VIII herein. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

**4. Competency Standards for Certification of Commercial Applicator/Master**

- A. **Regulations Exam.** An applicant seeking certification as a commercial applicator/master must successfully complete a closed book exam on the appropriate chapters of the Board's regulations. The passing grade shall be 80%. An applicant must successfully complete the regulations exam before being allowed to proceed to the master exam. The staff may waive the requirements for the closed book regulation exam if it determines that a pest management emergency exists necessitating the issuance of a nonresident license pursuant to Section 6 B of this chapter, provided that the staff verbally reviews the pertinent regulations with the applicant prior to issuing a nonresident license.
- B. **Master Exam.** An applicant seeking certification as a commercial applicator/master must also demonstrate practical knowledge in ecological and environmental concerns, pesticide container and rinsate disposal, spill and accident mitigation, pesticide storage and on site security, employee safety and training, potential chronic effects of exposure to pesticides, pesticide registration and special review, the potential for groundwater contamination, principles of pesticide drift and measures to reduce drift, protection of public health, minimizing public exposure and use of non pesticide control methods. In addition, applicant must demonstrate the ability to interact with a concerned public.

## 5. Certification Procedures for Commercial Applicators

### A. Initial Certification

- I. **Application for Exams.** ~~All persons desiring to take exams must request an application from the Board's office and submit all required information and fees.~~ Individuals applying to take exams must submit a completed application and associated fees. All fees are waived for governmental employees.
- a. Information shall include name, Social security number, home address, company address, name and telephone number of supervisor and categories for which certification is desired.
- b. A non-refundable fee of \$10.00 for each core, category or subcategory exam shall accompany the application.
- c. Study materials for other than the regulations exam are available through the University of Maine Cooperative Extension Pest Management Office for a fee.
- d. A non-refundable fee of \$50.00 for the regulations and master exams shall accompany the application for Master exams. Study material for the regulations exam will be sent to the applicant upon receipt of their application and the required fees.
- II. **Appointment for Exams**
- a. ~~Upon receipt of an application the staff shall schedule an exam date and notify the applicant. If the scheduled date is not convenient for the~~

~~applicant, it shall be the responsibility of the applicant to contact the Board's office to arrange a more convenient time to take the exams. Exams will be scheduled by Board staff. It is the responsibility of the applicant to reschedule if necessary.~~

- b. All exam fees shall be forfeited if an applicant fails to notify the Board that he/she cannot sit for the exams on the scheduled date at least 24 hours in advance of the scheduled exam. Applicants who cancel their exam appointment two times in a row shall also forfeit their exam fees. Re-application shall require an additional \$15.00 fee.
- c. Exams will be available year-round on an appointment basis at the Board's office in Augusta.
- d. Exams may also be offered at other locations designated by the Board staff. Appointments for these exams should be arranged by application with the Board's office in Augusta.

### III. Exams

- a. Applicants in all areas except category I(b)IV, Post Harvest Treatment shall take a closed book core exam plus a closed book category technical exam on each applicable category or subcategory for which they anticipate making pesticide applications.
- b. In addition to the exams described above in sections (a), applicants for commercial applicator/master certification in all areas except category I(b)IV, Post Harvest Treatment must complete a closed book written regulations exam as well as a master exam. Applicants for commercial applicator/master must successfully complete the core and at least one category exam or the combined exam before being eligible to take the master exams. Applicants must also successfully complete the regulations exam before being allowed to commence on the master exam.
- c. Applicants in subcategory I(b)IV Post Harvest Treatment shall take one closed book exam which combines the core exam and the category exam.

### IV. Examination Procedures. All applicants shall comply with these rules or forfeit their opportunity to complete the exams at a specified appointment.

- a. Applicants should be present and ready to take the exams at the appointed time.
- b. Applicants shall not talk during the examination period.
- c. Applicants shall not be allowed to bring any books, papers, cellular telephones, calculators or electronically stored data into the examining room. Pencils and work sheets will be provided and all papers shall be collected at the end of the period.

- d. Applicants shall not make notes of the exams and shall not leave the table during an exam unless authorized by the staff.

V. **Qualification Requirements.** An applicant must achieve a passing score of 80 percent on each exam.

- a. An applicant who fails the core exam must re-apply and pay all required fees and may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must reapply and pay all required fees and wait 6 more days before retaking again.
- b. An applicant who fails a category exam must re-apply and pay all required fees and may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must reapply and pay all required fees and wait 6 more days before retaking again.
- c. An applicant who passes the core and one category exam shall be considered eligible for operator level licensing in that particular category so long as that person will be working under the supervision of a Master applicator. If at a later date the applicant wishes to add another category, only the appropriate category exam shall be required.
- d. An applicant who fails a master exam must re-apply and pay all required fees and may not retake the examination prior to 6 days after the date of such failed examination.
- e. Any applicant must pass both the core and at least one category exam by December 31 of the third year from the date on which the first exam was passed ~~within 12 months before qualifying for certification.~~
- f. Any applicant who violates any of the rules pertaining to examinations shall wait a minimum of 60 days before retaking.

VI. **Expiration.** Certification under this Section will expire on December 31<sup>st</sup> of the ~~sixth~~ third year after the date of successful completion of ~~the~~ required exams and on December 31<sup>st</sup> of every ~~sixth~~ third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.

VII. An applicant's original certification period shall not be extended due to the applicant qualifying for another category or upgrading to the master level.

B. **Recertification of Applicators**

- I. Persons with current valid certification may renew that certification by either providing documentation from a substantially equivalent professional certification program approved by the board or by accumulating recertification

credits during the certification period described in Section 5(A)VI according to the following schedule:

- a. **Master level** - ~~18~~ 9 credit hours, including at least ~~3~~ 2 in a category or subcategory they are licensed for and 1 credit hour in environmental science, ecology or toxicology.
- b. **Operator level** - ~~12~~ 6 credit hours, including at least ~~3~~ 2 in a category or subcategory they are licensed for and 1 credit hour in environmental science, ecology or toxicology.

II. Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.

- a. Board staff will review program agendas and monitor programs as time permits.

III. Credit will be allowed for topics including, but not limited to:

- a. Applicable laws and regulations.
- b. Environmental hazards.
- c. Calibration and new application techniques.
- d. Label review.
- e. Applicator safety.
- f. Storage and disposal.
- g. Pest identification and control.
- h. Integrated pest management.

IV. Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting with details of the agenda. Board staff will review program agendas and assign credit values.

- a. One credit will be assigned for each one hour of presentation on appropriate topics.
- b. An individual who conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each one hour of presentation on appropriate topics.
- c. An individual who organizes a meeting shall be required to maintain a sign-up sheet and supervise the signing of the sheet by all applicators

attending the program. That individual shall submit the sign-up sheet to the Board at the same time the verification attendance forms are collected and submitted to the Board.

- V. For in state programs, ~~each participant will complete a form to verify attendance at each program for which credit is allowed at the site~~ applicants must submit verification of attendance at approved programs to the Board. For out of state programs, applicators must ~~notify the Board about attendance and send a registration receipt or other proof of attendance and a copy of the agenda or other description of the presentations attended. The agenda must show the length of each presentation and describe what was covered.~~ submit verification of attendance; they may also be asked to provide documentation such as an agenda or descriptions of the presentations attended.
- VI. A person who fails to accumulate the necessary credits during their first ~~six~~ three year certification period will have to retake and pass all exam(s) required for initial certification. If a person fails to accumulate the necessary credits again that person must retake and pass all exam(s) required for initial certification and within one year thereafter, obtain the balance of the recertification credits which that person failed to accumulate during the previous certification period. If that person does not obtain the balance of credits needed, the Board will not renew their license until the make- up credits are accrued.
- VII. ~~Attendance verification forms must verify attendance by the applicator of the entire approved program(s) for which recertification credit is sought, and must be completed, signed and submitted to the program organizer or Board representative by the applicator seeking recertification credit(s).~~ Applicants must attend the entire approved program(s) for which recertification credit is sought. No other person may complete or sign ~~the~~ a verification form on ~~the~~ another applicator's behalf. Any form that is completed or signed by a person other than the applicator will be deemed a fraudulent report and will not be approved by the Board for recertification credit(s). Any credit(s) approved by the Board pursuant to an attendance verification form which is subsequently determined by the Board to have been completed or signed by a person other than the applicator shall be void and may not be counted towards the applicator's recertification requirements; and any recertification issued on the basis of such credits shall be void.

## 6. Licensing

- A. All Commercial Applicators required to be certified under this chapter and state pesticide law shall be licensed before using or supervising the use of pesticides as described in Section 1(A).
- B. **Nonresident licenses.** When the staff determines that a pest management emergency exists which necessitates the use of aerial application and for which there are not sufficient qualified Maine licensees, it may issue a license without examination to nonresidents who are licensed or certified by another state or the Federal Government

substantially in accordance with the provisions of this chapter. Nonresident licenses issued pursuant to this section are effective until December 31 of the year in which they are issued.

- C. **Application.** Application for a commercial applicator license shall be on forms provided by the Board.
- I. The completed application must include the name of the company or agency employing the applicant.
  - II. Unless the applicant is the owner of a company, the completed application must be signed by both the applicant and that person's supervisor to verify the applicant is an employee of the company/agency.
- D. **Fee.** At the time of application, the applicant must tender the appropriate fee as follows:
- I. For a commercial applicator license - ~~\$70.00~~ \$105.00 per person.
  - II. For replacement, upgrade to master or to add categories \$5.00.
- E. Commercial applicators who apply pesticides for hire (custom applicators) and operate a company that is incorporated or which employs more than one applicator (licensed or unlicensed) must comply with Chapter 35, Certification & Licensing Provisions/Spray Contracting Firms which requires an additional Spray Contracting Firm License.
- F. **Insurance.** Commercial applicators who spray for hire (custom applicators) shall be required to have liability insurance in force at any time they make a pesticide application.
- I. Applicators shall submit a completed and signed form provided by the Board at the time they apply for their license which attests that they will have the required amounts of insurance coverage in effect when they make pesticide treatments. The information submitted on the form must be true and correct.
  - II. Insurance coverage must meet or exceed the following minimum levels of liability:
    - a. **Ground applicators**

Public liability	\$100,000 each person \$300,000 each occurrence
Property damage	\$100,000 each occurrence
    - b. **Aircraft applicators**

Public liability	\$100,000 each person \$300,000 each occurrence
Property damage	\$100,000 each occurrence

G. **Reports.** Annual Summary Reports described in Chapter 50, Section 2(A) must be submitted for each calendar year by January 31 of the following year. In the event a required report is not received by the due date, the person's license is temporarily suspended until the proper report is received or until a decision is rendered at a formal hearing as described in 22 MRSA §1471-D (7).

H. **Expiration**

I. All licenses will expire at the end of the ~~second calendar year after issuance~~ certification period as determined in Section 5(A)VI or when an individual licensee terminates employment with the company/agency with which the individual's license is affiliated.

II. The licensee or a company/agency representative shall notify the Board in writing within 10 days after a licensee is terminated from employment.

III. Also, all licenses within a company/agency are suspended if the licensed Master is terminated from employment or dies.

I. **Decision.** Within 60 days of receipt of application by the Board, unless the applicant agrees to a longer period of time, the Director shall issue, renew or deny the license. The Director's decision shall be considered final agency action for purposes of 5 M.R.S.A. §11001 *et seq.*

7. **Transition**

For the purposes of converting from two year licenses and six year certification periods to three year licenses with concurrent three year certification periods, and to ensure that license expirations are evenly distributed across any three year period. During the transition period, the Board may initially issue one, two, or three year licenses with corresponding certification periods. Licensees must obtain a proportional number of recertification credits per year during the transition period. License fees will also be prorated in accordance with the length of the license term. The length of the initial license terms will be assigned by the Board when a license is renewed, based on applicant's last name.

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STATUTORY AUTHORITY: 22 M.R.S.A., Section 1471-D

EFFECTIVE DATE:

January 1, 1983 (filed with Secretary of State August 13, 1982)

AMENDED:

December 29, 1982

January 1, 1984

January 1, 1984 - Section 7

May 20, 1984 - Section 6

May 13, 1985 - Section 5

Emergency amendment effective April 18, 1986 - Section 6

August 3, 1986 - Section 6

November 30, 1986 - Section 3

May 23, 1987 - Section 1

April 27, 1988

April 29, 1990

January 1, 1996 (adopted by Board October 7, 1994 - see Section 8 for transition dates)

October 2, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):

March 1, 1997

AMENDED:

December 28, 1999 -- also converted to MS Word

March 5, 2003

July 3, 2005 – filing 2005-267

March 4, 2007 – filing 2007-69

July 2, 2009 – filing 2009-318 (EMERGENCY, later reverted to pre-emergency status)

CORRECTIONS:

February, 2014 – agency names, formatting

AMENDED:

December 9, 2014 – filing 2014-280



**BASIS STATEMENT FOR ADOPTION OF  
CMR 01-026, CHAPTER 34—CERTIFICATION AND LICENSING  
PROVISIONS/PESTICIDE DEALERS**

**Basis Statement**

Two amendments to Chapter 34 were proposed by the Board:

1. Shorten the time period a person must wait before re-taking an exam they have failed. This change would align Chapter 34 with other Board licensing rules.
2. Change the license period from one year to three; change the certification period from five years to three and align the licensing and certification periods to be consistent with other Board licenses.

One comment was received that was not specific to any particular chapter but was supportive of the proposed amendments. Consequently, the Board concluded that the proposed amendments better serve the public interest and determined it was appropriate to adopt the amendment as proposed.

**Impact on Small Business**

In accordance with 5 MRSA §8052, sub-§5-A, a statement of the impact on small business has been prepared. Information is available upon request from the Maine Board of Pesticides Control office, State House Station #28, Augusta, Maine 04333-0028, telephone 207-287-2731.

# **Rulemaking Statement of Impact on Small Business 5 MRSA §8052, sub-§5-A**

## **Agency**

Department of Agriculture, Conservation and Forestry—Maine Board of Pesticides Control

## **Chapter Number and Title of Rule**

Chapter 34—Certification and Licensing Provisions/Pesticide Dealers

## **Identification of the Types and an Estimate of the Number of the Small Businesses Subject to the Proposed Rule**

Currently there are about sixty licensed Restricted Use Pesticide Dealers in Maine. They will all be affected in that the license period will increase from one year to three, and the time frame in which they need to receive recertification credits decreases from five years to three years. The cost per year remains the same.

## **Projected Reporting, Record Keeping, and Other Administrative Costs Required for Compliance with the Proposed Rule, including the Type of Professional Skills Necessary for Preparation of the Report or Record**

None

## **Brief Statement of the Probable Impact on Affected Small Businesses**

The amendments will result in a slight decrease in paperwork.

## **Description of Any Less Intrusive or Less Costly, Reasonable Alternative Methods of Achieving the Purposes of the Proposed Rule**

Since there are no anticipated increased burdens on small businesses, there are no less intrusive or less costly alternatives.

**01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**

**026 BOARD OF PESTICIDES CONTROL**

**Chapter 34: CERTIFICATION AND LICENSING PROVISIONS/PESTICIDE DEALERS**

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**SUMMARY:** These regulations describe the requirements for certification and licensing of pesticide dealers.

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### **Section 1. Competency Standards for Certification**

No person shall be certified as a pesticide dealer unless that person has demonstrated knowledge of pesticide classifications, formulations, labeling, safety, storage and applicable laws and regulations. Also required shall be knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

### **Section 2. Certification Procedures for Pesticide Dealers**

#### **A. Initial Certification**

1. **Application for Exam.** All persons desiring to take the exam must request an application from the Board's office and submit all required information and fees.
  - a. Information shall include name, home address, Social Security number, name and telephone number of company and company address.
  - b. A fee of \$10.00 for the exam shall accompany the application.
2. **Appointment for Exam**
  - a. ~~Upon receipt of an application the staff shall schedule an exam date and notify the applicant. If the scheduled date is not convenient for the applicant, it shall be the responsibility of the applicant to contact the Board's office to arrange a more convenient time to take the exams. Exams will be scheduled by Board staff. It is the responsibility of the applicant to reschedule if necessary.~~
  - b. All exam fees shall be forfeited if an applicant fails to notify the Board that he/she cannot sit for the exam on the scheduled date at least 24 hours in advance of the scheduled exam. Re-application shall require an additional \$15.00 fee.

- c. Exams will be available year-round on an appointment basis at the Board's office in Augusta.
  - d. Exams may also be offered at other locations designated by the Board staff. Appointments for these exams should be arranged by application with the Board's office in Augusta.
3. Study materials for the dealer exam are available through the University of Maine Cooperative Extension Pest Management Office for a fee.
  4. **Examinations.** All applicants shall complete the closed book dealer exam covering subjects specified in Section 1.
  5. **Examination Procedure.** All applicants shall comply with these rules or forfeit their opportunity to complete the exam at a specified appointment.
    - a. Applicants should be present and ready to take the exam at the appointed time.
    - b. Applicants shall not talk during the examination period.
    - c. Applicants shall not be allowed to bring any books or papers into the examining room. Pencils and work sheets will be provided and all papers shall be collected at the end of the period.
    - d. Applicants shall not make notes of the exam and shall not leave the table during an exam unless authorized by the staff.
  6. **Qualification.** An applicant desiring to qualify for dealer certification must achieve a passing score of 80 percent.
    - a. An applicant who fails the exam may not re-apply to take the examination prior to ~~14~~ 6 days after the date of such examination. If an applicant fails again the applicant must wait ~~30~~ 6 days before retesting.
    - b. Any applicant who violates any of the rules pertaining to examinations shall wait a minimum of 60 days before retesting.
  7. **Expiration.** Certification under this section will expire on December 31st of the ~~fifth~~ third year after the date of successful completion of the exam and on December 31st of every ~~fifth~~ third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.

## B. **Recertification**

1. Any person with current valid certification may renew that certification by accumulating ~~15~~ 9 recertification credits during the certification period described in Section 2(A)7.

2. Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.
3. Credit will be allowed for topics including but not limited to:
  - a. Applicable laws and regulations,
  - b. Label review,
  - c. Pesticide formulations,
  - d. Applicator safety,
  - e. Storage and disposal,
  - f. Pest identification control,
  - g. Integrated pest management.
4. Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting and submit details of the pesticide topics, including titles and length of time devoted to them. Board staff will review program agendas and assign credit values. Board staff will monitor programs as time permits.
5. A minimum credit of one hour shall be assigned for each one hour of presentation on appropriate topics.
6. An individual who conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each one hour of presentation on appropriate topics.
7. For in state programs, ~~each participant will complete a form to verify attendance at each program for which credit is allowed at the site. applicants must submit verification of attendance at approved programs to the Board.~~ For out of state programs, applicants must notify the Board about attendance and send a registration receipt or other proof of attendance a copy of the agenda or other description of the presentations attended. The agenda must show the length of each presentation and describe what was covered. submit verification of attendance; they may also be asked to provide documentation such as an agenda or descriptions of the presentations attended.
8. A person who fails to accumulate the necessary credits will have to re-apply to ~~take~~ re-take and pass the exam required for initial certification.

#### **Section 4.     Licensing**

- A. **Application.** Application for a pesticide dealer license shall be on forms provided by the Board.
- B. **Fee.** At the time of application, the applicant must tender the appropriate fee as follows:
1. For a pesticide dealer license - ~~\$20.00~~ \$60.00 per person.
  2. For replacement or alteration - \$5.00.
- C. **Reports.** All required reports described in Chapter 50 must have been submitted in proper form before a license will be processed.
- D. **Expiration.** All licenses will expire at the end of the certification period as determined in Section 2 A 7. ~~at the end of each calendar year.~~

### **Section 5. Special Dealer Requirements**

- A. Each dealer shall be responsible for the acts of those people in his/her employ and the dealer's license shall be subject to denial, suspension or revocation for any violation of the statute or regulations, whether committed by the dealer, his/her office, agent, employee, or other person acting in concert or participation with him/her.
- B. A licensed dealer must be present in the outlet at the time of sale of a restricted use pesticide so that she/he may supervise the transaction.
- C. Restricted-use and limited-use pesticides shall be stored separately in an area not accessible for self service.
- D. No dealer shall sell any restricted-use pesticides to any person who does not have in his/her possession a valid license.
- E. No dealer shall sell any limited-use pesticides to any person who does not have in his/her possession a valid license and limited-use permit.
- F. Dealers shall either maintain a record of restricted sales pursuant to Chapter 50, "Record Keeping and Reporting Requirements".

### **Section 6. Transition**

For the purposes of converting from one year licenses and five year certification periods to three year licenses with concurrent three year certification periods, and to ensure that license expirations are evenly distributed across any three year period, the Board may initially issue one, two, or three year licenses with corresponding certification periods. Licensees must obtain a proportional number of recertification credits per year during the transition period. License fees will also be prorated in accordance with the length of the license term. The length of the initial license terms will be assigned by the Board when an existing license is renewed, based on the applicant's last name.

STATUTORY AUTHORITY: 22 M.R.S.A. §1471-D

EFFECTIVE DATE:

January 1, 1983.

AMENDMENT EFFECTIVE:

August 17, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):

March 1, 1997

CONVERTED TO MS WORD:

March 11, 2003

MINOR CORRECTION:

April 25, 2013 – grammar in first paragraph

February, 2014 – agency names, formatting



**BASIS STATEMENT FOR ADOPTION OF  
CMR 01-026, CHAPTER 35— CERTIFICATION AND LICENSING  
PROVISIONS/SPRAY CONTRACTING FIRMS**

**Basis Statement**

Two amendments to Chapter 35 were proposed by the Board:

1. Remove the requirements for spotters and monitors for forest insect aerial spray programs.
2. Change the license period from two years to three.

One comment was received that was not specific to any particular chapter but was supportive of the proposed amendments. Consequently, the Board concluded that the proposed amendments better serve the public interest and determined it was appropriate to adopt the amendment as proposed.

**Impact on Small Business**

In accordance with 5 MRSA §8052, sub-§5-A, a statement of the impact on small business has been prepared. Information is available upon request from the Maine Board of Pesticides Control office, State House Station #28, Augusta, Maine 04333-0028, telephone 207-287-2731.

# **Rulemaking Statement of Impact on Small Business**

## **5 MRSA §8052, sub-§5-A**

### **Agency**

Department of Agriculture, Conservation and Forestry—Maine Board of Pesticides Control

### **Chapter Number and Title of Rule**

Chapter 35—Certification and Licensing Provisions/Spray Contracting Firms

### **Identification of the Types and an Estimate of the Number of the Small Businesses Subject to the Proposed Rule**

Currently there are 253 licensed spray contracting firms in Maine. They will all be affected in that the license period will increase from two years to three; the cost per year remains the same.

Businesses doing aerial spraying for forest insect projects will not be required to hire specific monitors and spotters. This amendment is required by a change in statute.

### **Projected Reporting, Record Keeping, and Other Administrative Costs Required for Compliance with the Proposed Rule, including the Type of Professional Skills Necessary for Preparation of the Report or Record**

None

### **Brief Statement of the Probable Impact on Affected Small Businesses**

The amendments will result in a slight decrease in paperwork.

Costs will be lower for major forest insect aerial spray projects.

### **Description of Any Less Intrusive or Less Costly, Reasonable Alternative Methods of Achieving the Purposes of the Proposed Rule**

Since there are no anticipated increased burdens on small businesses, there are no less intrusive or less costly alternatives.

**01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**

**026 BOARD OF PESTICIDES CONTROL**

**Chapter 35: CERTIFICATION AND LICENSING PROVISIONS/SPRAY CONTRACTING FIRMS**

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**SUMMARY:** These regulations describe the requirements for certification and licensing of spray contracting firms.

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### **1. Competency Standards for Certification**

No person shall be certified as a spray contracting firm unless it demonstrates that the firm will have in its employment a sufficient number of licensed Master and Operator applicators to actively supervise and conduct the program in accordance with all applicable laws and regulations, and that such firm will otherwise be competent to responsibly make a pesticide application. ~~Where a major forest insect aerial spray program is undertaken, the firm must also demonstrate that there will be an adequate number of licensed spotters to accompany each spray team.~~ A responsible official of the contracting firm will sign a statement attesting that he/she is familiar with and that the contracting firm will comply with all statutes, rules, and guidelines of the Board.

### **2. Certification Procedures**

All applicants must complete and submit an application provided by the Board which details the organizational structure of the spray contracting firm.

- A. Information shall include the firm name, chief officer, telephone number and location of the company headquarters, and business mailing address.
- B. Information shall also include a listing of all Master applicators who shall have responsibility for spray programs conducted in Maine along with their business locations and telephone numbers.
- C. Information shall also be included, as required on the application form, which demonstrates whether the firm has the necessary competence to responsibly apply pesticides in Maine.

### **3. Licensing**

- A. **Application.** Application for a spray contracting firm license shall be on the same form provided by the Board for certification information.
- B. **Fee.** At the time of application, the applicant must submit a fee of ~~\$200.00~~ \$300.00.
  - 1. For replacement or alteration - \$5.00.

- C. **Insurance.** An applicant must submit a completed and signed form, provided by the Board, which attests that the spray contracting firm will have the required amounts of insurance specified in Chapter 31 in effect when any employee or agent makes a pesticide application.
- D. **Reports.** Annual Summary Reports described in Chapter 50, Section 2(A) must be submitted for each calendar year by January 31 of the following year. In the event a required report is not received by the due date, the person's license is temporarily suspended until the proper report is received or until a decision is rendered at a formal hearing as described in 22 MRSA §1471-D (7).
- E. **Decision.** Within 15 days of receipt of application by the Board, unless the applicant agrees to a longer period of time, the Director shall issue, renew or deny the license. The Director's decision shall be considered final agency action for purposes of 5 M.R.S.A. §11001 *et seq.*
- F. **Refusal to Renew.** The Board may refuse to renew a license if it is not in accordance with any of the requirements hereof or if the Board makes, as to the licensee, any of the findings set forth in 22 M.R.S.A. §1471-D (8), which describe the bases for a decision by the Administrative Court to suspend or revoke a license. If the Board determines that there is evidence sufficient to refuse to renew a license, it shall give notice and an opportunity for a hearing before the Board prior to making that determination final.
- G. **Expiration.** All spray contracting firm licenses will expire at the end of the ~~second~~ third calendar year after issuance.

#### 4. **Special Spray Contracting Firm Requirements**

- A. No spray contracting firm may use or supervise the use of any pesticide within the State without prior certification from the Board.
- B. Each spray contracting firm shall be responsible for the acts of those people in its employ and its license shall be subject to denial, refusal to renew, suspension, or revocation, and such firm shall otherwise be punishable under the law, for any violation of the statutes or regulations, whether committed by the owner, chief officer, agent, employee or other person acting in concert or participation with it.
- C. No spray contracting firm shall make a forest insect aerial spray application until it ascertains that legally required notification has been given to the public and the Board, and there has been compliance with all other requirements for such an application, including any required licensing of its employees, agents and independent contractors and their employees.
- D. ~~No spray contracting firm shall make a major forest insect aerial spray application unless licensed applicators, spotters and monitors are in place to direct or monitor each spray aircraft or each team of spray aircraft during actual applications.~~

~~E.D.~~ A spray contracting firm shall cause its ~~licensed spotters and other~~ employees and agents to prepare reports pursuant to Chapter 50, "Record Keeping and Reporting".

## **5. Grandfathering and Transitions**

~~The 1999 amendments to this chapter which extend the license period shall affect licenses renewed after December 31, 2000.~~

For the purposes of converting from two year licenses to three year licenses to ensure that license expirations are evenly distributed across any three year period, the Board may initially issue one, two, or three year licenses. License fees will be prorated in accordance with the length of the license term. The length of the initial license terms will be assigned by the Board when an existing license is renewed, based on company name.

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STATUTORY AUTHORITY: 22 M.R.S.A. § 1471-D

EFFECTIVE DATE:

February 6, 1985

AMENDED:

January 12, 1986

August 17, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):

March 1, 1997

AMENDED:

December 28, 1999; also converted to MS Word

CORRECTIONS:

February, 2014 – agency names, formatting

SENATE

PETER E. EDGECOMB, DISTRICT 1, CHAIR  
THOMAS B. SAVIELLO, DISTRICT 17  
JAMES F. DILL, DISTRICT 5

MICHAEL O'BRIEN, LEGISLATIVE ANALYST  
CASSIE NIXON, COMMITTEE CLERK



HOUSE

CRAIG V. HICKMAN, WINTHROP, CHAIR  
WILLIAM F. NOON, SANFORD  
ROBERT J. SAUCIER, PRESQUE ISLE  
RALPH CHAPMAN, BROOKSVILLE  
MICHELLE ANN DUNPHY, OLD TOWN  
RUSSELL J. BLACK, WILTON  
DONALD G. MAREAN, HOLLIS  
CAROL A. MCELWEE, CARIBOU  
ANTHONY J. EDGECOMB, FORT FAIRFIELD  
MARYANNE KINNEY, KNOX

STATE OF MAINE  
ONE HUNDRED AND TWENTY-SEVENTH LEGISLATURE  
COMMITTEE ON AGRICULTURE, CONSERVATION AND FORESTRY

July 16, 2015

Department of Agriculture, Conservation and Forestry  
Maine Board of Pesticides Control  
c/o Henry Jennings, Director  
28 State House Station  
Augusta, ME 04333

Re: Pesticide use in public parks and playground facilities

Dear Mr. Jennings:

During the First Regular Session of the 127<sup>th</sup> Maine Legislature, the Joint Standing Committee on Agriculture, Conservation and Forestry conducted a public hearing and work session on LD 1098, An Act To Protect Children from Exposure to Pesticides.

Although we unanimously voted Ought Not to Pass on this piece of legislation, we request that the Maine Board of Pesticides Control review its rules in order to determine whether the standards for pesticide application and public notification for public parks and playgrounds should be consistent with the standards that have been established for pesticide application and public notification in school buildings and on school grounds under CMR 01-026, Chapter 27.

We would appreciate a response to this inquiry by February 1, 2016. Please let us know if you have any questions about our request.

Sincerely,

Handwritten signature of Peter E. Edgecomb.

Sen. Peter E. Edgecomb  
Senate Chair

Handwritten signature of Craig V. Hickman.

Rep. Craig V. Hickman  
House Chair

cc: Commissioner Whitcomb, Department of Agriculture, Conservation and Forestry  
Members, Joint Standing Committee on Agriculture, Conservation and Forestry  
Rep. Benjamin M. Chipman of Portland

**01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**

**026 BOARD OF PESTICIDES CONTROL**

**Chapter 27: STANDARDS FOR PESTICIDE APPLICATIONS AND PUBLIC NOTIFICATION IN SCHOOLS**

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**SUMMARY:** This rule establishes procedures and standards for applying pesticides in school buildings and on school grounds. This rule also sets forth the requirements for notifying school staff, students, visitors, parents and guardians about pending pesticide applications.

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**Section 1. Definitions**

- A. **Integrated Pest Management.** For the purposes of this rule, Integrated Pest Management (IPM) means the selection, integration and implementation of pest damage prevention and control based on predicted socioeconomic and ecological consequences, including:
- (1) understanding the system in which the pest exists,
  - (2) establishing dynamic economic or aesthetic injury thresholds and determining whether the organism or organism complex warrants control,
  - (3) monitoring pests and natural enemies,
  - (4) when needed, selecting the appropriate system of cultural, mechanical, genetic, including resistant cultivars, biological or chemical prevention techniques or controls for desired suppression, and
  - (5) systematically evaluating the pest management approaches utilized.
- B. **School.** For the purposes of this rule, School means any public, private or tribally funded:
- (1) elementary school,
  - (2) secondary school,
  - (3) kindergarten or
  - (4) nursery school that is part of an elementary or secondary school.
- C. **School Building.** For the purposes of this rule, School Building means any structure used or occupied by students or staff of any school.

- D. **School Grounds.** For the purposes of this rule, School Grounds means:
- (1) land associated with a school building including playgrounds, athletic fields and agricultural fields used by students or staff of a school, and
  - (2) any other outdoor area used by students or staff including property owned by a municipality or a private entity that is regularly utilized for school activities by students and staff. School grounds do not include land utilized primarily for non-school activities, such as golf courses and museums.
- E. **Integrated Pest Management Coordinator.** An employee of the school system or school who is knowledgeable about integrated pest management and is designated by each school to implement the school pest management policy.
- F. **School Session.** For the purposes of this rule, school is considered to be in session during the school year including weekends. School is not considered to be in session during any vacation of at least one week.

## Section 2. Requirements for All Schools

- A. All public and private schools in the State of Maine shall adopt and implement a written policy for the application of Integrated Pest Management techniques in school buildings and on school grounds.
- B. Each school shall appoint an IPM Coordinator who shall act as the lead person in implementing the school's Integrated Pest Management policy. The IPM Coordinator shall be responsible for coordinating pest monitoring and pesticide applications, and making sure all notice requirements as set forth in this rule are met. In addition, the IPM Coordinator shall:
- (1) complete Board-approved IPM Coordinator overview training within one month of his/her first appointment as an IPM Coordinator and obtain Board documentation thereof;
  - (2) complete Board-approved IPM Coordinator comprehensive training within one year of his/her first appointment as an IPM Coordinator and obtain Board documentation thereof;
  - (3) obtain at least one hour of Board-approved continuing education annually;
  - (4) maintain and make available to parents, guardians and staff upon request:
    - a. the school's IPM Policy,
    - b. a copy of this rule (CMR 01-026 Chapter 27),
    - c. a "Pest Management Activity Log," which must be kept current. Pest management information must be kept for a minimum of two years from date of entry, and must include:

- i. the specific name of the pest and the IPM steps taken, as described under Section 5C of this rule; and
  - ii. a list of pesticide applications conducted on school grounds, including the date, time, location, trade name of the product applied, EPA Registration number, company name (if applicable) and the name and license number of the applicator. If the product has no EPA Registration number, then a copy of the label must be included.
- (5) authorize any pesticide application not exempted under Sections 3A(2), 3A(3), 3B, 3C, or 3D made in school buildings or on school grounds and so indicate by completing and signing an entry on the Pest Management Activity Log prior to, or on the date on which the minimum notification requirements must be implemented; and
- (6) ensure that any applicable notification provisions required under this rule are implemented as specified.
- C. By September 1, every school shall inform the Board of the identity and the contact information for the IPM Coordinator. This requirement can be fulfilled through a Board approved reporting system.

### **Section 3. Exemptions**

- A. The following pesticide uses are exempt from the requirements of Sections 4 and 5 of this rule:
  - (1) application of ready-to-use general use pesticides by hand or with non-powered equipment to control or repel stinging or biting insects when there is an urgent need to mitigate or eliminate a pest that threatens the health or safety of a student, staff member or visitor,
  - (2) application of general use antimicrobial products by hand or with non-powered equipment to interior or exterior surfaces and furnishings during the course of routine cleaning procedures, and
  - (3) application of paints, stains or wood preservatives that are classified as general use pesticides.
- B. The following pesticide uses are exempt from the requirements of Section 4 of this rule:
  - (1) pesticides injected into cracks, crevices or wall voids,
  - (2) bait blocks, gels, pastes, granular and pelletized materials placed in areas inaccessible to students,
  - (3) indoor application of a pesticide with no re-entry or restricted entry interval specified on its label but entry to the treated area is restricted for at least 24 hours.

- C. When the Maine Center for Disease Control has identified arbovirus positive animals (including mosquitoes and ticks) in the area, powered applications for mosquito control are exempt from Section 4B(1) and 5C. Applicators should post the treated area as soon as practical, in a manner consistent with Section 4B(2).
- D. School education facilities utilized for agricultural or horticultural education, and not normally used by the general school population, such as, but not limited to, greenhouses, nursery plots or agricultural fields, are exempt from the application limitations contained in Section 5E and notification provisions contained in Section 4B(1) provided that parents, staff and students are informed about the potential for pesticide applications in such areas. The posting requirements contained in Section 4B(2) must be complied with. In addition, students entering treated areas must be trained as agricultural workers, as defined by the federal Worker Protection Standard.

#### **Section 4. Notification**

- A. A notice shall be included in the school's policy manual or handbook describing the school's IPM program including that a school integrated pest management policy exists and where it may be reviewed, that pesticides may periodically be applied in school buildings and on school grounds and that applications will be noticed in accordance with Section 4B hereof. This notice shall describe how to contact the IPM Coordinator and shall also state that the school's IPM Policy, a copy of the *Standards for Pesticide Applications and Public Notification in Schools* rule (CMR 01-026 Chapter 27), and the Pest Management Activity Log, are available for review.
- B. When school is in session, schools shall provide notice of pesticide applications in accordance with Sections 4B(1) and 4B(2). When school is not in session, notice shall be accomplished by posting of signs as described in Section 4B(2) of this rule.
  - (1) The school shall provide notification of each application not exempted by Section 3 performed inside a school building or on school grounds to all school staff and parents or guardians of students. Notices given shall state, at a minimum: (a) the trade name and EPA Registration number of the pesticide to be applied; (b) the approximate date and time of the application; (c) the location of the application; (d) the reasons for the application; and (e) the name and phone number of the person to whom further inquiry regarding the application may be made. These notices must be sent at least five days prior to the planned application.
  - (2) In addition to the notice provisions above, whenever pesticide applications not exempted by Section 3 are performed in a school building or on school grounds, a sign shall be posted at each point of access to the treated area and in a common area of the school at least two working days prior to the application and for at least forty-eight hours following the application. Posting of the notification signs as required by this rule satisfies the posting requirements of Chapter 28 of the Board's rules (CMR 01-026 Chapter 28).

- a. The signs shall:
  - i. be light colored (white, beige, yellow or pink) with dark, bold letters (black, blue, red or green).
  - ii. bear the word CAUTION in 72 point type,
  - iii. bear the words PESTICIDE APPLICATION NOTICE in 30 point type or larger,
  - iv. state any reentry precautions from the pesticide labeling in at least 12 point type,
  - v. state the approximate date and time of the application in at least 12 point type, and
  - vi. state the name of the company or licensed applicator making the pesticide application and a contact telephone number in at least 12 point type,
- b. The signs for indoor applications must:
  - i. be at least 8.5 inches wide by 11 inches tall,
  - ii. state the trade name and EPA Registration number(s) of the pesticide(s) to be applied in at least 12 point type,
  - iii. state the location of the application in at least 12 point type, and
  - iv. state the reason(s) for the application in at least 12 point type.
- c. The signs for outdoor applications must:
  - i. be at least 5 inches wide by 4 inches tall,
  - ii. be made of rigid, weather-resistant material that will last at least ninety-six (96) hours when placed outdoors,
  - iii. bear the Board designated symbol (see appendix A), and
  - iv. state a date and/or time to remove the sign.

## **Section 5. Integrated Pest Management Techniques**

- A. All pest management activities shall be undertaken with the recognition that it is the policy of the State to work to find ways to use the minimum amount of pesticides needed to effectively control targeted pests in all areas of application. In all cases, applications should be conducted in a manner to minimize human risk to the maximum extent practicable using currently available technology.

- 
- B. All pest management activities should be conducted using appropriate elements of integrated pest management as described in the latest Cooperative Extension or Department of Agriculture training manuals for pest management in and/or on school property. Pest management activities should also be conducted in accordance with the Best Management Practices for Athletic Fields & School Grounds, or other applicable Best Management Practices approved by the Board.
- C. Prior to any pesticide application the following steps must be taken and recorded:
- (1) monitor for pest presence or conditions conducive to a pest outbreak,
  - (2) identify the pest specifically,
  - (3) determine that the pest population exceeds acceptable safety, economic or aesthetic threshold levels, and
  - (4) utilize non-pesticide control measures that have been demonstrated to be practicable, effective and affordable.
- D. When a pesticide application is deemed necessary, the applicator must comply with all the requirements of CMR 01-026 Chapter 31–Certification and Licensing Provisions/Commercial Applicator. The applicator must also take into account the toxicity of recommended products and choose lowest risk products based on efficacy, the potential for exposure, the signal word on the pesticide label, the material safety data sheet, other toxicology data and any other label language indicating special problems such as toxicity to wildlife or likelihood of contaminating surface or ground water.
- E. Indoor pesticide use must be limited to placement of baits and wall void or crack and crevice and pool and spa disinfectant treatments unless the pest threatens the health and safety of persons in the buildings as determined by the school's integrated pest management coordinator.
- F. Pesticide applications must not be conducted when people are in the same room to be treated except that applicators may set out bait blocks, pastes or gels when only informed staff members are present. When space, spot, surface or fumigation applications are conducted the ventilation and air conditioning systems in the area must be shut off or the entire building must be evacuated. Applications should be planned to occur on weekends or vacations to allow maximum time for sprays to dry and vapors to dissipate.
- G. Outdoor applications should be scheduled so as to allow the maximum time for sprays to dry and vapors to dissipate and shall not occur when unprotected persons are in the target area or in such proximity as to likely result in unconsenting exposure to pesticides. Applications must also be conducted in accordance with all other applicable Board rules designed for minimizing pesticide drift and posting of treated sites. Spot treatments should be considered in lieu of broadcast applications.

**Section 6. Requirements for Commercial Pesticide Applicators Making Applications in School Buildings or on School Grounds**

- A. Prior to conducting a pesticide application not exempted in Section 3 in a school building or on school grounds, commercial pesticide applicators shall 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.
  - B. Commercial pesticide applicators shall, within one business day of each pesticide application, provide the IPM Coordinator with a written record of the application including the date, time, location, trade name of the product applied, EPA Registration number and the name of the licensed applicator. If the product has no EPA Registration number then the applicator will provide a copy of the label.
  - C. Commercial pesticide applicators shall inform the IPM Coordinator about any pest monitoring activity and results. If it is acceptable to the IPM Coordinator, this may be achieved by recording them in the Pest Management Activity Log.
- 

STATUTORY AUTHORITY: 7 M.R.S.A. §§ 601-625 and 22 M.R.S.A. §§ 1471-A-X

**EFFECTIVE DATE:**

August 30, 2003, filing 2002-408 accepted October 24, 2002.

**AMENDED:**

July 5, 2005 – filing 2005-266

March 4, 2007 – Section 3(C), filing 2007-67

August 29, 2013 – filing 2013-188 (Final adoption, major substantive)

**Appendix A**

**Board Designated Symbol for Posting Outdoor Pesticide Applications to School Grounds**





PAUL R. LEPAGE  
GOVERNOR

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

WALTER E. WHITCOMB  
COMMISSIONER

HENRY S. JENNINGS  
DIRECTOR

August 5, 2015

Lynn Mills  
53 Jenks Road  
Chebeague Island, Maine 04017

**RE: Variance Permit for CMR 01-026, Chapters 29 for Phragmites Control on Chebeague Island**

Dear Ms. Mills:

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

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

This letter will serve as your Chapter 29 variance permit until December 31, 2017 for the treatment of phragmites (*Phragmites australis* subsp. *australis*) on the site on Chebeague Island. We understand that you have been working with the Department of Environmental Protection on a plan to control the phragmites *within* the wetland; this permit covers only the area *adjacent* to the wetland.

Please bear in mind that your permit is based upon adherence to the precautions listed in Sections V and X of your variance application. If it is determined that a different product needs to be used, you must contact the Board first and get a new variance.

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

Sincerely,

Henry Jennings  
Director  
Maine Board of Pesticides Control

cc: Bryan Emerson  
Stantec  
30 Park Drive  
Topsham, Maine 04086



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

WALTER E. WHITCOMB  
COMMISSIONER  
HENRY JENNINGS  
DIRECTOR

July 17, 2015

June Barden  
5 Varney Mill Rd  
Windham, ME 04062

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

Dear Ms Barden,

On November 18, 2011, the Board authorized the staff to issue permits for broadcast pesticide applications within 25 feet of water for control of plants that pose a dermal toxicity hazard provided the applicator agrees to use low-pressure equipment and direct the spray away from the water.

By way of this letter, your request for a variance from the 25-foot setback requirement contained in Chapter 29, Section 6 is hereby granted for the treatment of a poison ivy at 5 Varney Mill Road, Windham, Maine for 2015. Please bear in mind that your permit is based upon your company adhering to the precautions listed in Section X of your variance application.

We will alert the Board at its August 28, 2015 meeting that the variance permit has been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Henry Jennings  
Director  
Maine Board of Pesticides Control

Copy:  
Top Leaf Tree LLC  
147 Valley Road, Raymond, ME 04071



PAUL R. LEPAGE  
GOVERNOR

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

WALTER E. WHITCOMB  
COMMISSIONER

HENRY S. JENNINGS  
DIRECTOR

August 18, 2015

David Adams  
Dasco Inc  
1455 Central Dr.  
Presque Isle, Maine 04769

**RE: Variance Permit for CMR 01-026, Chapters 29 for Phragmites Control in Roadside Ditches**

Dear Mr. Adams:

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

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

This letter will serve as your Chapter 29 variance permit until December 31, 2017 for the treatment of phragmites (*Phragmites australis* subsp. *australis*) on forest roads in T7R19WELS, T8R19WELS, T11R16, T9R17, T8R7, and T8R16 to comply with requirements of SFI and FSC certification.

Please bear in mind that your permit is based upon adherence to the precautions listed in Sections V and X of your variance application. If it is determined that a different product needs to be used, you must contact the Board first and get a new variance.

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

Sincerely,

Henry Jennings  
Director  
Maine Board of Pesticides Control



PAUL R. LEPAGE  
GOVERNOR

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

WALTER E. WHITCOMB  
COMMISSIONER

HENRY S. JENNINGS  
DIRECTOR

August 5, 2015

Joseph Anderson  
High Pine Environmental, LLC  
105 Front Street  
Portland, Maine 04103

**RE: Variance Permit for CMR 01-026, Chapters 29 for Phragmites Control in York, Maine**

Dear Mr. Anderson:

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

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

This letter will serve as your Chapter 29 variance permit until December 31, 2017 for the treatment of phragmites (*Phragmites australis* subsp. *australis*) on the site on Barrells Millpond in York, Maine. This variance permit is only for the area within 25 feet upland of the high water mark, not to the wetland itself. I checked with the Department of Environmental Protection (DEP) to see if this application would be a concern. DEP's response was that applications may be made without a DEP Waste Discharge License provided that those applications are made in accordance with the guidelines in the attached fact sheet "Use of Herbicides in Wetlands in Maine".

Please bear in mind that your permit is based upon adherence to the precautions listed in Sections V and X of your variance application. If it is determined that a different product needs to be used, you must contact the Board first and get a new variance.

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

Sincerely,

Henry Jennings  
Director  
Maine Board of Pesticides Control

**Maine Board of Pesticides Control**

**Miscellaneous Pesticides Articles  
August 2015**

*(identified by Google alerts or submitted by individuals)*

**syracuse.com**

## Aerial spraying of Cicero Swamp for mosquitoes to begin Tuesday

spray2005.jpg

A plane sprays the Cicero Swamp in this file photo (*David Lassman | dlassman@syracuse.com*)

**Sarah Moses | smoses@syracuse.com** By **Sarah Moses | smoses@syracuse.com**

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on July 06, 2015 at 11:30 AM, updated July 06, 2015 at 11:31 AM

CICERO, N.Y. -- The Onondaga County Health Department will begin conducting **aerial spraying** of Cicero Swamp Tuesday night.

The aerial spraying will help reduce the number of mosquitoes in the area of the Cicero Swamp and reduce the risk of disease. The county Health Department announced the spraying **last week after finding mosquitoes infected** with Eastern equine encephalitis.

EEE is a rare viral disease carried by mosquitoes. County officials urged residents to take precautions against mosquitoes, including using bug spray.

There were two human cases of the virus last year, the county said. **Five Central New Yorkers have died** from EEE since 1971, **including Maggie Wilcox**, a 4-year-old Oswego resident, four years ago.

The spraying is scheduled for the hours between 7 and 10 p.m., weather permitting.

The product that will be used is "Anvil 10 + 10" and will be applied at very low concentrations to control mosquitoes. "Anvil 10 + 10" is a pesticide product that is used to control mosquitoes in outdoor residential and recreational areas. It contains sumithrin and piperonyl butoxide as active ingredients. Sumithrin is a man-made pyrethroid insecticide that can also be found in other pesticide products used indoors and on pets to control ticks and insects, such as fleas and ants.

For more information, contact the county's Division of Environmental Health at 435-1649.

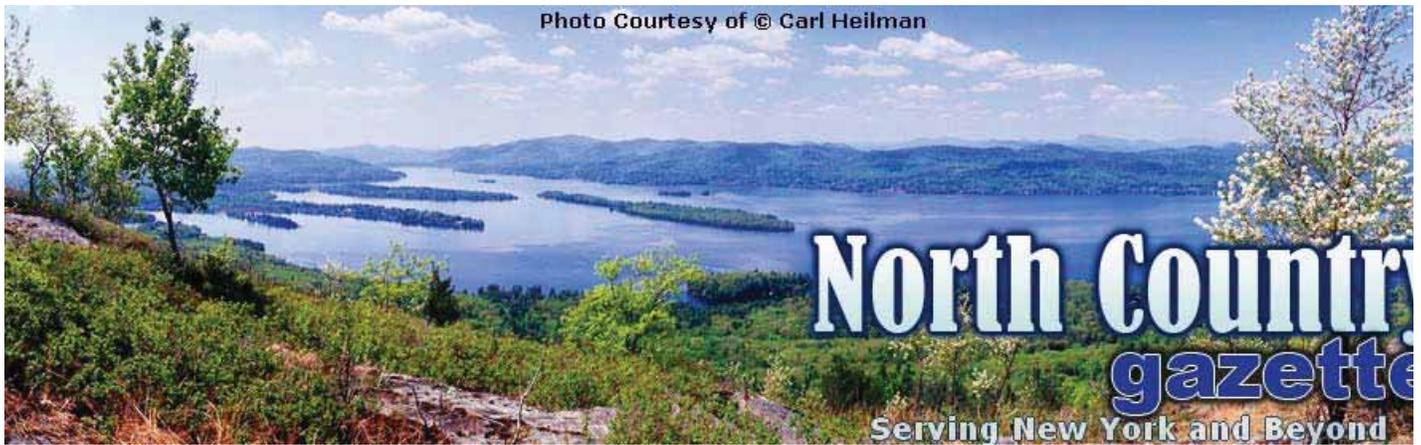
### Here's some tips to help reduce mosquito breeding grounds:

- Throw away outdoor containers, ceramic pots or containers that hold water
- Remove all tires from your property
- Drill holes in the bottoms of recycling containers that are kept outdoors
- Clean clogged rain gutters and make sure they continue to work properly
- Turn over wheelbarrows and wading pools when not in use
- Change water in bird baths at least every four days
- Clear vegetation and debris from the edges of ponds
- Clean chlorinated swimming pools, outdoor saunas, and hot tubs
- Drain water from pool covers
- Use landscaping to eliminate low spots where standing water accumulates

*Sarah Moses covers the northern suburbs of Onondaga County and Oswego County. Contact Sarah at **smoses@syracuse.com** or 470-2298.*

*Follow @**SarahMoses315***

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## Avoid Mosquito Bites, West Nile Virus Confirmed

by NORTH COUNTRY GAZETTE on JULY 2, 2015 · LEAVE A COMMENT

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ALBANY—The state Department of Health is urging New Yorkers to take personal protective measures to avoid mosquito bites, after confirming the presence of West Nile Virus in mosquitos collected in Suffolk and Rockland Counties.

West Nile Virus is a mosquito-borne infection that can cause serious illness and occasionally death. Many people who contract the virus do not experience any symptoms of illness, while an estimated 20 percent of infected people develop mild symptoms including fever, headache and body aches, skin rash or swollen lymph glands. It is estimated that one in 150 persons infected with West Nile Virus will experience a more severe case of the disease that could develop into West Nile encephalitis (inflammation of the brain) or meningitis. These more severe cases may also cause additional symptoms including stupor, disorientation, tremors, convulsions, paralysis or coma.

The Rockland and Suffolk County ‘pools’ of mosquitoes are the first in the state to test positive for West Nile and to date, there have been no reported human cases. In 2014, 752 mosquito pools tested positive statewide, with 21 reported human cases and no deaths.

In addition to West Nile, mosquitoes may also carry Eastern Equine Encephalitis (EEE).

EEE is a rare, but extremely serious viral disease spread by mosquitoes that can affect people and horses. People of all ages are susceptible to infection, but people over 50 and younger than 15 are at greatest risk for acquiring the virus. While most people

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bitten by an infected mosquito will not develop any symptoms, severe cases begin with the sudden onset of headache, high fever, chills and vomiting. The illness may then progress into disorientation, seizures, encephalitis and coma. Approximately a third of patients who develop EEE die, while many patients who survive EEE experience mild to severe brain damage.

EEE has not been detected in any mosquito samples tested to date this year, and there have been no human cases. In 2014, 87 mosquito pools tested positive statewide, with two reported human cases. No deaths occurred, however there have been three confirmed deaths from the disease in New York over the past five years.

There is no commercially available human vaccine for either West Nile Virus or EEE, so the best way to protect yourself is to keep mosquitoes from biting you. One of the best ways to do this is to take steps to reduce the number of mosquitoes around your home or property, including eliminating standing water in yards, by:

- Disposing of used tires, tin cans, plastic containers, ceramic pots or similar containers in which water collects.
- Drilling holes in the bottoms of recycling containers that are kept outdoors.
- Making sure roof gutters drain properly; cleaning clogged gutters in the spring and fall.
- Turning over plastic wading pools and wheelbarrows when not in use and changing the water in bird baths twice a week.
- Cleaning vegetation and debris from the edges of ponds.
- Cleaning and chlorinating swimming pools, outdoor saunas and hot tubs, and draining water from pool covers.

Repellents also provide protection against tick and mosquito bites. The federal Centers for Disease Control and Prevention (CDC) recommend choosing a repellent that contains DEET, IR3535, or oil of lemon eucalyptus for use on skin. Clothing and gear, such as boots, pants, socks and tents, can be treated with products containing permethrin. (Permethrin should not be used on skin.) Treated clothing or gear remains protective through several washings. Pre-treated clothing is also available and remains protective for up to 70 washings. For all repellents, follow the label directions and apply in small amounts, avoiding contact with the eyes, nose or mouth. Use only small amounts when applying repellents on children.

For more information on West Nile virus visit: [www.health.ny.gov/diseases/west\\_nile\\_virus/fact\\_sheet.htm](http://www.health.ny.gov/diseases/west_nile_virus/fact_sheet.htm).

For more information on eastern equine encephalitis virus visit: [www.health.ny.gov/diseases/communicable/eastern\\_equine\\_encephalitis/fact\\_sheet.htm](http://www.health.ny.gov/diseases/communicable/eastern_equine_encephalitis/fact_sheet.htm). 7-2-15

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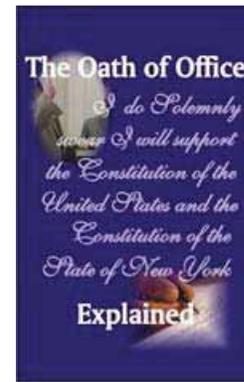
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## South Portland considers citywide pesticide ban

4:51 p.m. EDT August 3, 2015



(Photo: NEWS CENTER)

**SOUTH PORTLAND, Maine (NEWS CENTER)** -- South Portland city councilors are looking into banning pesticides throughout the city.

Councilor Tom Blake said pesticides are wreaking havoc on the environment, and they want to protect the health of their citizens.

Phil Roberts has been in the gardening business his entire life; his family owns Broadway Gardens. He's been studying the effects of pesticides for 30 years, and said he's worried the city is acting without enough information.

While he agrees there should be limits on the use of harmful products, organic options don't always solve the problem; need to be sprayed more often; and in some cases, can actually be more harmful.

The ban would mean that homeowners have to start with organic options to freshen up their lawn, or get rid of any pests. That means if a family has a flea or ant infestation, they'd be forced to start with organic products for treatment, which Roberts said often don't work as well.

Councilor Blake said in cases like that, homeowners would be able to file an appeal to use something stronger to rid their home of pests.

"Southern Maine has a very high incidence of cancer and respiratory problems especially in young people," said Blake. "Nationwide there is a severe decline in bats, bees, and birds, and it's a proven fact that this is primarily due to America's excessive use of pesticides."

Ogunquit is the only other town in Maine to place restrictions on landscaping pesticides. Code enforcement officer Scott Heyland admits it's been a learning curve.

He said residents have complained that organic alternatives aren't working as well to get rid of pests, but they're moving in the right direction for the town's overall health.

South Portland plans to continue the conversation in a few more workshops. You can find out more information on when those are happening by visiting the city's [website \(http://www.southportland.org/\)](http://www.southportland.org/).

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# Under the influence: sublethal exposure to an insecticide affects personality expression in a jumping spider

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## Summary

1. Consistent behavioural differences between individuals have far-reaching implications for ecology and evolution, including how populations cope with increasing anthropogenic changes, notably pesticides. Although sublethal doses of insecticides are known to alter behaviour, current studies on the relationship between toxicants and behaviour tend to ignore effects on individual variation.

2. Our objective was to determine whether sublethal exposure to an organophosphate insecticide could affect the consistency of individual behaviour and disrupt behavioural correlations, in a jumping spider occurring in agroecosystems. Adults of the jumping spider *Eris militaris* (Araneae: Salticidae) were scored by an open-field and a prey-capture assay, each conducted pre- and post- exposure to the organophosphate insecticide phosmet. Half of the individuals received no exposure to the insecticide to provide a control group. We then estimated the changes in repeatability, a measure of the extent of personality differences, and in behavioural correlations between control and insecticide-treated groups.

3. Although insecticide exposure had no discernable effects on the population's average behaviours, insecticide-exposed individuals showed an average of 23% lower repeatability and the correlation between activity and prey capture was more strongly collapsed in females.

4. Our results provide clear evidence that exposure to sublethal doses of insecticides on an important arthropod predator in agroecosystems causes substantial alteration of personality differences even in absence of a population-wide shift in behaviour. This suggests that insecticide effects are more complex than previously thought and indicates high variation in the way individuals coped with insecticidal exposure.

5. By altering the consistency of behavioural traits and their correlations, exposure to sublethal concentrations of insecticides can have subtle effects on behavioural expression, which may ultimately affect biocontrol performance in an important arthropod predator in agroecosystems. Our study calls for an increasing focus on individual behavioural variation when testing the effects of pesticides on non-targeted fauna.

**Key-words:** animal personality, anthropogenic disturbance, behavioural syndromes, consistent individual variation, contaminants, multivariate mixed models, pesticides

## Introduction

The study of animal personalities has received much attention in recent years. This emerging field has shown that consistent behavioural differences among individuals are

common in animals (Réale *et al.* 2007). These differences are sometimes correlated across different behavioural contexts, forming behavioural syndromes (Sih, Bell & Johnson 2004; Sih *et al.* 2004). Behavioural differences have important implications for ecological and evolutionary dynamics since they affect individual fitness and can have cascading effects on animal communities by shaping the magnitude and direction of species interactions (Sih *et al.* 2012; Wolf & Weissing 2012). In addition, behavioural differences

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provide a framework to study how individuals cope with increasing anthropogenic activities (Sih *et al.* 2010). Human-induced environmental changes challenge species to respond adaptively to those novel conditions. The effects of these changes may vary depending on the behavioural phenotype being considered. Some personality types perform better in human-disturbed environments (Martin & Réale 2008; Madden & Whiteside 2013), and the overall architecture of behavioural syndromes can differ between populations with varying degrees of anthropogenic pressures (Miranda *et al.* 2013; Royauté, Buddle & Vincent 2014). In addition, certain classes of anthropogenic changes (e.g. urban noise, pollutants) may amplify or attenuate behavioural and physiological variation (Killen *et al.* 2013).

Pesticides used in agriculture are important stressors for animals. These compounds are often wide-spectrum and are linked to declines in populations of seed dispersers (Krebs *et al.* 1999; Donald, Green & Heath 2001), pollinators (Brittain *et al.* 2010) and biocontrol agents (Geiger *et al.* 2010). Most pesticides degrade rapidly after spraying, and organisms are frequently exposed to pesticide residues, which cause changes in physiology and behaviour, rather than to doses causing direct mortality (reviewed in Desneux, Decourtye & Delpuech 2007).

While our knowledge of the effects of sublethal exposure to pesticides on behaviour has increased rapidly, individual differences remain poorly accounted for in ecotoxicological assays (Montiglio & Royauté 2014). Current practices tend to report shifts in average behaviour post-exposure rather than focusing on how behavioural expression of individuals may change through pre- and post-exposure phases. Stated another way, current studies ignore potential effects that may be due to personality differences. Most studies focus on unique traits rather than using the multidimensional approach favoured by behavioural syndrome studies.

Studying how personality differences and correlations among personality traits vary under exposure to pesticides addresses a significant gap in our knowledge of the consequences of pesticide exposure on non-targeted organisms. It is important to understand if differences in aggressive, bold or exploratory behaviours remain consistent when individuals are exposed to pesticide stress. These effects can be particularly relevant for predator species with regulating effects on the population dynamics of prey species. In an agroecological context, certain behavioural phenotypes may participate more actively in biocontrol (e.g. active and voracious individuals) and a decoupling of these differences through pesticide exposure may limit their contribution to pest control.

Spiders (Araneae) are an ideal taxon to study the interaction between behavioural variation and pesticide exposure. Spiders are abundant in many agroecosystems and provide important pest regulation services (Carter & Rypstra 1995). They are sensitive to pesticides (Pekar 2012) and their personality traits and behavioural syndromes are well-documented (Pruitt & Riechert 2012). We used the

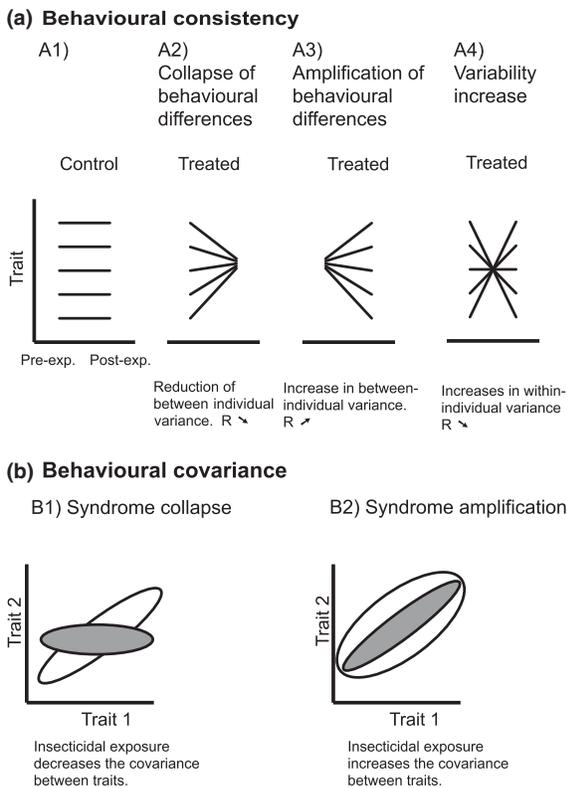
jumping spider *Eris militaris* (Araneae: Salticidae) as a model taxon in this research. This species is commonly found in apple orchards and is easily reared under laboratory conditions. Previous work indicated differences in syndrome structure when comparing insecticide-free and insecticide-exposed populations, most notably regarding the strength of an activity-voracity syndrome (Royauté, Buddle & Vincent 2014). Here, we expand on this work by testing how direct exposure to an insecticide can impact personality traits and their syndromes. We focus on traits related to activity and prey capture behaviours because these traits are frequently correlated in spiders with important consequences for individuals' survival and fitness (Pruitt, Riechert & Jones 2008; Pruitt & Krauel 2010).

Our objective was to test whether sublethal exposure to an organophosphate insecticide can alter personality, either by affecting the consistency of behavioural traits or by affecting the strength of correlation between traits. We tested several hypotheses by which sublethal exposure to insecticides is expected to alter the expression of personality traits and their correlations. First, insecticidal exposure may affect patterns of repeatability, a measure of the extent of personality differences (Fig. 1a). Such differences may occur because (i) insecticide-exposed individuals become more similar (collapse of behavioural differences hypothesis); (ii) personality differences are amplified after insecticidal exposure (amplification of behavioural differences hypothesis); or (iii) each individual becomes more variable after exposure (variability increase hypothesis). Second, insecticidal exposure may affect patterns of correlation between behavioural traits and either reduce (syndrome collapse hypothesis) or amplify (syndrome amplification hypothesis) the magnitude of behavioural correlations (Fig. 1b).

## Materials and methods

### SPIDER COLLECTION AND REARING

Juvenile *E. militaris* were collected from three populations in habitats where insecticide exposure is expected to be low. The first site was an apple orchard managed without insecticidal applications since its implementation 20 years ago (Agriculture and Agri-Food Canada experimental farm in Frelighsburg, QC, 45.0462°W, -72.8565°N). The other sites were shrubby areas located near the McGill Morgan Arboretum (Ste Anne de Bellevue, QC, 45.440185°W, -73.946893°N) and the Pin Rigide Ecological Reserve (Saint-Chrysostome, QC, 45.111657°W, -73.876557°N). Spiders were collected haphazardly by beating the foliage of trees and brought to the laboratory. We also included laboratory-reared specimens (F1) collected in the apple orchard site. Juveniles were reared to adults in cylindrical containers (760 mL Plastipak<sup>®</sup>, Plastipak Holdings Inc., Plymouth, MI, USA) that included a plastic plant to mimic natural conditions (Carducci & Jakob 2000) and a small plastic straw retreat ( $L = 2.5$  cm,  $\varnothing = 1.2$  cm). They were kept at 24 °C and 40% humidity, under a 16L:8D photoperiod. Water was provided *ad lib* using dental cotton inserted in an Eppendorf tube. Spiders were fed weekly with a mixed diet of cabbage looper larvae (*Trichoplusia ni*), two species of adult fruit flies of different sizes (*Drosophila melanogaster* and *Drosophila hydei*) and juvenile domestic crickets (*Acheta domestica*).



**Fig. 1.** Different scenarios explaining how sublethal insecticidal exposure may alter patterns of behavioural consistency (a) and covariance (b). (a) All lines represent a single individual measured before and after exposure to an insecticide. A1 indicates a control case where behavioural repeatability ( $R$ ) is unchanged in the absence of insecticidal exposure. A2 and A3 represent cases where insecticidal exposure causes repeatability to decrease either by shifting individuals towards the population mean (behavioural differences collapse) or by amplifying individual differences (behavioural differences amplification). A4 describes a case where insecticidal exposure increases the behavioural variability of each individual (variability increase). (b) Ellipses indicate the strength of correlation between two behavioural traits in presence (grey ellipses) and absence of insecticidal exposure (white ellipses). Insecticidal exposure may either decrease (B1, syndrome collapse scenario) or amplify (B2, syndrome amplification scenario) behavioural correlations.

## BEHAVIOURAL TESTS

We tested 176 adult individuals for behavioural correlations (Arboretum population – females:  $n = 15$ , males:  $n = 7$ ; apple orchard population – females:  $n = 42$ , males:  $n = 51$ ; laboratory-reared population – females:  $n = 33$ , males:  $n = 14$ ; Pin Rigide population – females:  $n = 9$ , males:  $n = 5$ ). We used a repeated measure design that allowed us to simultaneously compare effects of insecticides on differences in average behavioural values between treatments as well as investigating effects on behavioural variations at between and within-individual levels. We processed the spiders through the behavioural tests with up to 16 individuals at a time (minimum 8). In order to standardize satiety, we offered spiders one adult fruit fly (*D. hydei*) during the week preceding the tests and one adult *D. melanogaster* 12 h prior to the tests. We then recorded spiders' behaviour using open-field and prey capture tests performed before and after exposure to the insecticide (hereafter referred to as pre and post-exposure phases). We consistently

conducted behavioural tests in the same order, with the open-field conducted from 8.30 to 11.00, and prey capture from 14.00 to 16.00. At the end of the first day of testing, we exposed spiders to a sublethal dose of the organophosphate phosmet for 24 h using the procedure described in Appendix S1 (Supporting information). Phosmet was selected as it is a widely-used, broad-spectrum insecticide which mode of toxicity, inhibition of acetylcholinesterase activity, is well-documented (Mineau 1991). The sublethal dose we used was in the range of field concentrations and was therefore ecologically relevant for our experiment ( $\sim 1$  ppm) (Pettis *et al.* 2013).

Half of the spiders were introduced in test tubes containing the sublethal dose and the other half were introduced in control tubes (control group:  $n = 81$ , insecticide-treated group:  $n = 95$ ). After 24 h exposure, we reintroduced spiders in their containers, offered them one *D. melanogaster*. Because sublethal effects of insecticides are often short-lived and reversible (Desneux, Decourtye & Delpuech 2007), we repeated the behavioural tests immediately on the following day (inter-test interval: 48 h). In the insecticide-treated group, two individuals (out of 95) died, while in the control group, one individual (out of 81) died. We took mass and body-size measurements on 151 individuals. Spiders were weighed immediately after the prey capture test at pre- and post-exposure phases. Body mass ( $\pm 0.1$  mg) was determined using a Sartorius TE214S scale. We used cephalothorax width ( $\pm 0.001$  mm) as a proxy for body size and measured using a WILD MMS 225 digital length measuring set. Body-condition was estimated as a residual index (following Jakob, Marshall & Uetz 1996). All tests were videotaped using a Canon Vixia HF200 camera (Canon Inc., Tokyo, Japan). To remove traces of conspecific cues, we cleaned test arenas with 70% ethanol and air-dried them for 120 s between trials. We used video playback with the software The Observer XT (Noldus Information Technology, Wageningen, The Netherlands) to acquire the parameters related to activity and prey capture.

## OPEN-FIELD TEST

We used a wooden open-field arena of  $30 \times 30$  cm divided in  $5 \times 5$  cm quadrats for the open-field test (Carducci & Jakob 2000). The arena was subdivided in three zones: a central zone (four quadrats), an intermediate zone (12 quadrats) and an edge zone (20 quadrats). We let each spider rest for 120 s in a 5 cc syringe before we released it at the centre of the arena. We started recording as soon as the spider entered one of the four central quadrats. During 300 s, we recorded the latency to exit the first quadrat (s), the total number of quadrats visited, the number of unique quadrats visited, the number of quadrats visited during the first minute of the test and the number of quadrats visited in each zone of the arena.

## PREY CAPTURE TEST

We introduced each spider in a 9 cm Petri dish and left it to rest for 120 s. At the end of the resting period, we inserted an adult *D. hydei* into the Petri dish through a hole on its side using a buccal aspirator. Due to a technical problem during the rearing of *D. hydei*, we used the smaller prey species *D. melanogaster* for a subset of 42 individuals. As none of the observed behaviours differed significantly depending on fly species ( $P > 0.3$ ), this variable was removed from subsequent analyses. Spiders were given a duration of 600 s to capture the prey. We recorded the latencies to detect (defined as the first orientation towards the prey) and capture the prey, as well as the average time performing visual and active tracking of the prey. We defined visual tracking as instances where the spider oriented its cephalothorax towards the prey and visually followed the prey at a distance. Active tracking was defined as a fast forward motion towards the prey, often

concluded by a capture attempt. The test was stopped as soon as the spider captured the prey or when the 600 s duration was reached. The fly was removed from the spider by probing it with the tip of a small brush in order to keep satiety consistent between tests. We assigned a capture latency value of 600 s for spiders that failed to capture the prey. Proportion of capture success did not differ between treatments (Fisher exact test,  $P = 0.25$ ).

## STATISTICAL ANALYSES

We conducted all analyses with R, version 3.0.0 for Macintosh (R Core Team 2013). We used the Bayesian package MCMCglmm (Hadfield 2010) for mixed modelling analyses and lavaan (Rosseel 2012) for structural equations modelling analyses. Prior to all analyses, count data (e.g. number quadrats travelled, number of attacks on prey) were square-root transformed and continuous data (e.g. detection and capture latencies) were  $\ln(x + 1)$ -transformed to conform with the assumption of normality.

## EXPLORATORY ANALYSIS

We used structural equation modelling in the exploratory analysis described in Appendix S1 (Supporting information) to identify the behavioural variables that were the best indicators of activity and prey capture. For activity, the variables selected as best indicators were the total activity (total number of quadrats explored), the surface explored (number of unique quadrats explored) and the edge activity (number of edge quadrats visited). For prey capture, those variables were the latency to detect and capture the prey as well as the amount of active and visual tracking performed by the spider (Appendix S1, Table S1, Fig. S1, Supporting information). We hereafter collectively refer to these seven variables as behavioural traits.

## EFFECT OF INSECTICIDAL EXPOSURE ON AVERAGE BEHAVIOUR

In order to investigate the effects of insecticidal treatments on the expression of average behaviour, we performed Bayesian univariate linear mixed models on each behavioural trait selected through the previous exploratory analyses (Appendix S2a, Supporting information). Fixed effects included population, sex and the interaction between treatment and test phase. Individuals were included as random effects to account for repeated measures. Our hypothesis was that sublethal effects on behaviours would occur only in the post-exposure phase and would be detected through a significant treatment  $\times$  test interaction. We reported the posterior mode for each fixed effect estimates along with their 95% credible intervals (CI).

## EFFECT OF INSECTICIDAL EXPOSURE ON BEHAVIOURAL REPEATABILITY

Repeatability is commonly used as a measure of the extent of individual differences in behaviour, and is defined as the ratio of between-individual variance over the total phenotypic variance:  $R = V_{BI}/(V_{BI} + V_{WI})$ , where the phenotypic variance  $V_P$  is expressed as  $V_P = V_{BI} + V_{WI}$  ( $V_{BI}$ : between-individual variance,  $V_{WI}$ : residual or within-individual variance). We used Bayesian univariate mixed models to compare behavioural repeatability between treatments and sex (Appendix S2a, Supporting information). Individuals were included as random effects. Significant fixed effects selected through the above analyses (i.e. population and sex) were included to avoid over confident estimates of repeatability (Nakagawa & Schielzeth 2010; Westneat *et al.* 2011). All

behavioural variables were expressed as standard deviation units to facilitate convergence. We report the posterior mode and 95% credible intervals for repeatability as well as the effect size for the difference in repeatability between treatments:  $\Delta R$  (defined as  $R_{\text{insecticide-treated}} - R_{\text{control}}$ ). To further test which component of the phenotypic variance most influenced differences in repeatability, we calculated  $\Delta V_{BI}$  and  $\Delta V_{WI}$  (defined as  $V_{\text{insecticide-treated}} - V_{\text{control}}$ ). We based inference on overlap of the 95% CIs with zero.

## EFFECT OF INSECTICIDAL EXPOSURE ON BEHAVIOURAL CORRELATIONS

To test whether sublethal insecticide exposure would affect patterns of trait covariance at between and within-individual levels, we performed Bayesian multi-response mixed models on each treatment group separately (Appendix S2b). We assessed the magnitude of between ( $r_{BI}$ ) and within-individual ( $r_{WI}$ ) correlation based on the posterior mode of its estimate and used the 95% credible intervals and the percentage of estimates excluding zero as a measure of the precision of the estimates. We then performed Mantel's test on each 'slice' of the posterior correlation matrices to test for overall differences in correlation structure between treatments. We also report the average difference in pairwise correlation between treatments,  $\Delta r$ , to provide a qualitative assessment of the magnitude of the difference in correlation between treatments. This value was calculated as the average of  $r_{\text{insecticide-treated}} - r_{\text{control}}$ . This is appropriate since correlation estimates for each treatment come from separate models. We based statistical inference on the following scale:  $0 < |\Delta r| < 0.2$ , no to low effect;  $0.2 < |\Delta r| < 0.5$ , medium effect;  $|\Delta r| > 0.5$ , strong effect (Nakagawa & Cuthill 2007).

## Results

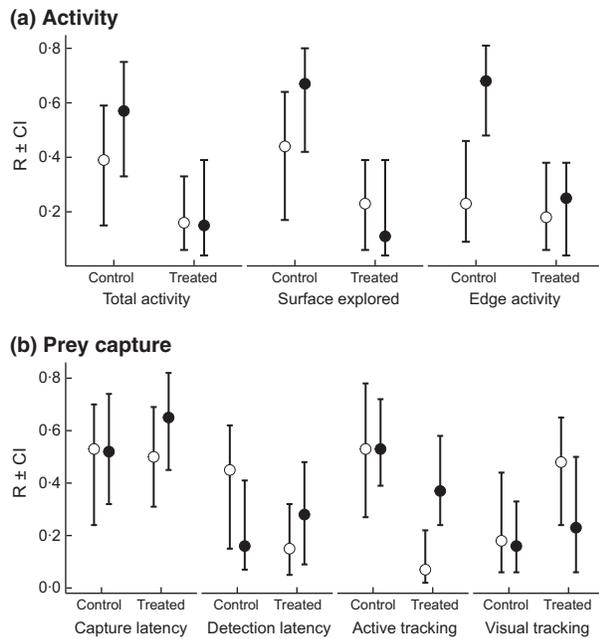
### EFFECTS ON AVERAGE BEHAVIOURS

We found no evidence for an effect of phosmet on average behaviour between control and treated groups. Estimates of the treatment  $\times$  test phase interaction were  $< 1$  and showed substantial overlap of their CIs with zero (Table S3, Supporting information). Other sources of variation such as sex for activity traits and population for prey capture traits had significant effects and were included as fixed effects in all subsequent models to provide unbiased estimates of repeatability and behavioural correlations.

### EFFECTS ON BEHAVIOURAL VARIANCE

Repeatability of behavioural traits ranged from 0.07 to 0.68 with strong differences detected between treatments and sex (Fig. 2, Tables S4 and S5). Trait repeatability decreased by an average of 23% in the insecticide-exposed group, as indicated by the average difference in repeatability among treatments, (posterior mode [95% CI],  $\Delta R = -0.23$  [-0.48; 0.07], negative values indicates lower repeatability in the insecticide-treated group). Males showed a pronounced decline in the repeatability of all activity traits in the insecticide-treated group (Fig. 2, Table S5). In contrast, prey capture repeatability was primarily affected in females.

Males showed stronger evidence for a variability increase scenario than a collapse in behavioural difference.



**Fig. 2.** Extent of personality differences (i.e. repeatability) compared across control and insecticide-treated individuals and sex (females: white circles, males: dark circles) for (a) activity and (b) prey capture traits. Values represent posterior modes  $\pm$ 95% credible interval.

Between-individual variance decreased simultaneously with an increase in within-individual variance but the magnitude of the effect was stronger for the within-individual variance component (posterior mode range,  $\Delta V_{BI} = [-0.37; -0.41]$ ;  $\Delta V_{WI} = [0.45; 0.95]$ ). Insecticide-treated females followed both the variability increase and behavioural difference amplification scenarios depending on the prey capture trait considered. Females exposed to the insecticide increased their within-individual variation in active tracking ( $\Delta V_{BI} = 0.07 [-0.10; 0.58]$ ;  $\Delta V_{WI} = 2.46 [1.66; 3.21]$ ), while increasing their between-individual variation in visual tracking ( $\Delta V_{BI} = 0.27 [-0.02; 0.79]$ ;  $\Delta V_{WI} = 0.09 [-0.32; 0.39]$ ) (Fig. 3).

#### EFFECTS ON BEHAVIOURAL CORRELATIONS

We found strong sex-specific differences in the way behavioural correlations responded to insecticide exposure (Fig 4). Females exposed to the insecticide showed the most evidence of a collapse of the activity-prey capture syndrome (Fig. 1b) (Mantel test  $r$  [95% CI] indicating the overall correlation between behavioural correlation matrices of the control and insecticide-treated groups, females – between-individuals:  $r = 0.31 [-0.08; 0.77]$ , within-individuals:  $r = 0.77 [0.57; 0.92]$ ; males – between-individuals:  $r = 0.59 [0.12; 0.88]$ , within-individuals:  $r = 0.78 [0.53; 0.93]$ ).

The decrease in between-individual correlations in insecticide-exposed females was mostly the result of a weakening of correlations between activity and prey capture traits. Females that were more active on average tended to

have higher capture latencies and spend a higher proportion of their time actively pursuing prey. Such tendencies were not noticed in the insecticide-treated group (total activity-capture latency:  $r_{BI} = 0.33 [-0.08; 0.63]$ ,  $\Delta r_{BI} = -0.29$ ; total activity-active tracking:  $r_{BI} = 0.40 [-0.11; 0.62]$ ,  $\Delta r_{BI} = -0.34$ ). Investigation of pair-wise differences in correlation estimates also indicated a sign inversion of certain within-individual correlations (Table S6) (total activity-active tracking:  $r_{WI} = -0.28 [-0.55; 0.05]$ ,  $\Delta r_{WI} = 0.46$ ; edge activity-active tracking:  $r_{WI} = -0.27 [-0.50; 0.08]$ ,  $\Delta r_{WI} = 0.43$ ). In the absence of insecticide exposure, females who increased their activity in between test phases lowered the amount of time spent actively pursuing prey, while insecticide-exposed females showed the reverse trend.

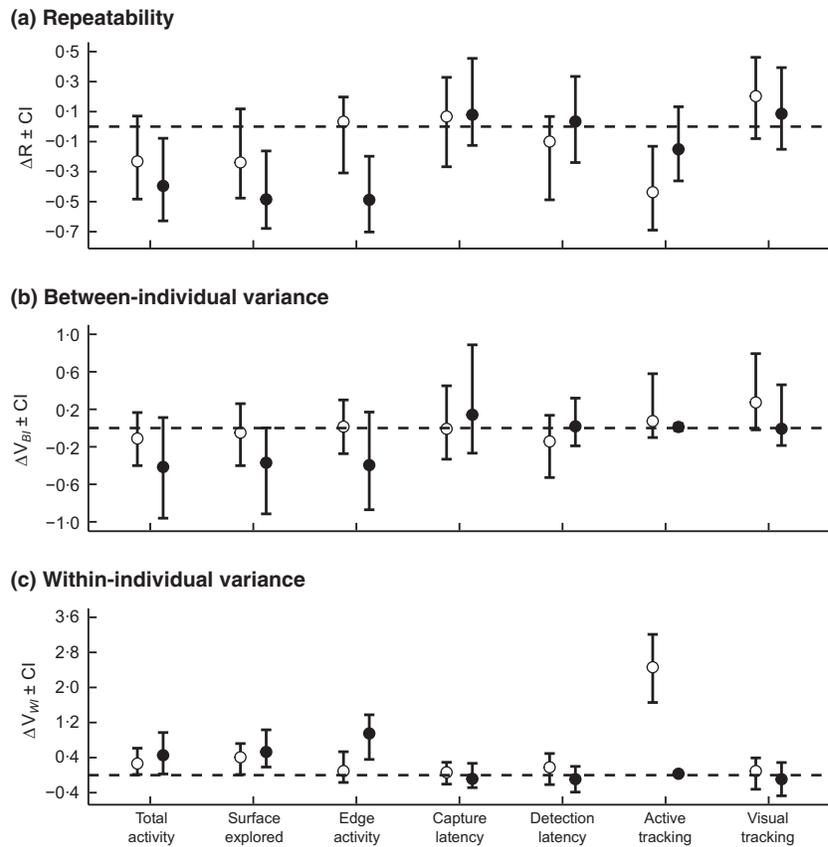
Males did not show evidence of a collapse of the activity-prey capture syndrome as a result of insecticide exposure. They did show, however, subtle changes in between-individual correlations among activity traits, suggesting insecticide exposure changed the way males explored their environment. Control individuals that traveled further into the arena also tended to explore a greater surface and this pattern weakened in insecticide-treated males (total activity-surface explored:  $r_{BI} = 0.73 [0.43; 0.84]$ ,  $\Delta r_{BI} = -0.29$ ; total activity-edge activity: control,  $r_{BI} = 0.73 [0.41; 0.82]$ ,  $\Delta r_{BI} = -0.27$ ). Contrary with females, we did not notice any notable difference in patterns of behavioural correlations at the within-individual level ( $\Delta r_{WI} \leq 0.20$ ).

#### Discussion

Our objective was to test sublethal insecticidal exposure as a potential disrupter of personality expression in the jumping spider *E. militaris*. By exposing spiders to an ecologically relevant concentration of insecticide, we found that sublethal effects can occur at the individual level even in the absence of a population-wide shift in average behaviour. We detected substantial differences in repeatability and in the correlation between personality traits expressed among insecticide-exposed and non-exposed groups. We also found that sex had a strong influence on which specific traits or correlation was most likely to be altered, suggesting males and females differ in the way they cope with insecticide exposure.

#### SEX-SPECIFIC DIFFERENCES IN INDIVIDUAL RESPONSE TO INSECTICIDE EXPOSURE

Our study shows that sublethal exposure to an insecticide produces complex effects on the expression of personality traits and their correlations. Previous work conducted with *E. militaris*, showed evidence that populations from insecticide-free and insecticide-treated apple orchards differed in the overall architecture of their behavioural syndromes (Royauté, Buddle & Vincent 2014). In the present study, we were able to investigate these results further by directly manipulating individuals' insecticide exposure level. As a



**Fig. 3.** Difference in repeatability (a), between (b) and within-individual variance components (c) compared across treatment groups and sex (females: white circles, males: dark circles). Values represent posterior modes  $\pm 95\%$  credible interval and are expressed as deviation from the control group (i.e. positive values indicate an increase in variance in the insecticide-treated group relative to the control).

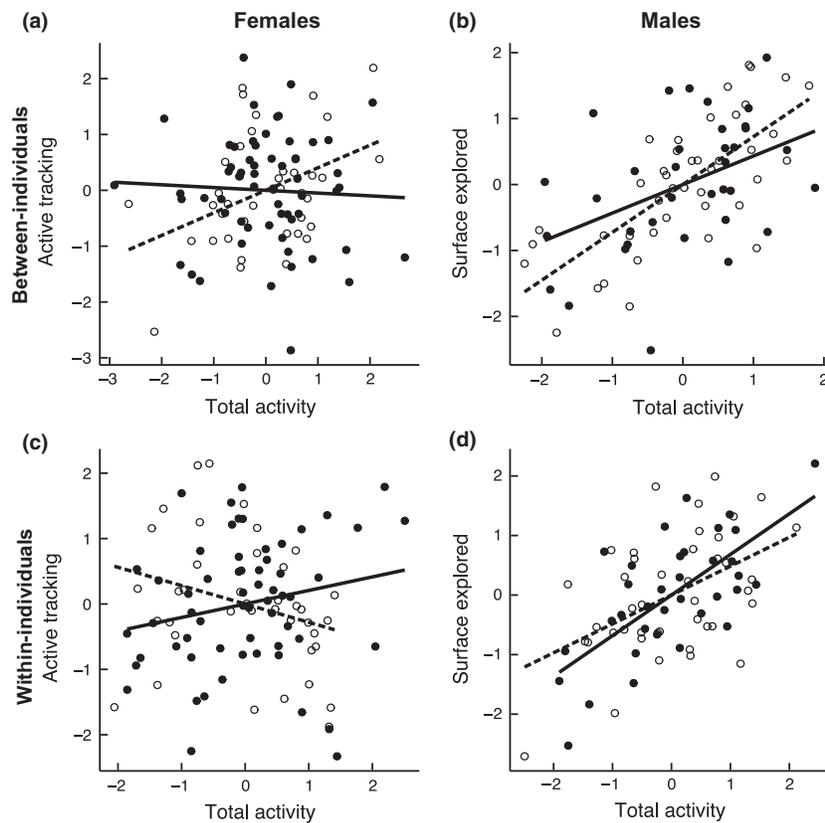
result, the repeatability of personality traits declined by an average of 23% in the insecticide-exposed group, and these differences were mostly mediated by an increase in within-individual variance, thus supporting the variability increase hypothesis.

Interestingly, while alterations of behavioural repeatability between treatments occurred for five out of the seven traits considered, males and females showed important differences in which type of trait was most affected and in which direction. Females showed strongest differences in the repeatability of prey capture behaviours between treatments, with insecticidal exposure either increasing an individual's variability (i.e. active tracking) or amplifying between-individual differences (i.e. visual tracking). Males, in contrast, showed an increased variability for all activity traits while prey capture traits were largely unaffected. These sex-specific differences were also maintained when investigating how behavioural correlations responded to insecticide exposure. We found more support for a collapse of the activity-prey capture syndrome in females than in males. Inactive females were quicker to capture prey in the absence of insecticide exposure, a tendency no longer expressed in the treated group. Males did not show evidence for such an activity-prey capture syndrome, even in the control group, but showed a decrease in correlation strength among all activity traits. Taken together, our results suggest that insecticide-exposed individuals showed a strong departure from their personality tendencies. In other words, an active spider becoming 'under the

influence' of insecticides may no longer behave as active as it would otherwise. These effects were expressed differently among sexes as insecticide exposure was more likely to cause changes in female hunting strategies while male exploration was altered irrespectively of prey capture.

Several mechanisms are likely to contribute to these patterns. Personality traits are underpinned by a variety of physiological mechanisms, including differences in metabolic rates, immune responses and wiring of neuroendocrine pathways (Sih, Bell & Johnson 2004; Careau *et al.* 2008; Niemelä *et al.* 2012). Since organophosphates disrupt the activity of acetylcholinesterase, differences in acetylcholine receptor density among individuals would likely affect the sensitivity of individual to a given insecticide dose. Another possibility could be that some individuals experience reduced immune function as a result of insecticide exposure (Desneux, Decourtye & Delpuech 2007). This could result in changes in energy budgets and ultimately alter the energy allocation priorities of individuals.

The sublethal toxicity of organophosphate on beneficial arthropods has been found to affect many behaviours related to mobility and locomotion, with sexual differences reported in some cases (Tietjen & Cady 2007; Hanna & Hanna 2013). However, such studies tend to focus on shifts in average behavioural or physiological response. In contrast, our results suggest that sublethal effects may still be present even when population-wide behavioural shifts remain undetected. This result could have important



**Fig. 4.** Difference in behavioural correlations between control (white circles) and treated groups (black circles) for between (a,b) and within-individual levels (c,d). Plots represent pairwise correlation with highest difference in correlation estimates between treatments ( $\Delta r$ ) and sex (females: a,c, males: b,d). Values were simulated from the correlation matrices obtained through multivariate mixed models. Lines represent least square regressions for control (dotted lines) and insecticide-treated groups (solid lines).

repercussions on evolutionary and ecological processes, which we outline below.

#### EVOLUTIONARY AND ECOLOGICAL IMPLICATIONS

Personality traits are often adaptive and are related to individual differences in physiology, life-history trajectories and fitness (Koolhaas *et al.* 1999; Dingemanse & Réale 2005; Réale *et al.* 2010). By reducing the amount of personality differences expressed in certain traits, sublethal exposure to insecticides can cause insidious effects on an individual's fitness, even in absence of a population-wide response. For example, by altering exploration and foraging strategies, insecticidal exposure could affect an individual's capacity to capture prey or to disperse into suitable habitats. In many spider species, prey capture efficiency is part of a broader 'aggression syndrome' involving aggressive tendencies against conspecific and antipredator tendencies (Riechert & Hedrick 1993; Johnson & Sih 2005, 2007; Pruitt, Riechert & Jones 2008; reviewed in Pruitt & Riechert 2012). Such 'packages' of traits often share similar physiological underpinnings (Sih *et al.* 2004). Any insecticide compound affecting behavioural differences in one trait is likely to profoundly affect all related traits. Ultimately, such alterations may result in changes in an individual's life-history strategy.

Individual-level effects could also precede population-wide effects, especially in the case of chronic exposure. This scenario is most likely if individuals differ in their sensitivity to the insecticide. More sensitive individuals would

experience behavioural shifts sooner than the rest of the population and thus experience reduced fitness. Therefore, monitoring effects of insecticides on trait variance may provide a better estimate of early disruption of behavioural traits.

By uncoupling behaviours related to activity and prey capture in arthropod predators, insecticides exposure may cause cascading effects on prey-population dynamics. Personality differences are known to influence the strength of trophic cascades as certain individuals can contribute more strongly to the top-down control of prey species (Griffen, Toscano & Gatto 2012; Toscano & Griffen 2014). In agricultural landscapes frequently exposed to insecticides, effects on the overall architecture of personality differences may therefore reduce the environmental services provided by biocontrol agents.

#### TOWARDS AN ECOTOXICOLOGY OF INDIVIDUAL DIFFERENCES

Ecotoxicological studies focusing on effects of contaminants on behavioural differences remain scarce and have been mostly restricted to aquatic systems. For example, exposure to heavy metals can decrease the repeatability of critical swimming speed in fathead minnows (Kolok, Plaisance & Abdelghani 1998), and exposure to anxiolytic drugs resulted in the emergence of correlations between previously uncorrelated personality traits in perch (Brodin *et al.* 2013). Change in personality expression resulting from contaminant exposure is most likely a widespread phenomenon

occurring in multiple types of ecosystems independently of contaminant class. Yet, these types of effects remain widely understudied in terrestrial systems (but see Morales *et al.* 2013 for a recent example).

Our study addresses a significant gap in our knowledge by revealing the complex ways by which multiple behavioural functions can be altered by insecticide exposure. We suggest that, whenever possible, longitudinal studies should be implemented to monitor the effects of insecticides over time at the individual level. While longitudinal studies have been included with great effect in the past, they typically treat repeated measures on individuals as a nuisance parameter (e.g. Gill & Raine 2014). We favour a more integrative approach where effects of contaminants on both average and (co)variance among behaviours can be fully explored. We believe such an approach will expand our understanding of how sublethal effects of insecticides and other types of contaminants operate and will generate more robust predictions for population persistence.

Finally, we investigated only one dose of a very specific compound. In field conditions, sublethal effects may be even more severe. For example, insecticidal exposure and accumulation may be mediated by personality differences. Individuals with higher activity may explore larger areas and be more frequently in contact with insecticide residues. An important way forward is to consider that personality differences may affect insecticide exposure and accumulation, and the received insecticide dose may in turn affect personality expression in a feedback loop (Montiglio & Royauté 2014). It is also important to consider the interactions between multiple insecticidal compounds, since different insecticides are used to control different types of pests. Such 'cocktails' often act in synergy, having drastically different effects than exposure to each compound separately (Kortenkamp 2007). These types of interaction can be extended to study various classes of anthropogenic contaminants and model different paths of effects, allowing better predictions of the consequences of exposure to anthropogenic contaminants.

Our results point to several key conclusions, relevant to both basic and applied perspectives. First, assessing the effects of insecticides solely on differences in average behaviour between insecticide-exposed and control groups is somewhat limited, as it cannot account for effects at the individual level and thus risk underestimating the toxicity of these compounds. Second, using the multivariate approach favoured by behavioural syndromes studies can generate considerable more insights into the specific ways behaviours are altered by insecticide stress. Finally, our results can be applied in bioassay procedures by incorporating behavioural variation in dose-response ecotoxicological studies. Our research calls attention on a poorly studied source of behavioural variation: the presence of neurotoxic insecticides in the environment and shows that these compounds can significantly affect personality expression in an important arthropod predator.

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## Data accessibility

Data deposited in the Dryad Digital Repository: <http://dx.doi.org/10.5061/dryad.4s90s>, (Royauté, Buddle & Vincent 2015).

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## Supporting Information

Additional Supporting information may be found in the online version of this article:

- Appendix S1.** Determination of a sublethal dose of phosmet.
- Appendix S2.** Model specifications for exploratory analyses of activity and prey capture behaviours.
- Appendix S3.** Model specifications for comparing repeatability and behavioural correlations across treatments.
- Fig. S1.** Results of the exploratory analysis for activity and prey capture.
- Table S1.** Between and within-individual correlations for activity and prey capture variables.
- Table S2.** Correlation of behavioural traits with body condition and body-size.
- Table S3.** Effect of insecticidal exposure and other sources of variation on behavioural traits.
- Table S4.** Between ( $V_{BI}$ ) and within-individual ( $V_{WI}$ ) variance components compared across treatments.
- Table S5.** Repeatability of behavioural traits compared between sex and treatments.
- Table S6.** Between and within-individual correlations of behavioural traits compared across treatment groups.

# EPA proposes stricter restricted-use pesticide certification standards

Thursday, Aug 6, 2015 @ 1:43pm By EP News Wire Reports



The U.S. Environmental Protection Agency (EPA) introduced a draft regulation on Wednesday that would put stricter limits on those certified to use “restricted-use” pesticides, with the goal of increased supervision and oversight and greater consistency across the states.

Restricted-use pesticides require special handling and are not available to the general public. Anyone who wants to use them must be a certified applicator or working under the direct supervision of one. The proposed regulation would further restrict the use to those 18 years or older, and make the standards for certification stricter. It also would require renewal every three years.

These revisions also would make it easier for companies that operate in several states, as the current system requires them to demonstrate safe usage of the pesticides to each state agency to garner state-specific licenses.

“We are committed to keeping our communities safe, protecting our environment, and protecting workers and their families,” EPA Assistant Administrator for the Office of Chemical Safety and Pollution Prevention Jim Jones said. “By improving training and certification, those who apply these restricted-use pesticides will have better knowledge and ability to use these pesticides safely.”

- See more at: <http://epnewswire.com/stories/510631983-epa-proposes-strict-restricted-use-pesticide-certification-standards#sthash.Kr72JoxN.dpuf>

# EPA seeks public comment on new pesticide risk assessment guidance document

[Wednesday, Aug 5, 2015 @ 4:44pm](#) By EP News Wire Reports



The Environmental Protection Agency (EPA) is seeking public comment on a drafted document that would guide the screening level analysis of pesticide chemicals to judge their toxicity, according to a release issued on July 30.

The guidance document, “Pesticide Cumulative Risk Assessment: Framework for Screening Analysis,” gives information on how the EPA screens available data to determine which pesticide groups may be toxic -- presenting what it calls a cumulative risk -- and therefore require further testing. The guidance document stands to make the EPA’s screening process more efficient, allowing the agency to efficiently prioritize its assessments.

According to the Federal Food, Drug and Cosmetic Act, the EPA must consider available information on the cumulative effects of pesticides that have a common mechanism of toxicity in an efficient use of resources, which this guidance document seeks to allow. Previously, these assessments were resource intensive and required scientific analysis of large data sets.

In its release, the EPA included an example copy of the assessment for abamectin and emamectin benzoate, which were determined to share a similar toxicological profile, and therefore could present an aggregate risk, meaning one derived from exposure to the same chemical in multiple pathways. Using conservative exposure assumptions, the agency developed a screening level cumulative analysis.

The public comment period for this document will close on Aug. 28, 2015.

EPA testimony statements are available at [www.epa.gov](http://www.epa.gov).

- See more at: <http://epnewswire.com/stories/510631803-epa-seeks-public-comment-on#sthash.UrU1tWeA.dpuf>

# Blueberries sprayed or unsprayed? Consider pollinators, field workers (<http://bangordailynews.com/2015/08/13/opinion/blueberries-sprayed-or-unsprayed-consider-the-pollinators-and-people-in-the-field/>)

By Jody Spear, Special to the BDN

Posted Aug. 13, 2015, at 9:59 a.m.

Do you eat blueberries from the commercial market, sprayed with pesticides, or do you pay a premium for unsprayed, organic berries?

The annual commercial blueberry harvest is upon us, and a question framed in this way would prompt inquiring-minded consumers to learn what pesticides ([http://www.google.com/url?q=http%3A%2F%2Fwww.beyondpesticides.org%2Fgateway%2Findex.php&sa=D&sz=1&usg=AFQjCNEzwwqsm3xgK\\_m\\_-GjvAhAKLYvoAuA](http://www.google.com/url?q=http%3A%2F%2Fwww.beyondpesticides.org%2Fgateway%2Findex.php&sa=D&sz=1&usg=AFQjCNEzwwqsm3xgK_m_-GjvAhAKLYvoAuA)) have been applied to blueberry crops to kill insects, weeds and fungal disease, and what specific health hazards accompany them. The barrage of chemicals begins in April and continues into the fall with regular spraying of fungicides, herbicides and insecticides, saturating fields for maximum yield of berries — an agribusiness commodity that in no sense is “wild.” Every year, people who live, work and play around the barrens and drive on roadways along them are sickened during that time, as the poisons inevitably drift.

If you ask growers what they are using to eradicate, for example, insect pests (<http://www.google.com/url?q=http%3A%2F%2Fumaine.edu%2Fblueberries%2Ffactsheets%2Finsects%2F209-insect-control-guide-for-wild-blueberries%2F&sa=D&sz=1&usg=AFQjCNEyEsukXGQl9TZ4NFzAhCanR6NoQ>) — and, yes, they do have to tell you — they likely will give brand names for compounds that include phosmet (Imidan), zeta-cypermethrin (Mustang Max), carbaryl (Sevin) and imidacloprid (Admire). You then can look them up on an index at BeyondPesticides.org (<http://www.google.com/url?q=http%3A%2F%2Fwww.beyondpesticides.org%2F&sa=D&sz=1&usg=AFQjCNGJy12A2aI3t8U4xv8IjtKYq3ITZA>) and find that the four examples cited — all designed to attack the nervous system — fall into the following classes, respectively: organophosphates, synthetic pyrethroids, carbamates and neonicotinoids. The last of these, a group of systemic insecticides ([http://www.google.com/url?q=http%3A%2F%2Fwww.disasterinthemaking.com%2Fabout\\_the\\_author.html&sa=D&sz=1&usg=AFQjCNGQ7nFNZRWBW6ru2nLeY-Cj2jXDBg](http://www.google.com/url?q=http%3A%2F%2Fwww.disasterinthemaking.com%2Fabout_the_author.html&sa=D&sz=1&usg=AFQjCNGQ7nFNZRWBW6ru2nLeY-Cj2jXDBg)), is implicated in Colony Collapse Disorder, leading to disastrous losses of the bees on which we depend to pollinate food crops.

Also systemic, meaning it is in every cell of the plant and cannot be washed off, is cyantraniliprole (Exirel), recently added to UMaine Cooperative Extension’s blueberry pesticides list. Its EPA approval earlier this year is being challenged in a lawsuit brought by the Center for Biological Diversity ([http://www.google.com/url?q=http%3A%2F%2Fwww.biologicaldiversity.org%2Fnews%2Fpress\\_releases%2F2014%2Fpesticides-03-24-2014.html&sa=D&sz=1&usg=AFQjCNGS7imjmIdqBZSMoIgvWTKv9xZmSA](http://www.google.com/url?q=http%3A%2F%2Fwww.biologicaldiversity.org%2Fnews%2Fpress_releases%2F2014%2Fpesticides-03-24-2014.html&sa=D&sz=1&usg=AFQjCNGS7imjmIdqBZSMoIgvWTKv9xZmSA)) and other groups because provisions of the Endangered Species Act were ignored in the registration process. Similar to other insecticides, this new one kills fish, bees, birds and butterflies, as well as the target pest. We must protest the use of yet another systemic pesticide in Maine.

When growers disclose the herbicides (<http://www.google.com/url?q=http%3A%2F%2Fumaine.edu%2Fblueberries%2Ffactsheets%2Fweeds%2F236-weed-management-in-wild-blueberry-fields%2F&sa=D&sz=1&usg=AFQjCNExKR3KV5hm19CD6vIp8eGGcxrNeQ>) they are blanketing over the barrens to eliminate every last goldenrod, sweet fern and bunchberry, you will be able to investigate further and learn that hexazinone (Velossa, Velpar) and diuron (Parrot, Karmex) are a continuing threat to groundwater and wells in Maine — though other countries have banned them because of their persistence and mobility in soil and water and because they pose endocrine-disrupting and cancer threats. These chemicals are too toxic for widespread use on “weeds” that instead can be managed by hand-pulling and mulching or can be left alone to provide essential food sources for native bees. Herbicide spraying sets off a deadly cascade: resistant weeds requiring more applications of still more lethal chemicals. The same is true for insects, which build immunity after repeated sprayings.

Monsanto, Dow and other chemical manufacturers will insist their products are safe, having been approved by EPA. But you need only look at the label for a given pesticide to see “danger” and warnings: “Do not apply near water,” “Do not apply when bees are foraging,” “Do not allow spray to touch berries.” All cautions routinely are disregarded, and “emergency” exemptions are issued regularly by state regulators for unapproved chemicals ([http://www.google.com/url?q=http%3A%2F%2Fwww.mofga.org%2FPrograms%2FPublicPolicyInitiatives%2FPesticidesAction%2FPesticidesQuiz%2Ftabid%2F527%2FDefault.aspx&sa=D&sntz=1&usg=AFQjCNEEOV\\_Iev3UCYMCcaZZtAHSpHkvXg](http://www.google.com/url?q=http%3A%2F%2Fwww.mofga.org%2FPrograms%2FPublicPolicyInitiatives%2FPesticidesAction%2FPesticidesQuiz%2Ftabid%2F527%2FDefault.aspx&sa=D&sntz=1&usg=AFQjCNEEOV_Iev3UCYMCcaZZtAHSpHkvXg)).

Several protections we have fought for in recent years — a notification registry (<http://www.google.com/url?q=http%3A%2F%2Fwww.mofga.org%2FPublications%2FMaineOrganicFarmerGardener%2FSummer1998%2FTisherEditorial%2Ftabid%2F2;sa=D&sntz=1&usg=AFQjCNGkcbf2IBAYSaHcdHukaADCIVrhQ>) and a ban on aerial and airblast spraying, for example — have been denied in Augusta. Until those initiatives are back on track, the best options left to consumers are filing complaints with local and state authorities — health departments and the pesticide-control board (<http://www.google.com/url?q=http%3A%2F%2Fwww.maine.gov%2Fdacf%2Fphp%2Fpesticides%2Findex.shtm&sa=D&sntz=1&usg=AFQjCNHQVd5eAJYVyTvnWIQ-fBuhCiUtTQ>) — whenever pesticide poisoning leads to medical problems, transient or long term; passing ordinances, town by town, restricting agricultural pesticide applications; and buying only unsprayed produce.

Organic blueberries — a rich source of antioxidants, as long as they are organic — are a healthy alternative to commercial berries with dozens of toxic chemicals sprayed on them. So the question comes down to personal health and protection of bees, birds, fish and butterflies. Is that not more important than expanding the profit margins of a few blueberry barons and crop dusters?

*Jody Spear is an editor and writer who lives in Harborside.*

<http://bangordailynews.com/2015/08/13/opinion/blueberries-sprayed-or-unsprayed-consider-the-pollinators-and-people-in-the-field/> (<http://bangordailynews.com/2015/08/13/opinion/blueberries-sprayed-or-unsprayed-consider-the-pollinators-and-people-in-the-field/>) printed on August 20, 2015

# Maine asking residents to sign up to dispose of pesticides

 [pressherald.com/2015/08/16/maine-asking-residents-to-sign-up-to-dispose-of-pesticides/](http://pressherald.com/2015/08/16/maine-asking-residents-to-sign-up-to-dispose-of-pesticides/)

The Associated Press

AUGUSTA — Maine officials are asking residents to sign up for a program to safely dispose of banned pesticides and unusable chemicals.

The program is free and available to owners of homes and family-owned farms and greenhouses. Residents must [register](#) by Sept. 25. Collection sites are set for Presque Isle, Bangor, Augusta and Portland in October.

Search photos available for purchase: [Photo Store](#) →

The Maine Department of Agriculture, Conservation and Forestry's Board of Pesticides Control and the Maine Department of Environmental Protection are running the program. Conservation department Commissioner Walt Whitcomb says the program is important to keep potentially harmful chemicals from contaminating land and water resources, such as drinking water.

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## Connections

# Free disposal of banned, unusable pesticides offered



[Connections](#) | Thursday, August 13, 2015

AUGUSTA — This October, the Maine Department of Agriculture, Conservation and Forestry's Board of Pesticides Control will team up with the Maine Department of Environmental Protection to help Mainers dispose of banned pesticides or unusable pesticides.

This free disposal program is open to homeowners, family-owned farms and greenhouses. Collection will occur at sites located in Presque Isle, Bangor, Augusta and Portland. To qualify, people must register by Sept. 25.

Gov. Paul R. LePage is urging Mainers to take advantage of this opportunity to protect the environment and save money through this once a year collection event that highlights cooperation between government agencies. "This is an opportunity for Mainers to dispose of unusable pesticides properly and at no expense," said Governor LePage. "Through consolidated collections at four central locations and the use of in-house resources and expertise, disposal costs are reduced to about \$2 per pound. That is a great value for Maine taxpayers lowers costs and helps protect the environment."

It's not unusual for homes and farms to have unintentional hazardous waste — banned pesticides or pesticides that have become caked, frozen, or otherwise rendered unusable — sitting around in basements, garages, or barns. These chemicals can be difficult and expensive to dispose of; DACF Commissioner Walt Whitcomb stressed the importance of proper disposal of banned or unwanted pesticides.

"It's important for the protection of public, wildlife, and environmental health that these products are dealt with properly and not thrown in the trash or down the drain, where they can contaminate land and water resources, including drinking water," said Commissioner Whitcomb.

"People holding these chemicals should contact the BPC as soon as possible to register for the October collection."

“Providing Maine residents with an easy and no cost solution to properly dispose of pesticides gives Mainers the unique opportunity to make a positive impact on our environment and public health,” said Maine DEP Commissioner Patricia Aho. “The collection events cover the State and are held in Presque Isle, Bangor, Augusta and Portland, providing accessible methods of collection and future disposal.”

The collected chemicals go to out-of-state disposal facilities licensed by the federal Environmental Protection Agency where they are incinerated or reprocessed.

Registration is mandatory — drop-ins are not permitted.

FMI, register: <http://www.thinkfirstspraylast.org>, or call 207-287-2731.

FMI: <http://www.thinkfirstspraylast.org>, <http://www.maine.gov/dep>.

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# Mainers Urged to Sign Up for Free Disposal of Banned, Unusable Pesticides

August 13th, 2015 | by Kimberly Gaudin

AUGUSTA — This October, the Maine Department of Agriculture, Conservation and Forestry (DACF) Board of Pesticides Control (BPC) will team up with the Maine Department of Environmental Protection (DEP) to help Mainers dispose of banned pesticides or unusable pesticides.

This free disposal program is open to homeowners, family-owned farms and greenhouses. Collection will occur at sites located in Presque Isle, Bangor, Augusta and Portland. To qualify, people must register by September 25, 2015.

Governor Paul R. LePage is urging Mainers to take advantage of this opportunity to protect the environment and save money through this once a year collection event that highlights cooperation between government agencies. "This is an opportunity for Mainers to dispose of unusable pesticides properly and at no expense," said Governor LePage. "Through consolidated collections at four central locations and the use of in-house resources and expertise, disposal costs are reduced to about \$2 per pound. That is a great value for Maine taxpayers lowers costs and helps protect the environment."

It's not unusual for homes and farms to have unintentional hazardous waste—banned pesticides or pesticides that have become caked, frozen, or otherwise rendered unusable—sitting around in basements, garages, or barns. These chemicals can be difficult and expensive to dispose of; DACF Commissioner Walt Whitcomb stressed the importance of proper disposal of banned or unwanted pesticides.

"It's important for the protection of public, wildlife, and environmental health that these products are dealt with properly and not thrown in the trash or down the drain, where they can contaminate land and water resources, including drinking water," said Commissioner Whitcomb. "People holding these chemicals should contact the BPC as soon as possible to register for the October collection."

"Providing Maine residents with an easy and no cost solution to properly dispose of pesticides gives Mainers the unique opportunity to make a positive impact on our environment and public health," said Maine DEP Commissioner Patricia Aho. "The collection

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events cover the State and are held in Presque Isle, Bangor, Augusta and Portland, providing accessible methods of collection and future disposal.”

The collected chemicals go to out-of-state disposal facilities licensed by the federal Environmental Protection Agency where they are incinerated or reprocessed.

Registration by September 25, 2015, is mandatory—drop-ins are not permitted. To register, get details, and learn important information about the temporary storage and transportation of obsolete pesticides, go to the BPC Web site at <http://www.thinkfirstspraylast.org> or call 207-287-2731.

The Maine Obsolete Pesticides Collection Program, jointly sponsored by the BPC and DEP, and paid for entirely through pesticide product registration fees, has kept more than 90 tons of pesticides out of the waste stream since its start in 1982.

For more information on the Maine Board of Pesticides Control, go to: <http://www.thinkfirstspraylast.org> (<http://www.thinkfirstspraylast.org>)  
For more information on the Maine Department of Environmental Protection, go to: <http://www.maine.gov/dep> (<http://www.maine.gov/dep>)

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