



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

January 14, 2015

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

AGENDA

3:00 – 4:00 PM BOARD MEETING

4:00 – 5:00 PM OPEN FORUM

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

1. Introductions of Board and Staff
2. Minutes of the December 5, 2014 Board Meeting

Presentation By: Henry Jennings
Director

Action Needed: Amend and/or Approve

3. Request from Maine Migrant Health Program and Eastern Maine Development Corporation to Help Support a Worker Safety Training Program for Summer 2015

Since 1995, the Board has supported a Migrant and Seasonal Farmworker Safety Education program. During 2014, 274 individuals received Worker Protection Standard training, 218 individuals received take-home exposure training, and 278 received heat stress training. The Maine Migrant Health Program and Eastern Maine Development Corporation are proposing to provide one health-and-safety outreach worker training during the 2015 agricultural season. Funding to support this effort is being requested in the same amount as last year and funding has been accounted for in the Board's FY'15 budget

Presentation By: Chris Huh, Program Manager, Farmworkers Jobs Program,
Eastern Maine Development Corporation
Elizabeth Charles, Enabling Services Coordinator, Maine Migrant Health
Program

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

4. United Phosphorus, Inc., Request to Renew Its FIFRA Section 24(c), Special Local Need Registration for Asulox[®] Herbicide (EPA# 70506-139) for Control of Bracken Fern on Low Bush Blueberries

At its November 5, 2010, meeting, the Board approved a Special Local Needs [24(c)] registration for the use of Asulox Herbicide (EPA# 70506-139) for bracken fern control in wild blueberries. This label allows for spot treatment of bracken fern only during the non-bearing year. That registration expired November 5, 2014; University of Maine Blueberry Extension Specialist Dr. David Yarborough, and the product registrant, United Phosphorus, Inc. are requesting a five-year renewal of the 24(c) registration.

Presentations By: Mary Tomlinson
Pesticides Registrar and Water Quality Specialist

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

5. Consideration of a Staff Request to Refer an Enforcement Matter to the Office of the Attorney General

The Enforcement Protocol describes the Board's recommended procedures for resolving violations of pesticide law of sufficient public consequence to warrant a formal enforcement response. In matters where the alleged violator and the Board staff cannot agree on a resolution, the protocol specifies that the case be placed on a meeting agenda for Board consideration. The staff is presenting a case in which an unlicensed company advertised for and conducted mosquito control services.

Presentation By: Raymond Connors
Manager of Compliance

Action Needed: Determine Appropriate Enforcement Response

6. Consideration of a Consent Agreement with Charles A. Dean Hospital of Greenville

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

Presentation By: Raymond Connors
Manager of Compliance

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

7. Consideration of a Consent Agreement with Dan Davis of Corinna

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

Presentation By: Raymond Connors
Manager of Compliance

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

8. Update on Water Quality Monitoring Activities

7 M.R.S. § 607-A, Section 2-A, directs the Board to conduct water residue surveys, for both ground and surface water, in order to prepare profiles of the kinds and amounts of pesticides present. Over the last 12 months, the Board's staff has been involved in both ground water sampling and marine sediment sampling. The staff will update the Board on those activities and the sampling results.

Presentations By: Mary Tomlinson
Pesticides Registrar and Water Quality Specialist

Action Needed: None – Informational Only

9. Update on Managed Pollinator Protection Plans

At the December 5, 2014, meeting, the staff provided the Board with an overview of Managed Pollinator Protection Plans which are being promoted by the federal Environmental Protection Agency (EPA) as part of its overall strategy for reducing pesticide risks to pollinators. EPA guidelines had not yet been published, but states were being encouraged to start working on state-specific plans. After some discussion the Board reached consensus that because pollinator protection consists of more than pesticides alone, the Department, or the Bureau of Agriculture, Food and Rural Resources should take the lead role on a state plan. The Board requested an update once the EPA guidance is publicly available.

Presentation By: Henry Jennings
Director

Action Needed: None – Informational Only

10. Other Old or New Business

a. Other?

11. Schedule of Future Meetings

March 13, April 24, and June 5, 2015, are tentative Board meeting dates. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

12. Adjourn

NOTES

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

Lisa Tapert, MPH
Executive Director

Cheryl K. Seymour, M.D.
Medical Director



Maine Migrant Health Program

Tel: (207) 622-9252

(888) 351-9634

Fax: (207) 626-7612

E-Mail: mmhp@mainemigrant.org

9 Green Street • P.O. Box 405 • Augusta, Maine 04332-0405

December 4, 2014

Mr. Henry Jennings
Maine Board of Pesticides Control
28 State House Station
Augusta, ME 04333-0028

Dear Mr. Jennings,

The Maine Migrant Health Program (MMHP) and Eastern Maine Development Corporation (EMDC) would like to inform the Maine Board of Pesticides Control of a continued collaborative effort to deliver EPA Worker Protection Standard (WPS) education to Maine's farmworkers during the 2015 harvest season.

The outcomes of MMHP's outreach has been possible through language proficiency, notably in Spanish and Creole, in serving the migrant population in Maine. Staff members with bilingual skills have been key in educating farmworkers about pesticide safety in the fields and risks of take home exposure in addition to heat stress concerns.

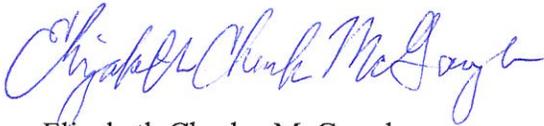
In 2014, through support of the Maine Board of Pesticides Control, MMHP and EMDC collaborated to hire a staff person to deliver WPS trainings throughout the state. This model of a single staff member allows for coverage in the southern/central region of the state during June, Aroostook county in July, and midcoast Maine and Washington county in August. During 2014, this individual offered WPS education to a total of 274 farmworkers across the state. The table below breaks down, by service category, important outcomes in 2014 completed by this staff person.

Worker Protection Standard Trainings	274
Take Home Exposure Trainings	218
Heat Stress Trainings	278
Total	770

For 2015, the Association of Farmworker Opportunity Programs (AFOP) has committed \$3,000 to EMDC and MMHP in support of WPS training. EMDC and MMHP plan to use these funds to recruit one summer temporary Pesticide Safety Training staff member who will provide direct services to farmworkers in Aroostook County, Midcoast, and DownEast areas of the state. To help support this position, we request from the Maine Board of Pesticides Control a contribution of \$3,500 which we would leverage with the funds from AFOP. Total funds would be used to directly support hourly wage of the staff person, as well as travel required to reach farmworkers, growers and partners. We request that the funding be made directly to MMHP.

We thank the Board for its past support and for considering this current proposal. To contact the Maine Migrant Health Program, you are welcome to email Elizabeth (echarles@mainemigrant.org) or call at 207-441-1633. For more information regarding Eastern Maine Development Corporation or the AFOP Health and Safety program, please feel free to contact Chris by email (chuh@emdc.org) or phone (207-610-1521). We look forward to meeting with the Board on January 14, 2015 to discuss this opportunity.

Best Regards,



Elizabeth Charles McGough
Enabling Services Coordinator
Maine Migrant Health Program



Christopher Huh, MPA
Program Manager
Farmworker Jobs Program
Eastern Maine Development Corporation



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WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

To: Board of Pesticides Control Members
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist
Re: Renewal of EPA Special Local Need (FIFRA, Section 24(c)) registration, ME-100003, for use of Asulox Herbicide, (EPA Reg. No. 70506-139) to control bracken fern in wild blueberries
Date: December 30, 2014

The Special Local Need (SLN) registration for Asulox Herbicide (EPA Reg. No. 70506-139) expired November 5, 2014. Dr. David Yarborough, blueberry specialist at the University of Maine Cooperative Extension requests renewal of this SLN. In the absence of other effective control measures for bracken fern, this product has proven to be effective, especially in newly cleared land and abandoned fields returned to production. The proposed SLN will expire January 31, 2020.

There are no changes to the SLN label and the application conditions, as listed below, remain the same.

- Application will be no more than once every other year.
- Application will be made during non-bearing years.
- Application will be via spot treatment.

Although the risk to surface and ground water may be reduced due to the application conditions listed above, water quality monitoring is recommended due to the potential for runoff and leaching. Asulam, the active ingredient, was not included in the 2011 or 2014 groundwater monitoring, but inclusion is being explored with Montana Analytical Laboratory for future monitoring.

Please review the following documents and let me know if you have any questions.

- Letter of support from David E. Yarborough, Ph.D., Wild Blueberry Specialist, Maine Cooperative Extension
- Board Memo, Status of Human Health Risk Assessments, from Lebel Hicks, Ph.D. DABT
- Asulox Herbicide proposed Maine SLN label
- Asulox Herbicide Section 3 label



December 8, 2014

Mary E Tomlinson
mary.e.tomlinson@maine.gov

Dear Mary:

I am writing to support the renewal of the State of Maine 24C label for the use of Asulox for bracken fern control in wild blueberries. Growers have indicated to me that there are no other effective measures for the control of bracken fern. The fern shades the wild blueberry and can reduce yields by 75% in areas where wild blueberries are fully shaded. Wild Blueberry growers have had use of Asulox as a 24C label in Maine since 2010 and have successfully used it for the control of bracken fern. However, with new land being cleared and previously abandoned fields being brought back into production there is still a need for this herbicide as it has unique mode of action and is very effective in controlling bracken fern.

Please let me know if you have any further questions on this request. You may contact me at the address below.

Sincerely,

A handwritten signature in black ink that reads 'David E. Yarborough'.

David E. Yarborough, PhD.
Blueberry Specialist
Professor of Horticulture
the University of Maine
5722 Deering Hall Rm. 414
Orono, ME 04469-5722

Phone: 207-581-2923
TollFree: 800-897-0757 x 1
Fax: 207-581-2941
EMail Davidy@Maine.edu



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WALTER E. WHITCOMB
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TO: Board Members
FROM: Lebelle Hicks PhD DABT
RE: Asulox 2015 Review

January 14, 2015

Status of Human Health Risk Assessments

The Board’s Medical Advisory committee reviewed asulam in 2002 the concerns were: cancer potential and developmental/ reproductive toxicological thyroid effects (BPC 2002a). The asulam is ranked as group “C” possible carcinogen due to thyroid and adrenal tumors in male rats. There is not sufficient dose response data to perform a cancer risk assessment and EPA’s Carcinogen Assessment Review Committee (CARC) concluded that a cancer risk assessment is not required (EPA 2002d). This evaluation has not been updated since 2002 (EPA 2012a).

Recently, EPA has issued two documents addressing data-call-ins (D-C-I) for toxicity tests in mammals. As of 2011 the D-C-Is for mammalian toxicity database were listed as acute and subchronic neurotoxicity, and an immunotoxicity study (EPA 2011y).

Between 2011 and 2013, EPA’s Hazard and Science Policy Council (HASPOC) reviewed a request from the registrant to waive the following D-C-Is (EPA 2013af). EPA took the following actions in 2013:

The neurological studies **were waived** because of the lack of neurotoxicity in the available toxicology studies for asulam, chemicals similar to asulam were not shown to be neurotoxic, and the thyroid gland, not the nervous system is the target organ of concern.

The developmental thyroid assay **is required** because the thyroid gland is the target organ for asulam-induced toxicity, toxicity to the thyroid glands manifests as increased thyroid weights and histopathological lesions following subchronic and chronic exposures in mice, rats and dogs and there is concern for the potential toxicity to the thyroid glands in the young because of the thyroid toxicity seen in adult animals and the influence of the thyroid glands on development of organ systems.

The subchronic dermal study **is required** in order to re-evaluate personal protective equipment requirements and to assess the level of thyroid toxicity following multiple dermal doses.

The subchronic inhalation toxicity study **is not required** because of the low volume and minor use characteristics, the fact that all occupational inhalation margins of exposure (MOE)s > 3,000 (EPA’s level of concern is 1,000 and MOE greater than the level of concern are acceptable) and the thyroid metrics from an inhalation toxicity study would not contribute to a more refined risk assessment (EPA 2013af).

Status of Environmental Fate and Toxicology Risk Assessments

The Environmental Fate and Effects Division (EFED) released the problem formulation for asulam in 2010 (EPA 2010ad). There are four environmental fate studies (aerobic and anaerobic soil metabolism, aerobic aquatic metabolism and terrestrial field dissipation).

Using the available environmental fate data EPA's EFED concluded that asulam is highly soluble and mobile indicating ground and surface water is of concern. The currently registered section 3 uses range from 7.306 lbs ai/A (2 applications a year for sugarcane) to 3.644 lbs ai/A (1 application for ornamental trees etc., non-agricultural areas, industrial areas, Christmas trees and forest shelter belts). The proposed 24c rates are 1 gal/A (3.34 lbs ai/A) as a spot treatment every other year. Maine Maximum Exposure Guideline (MEG) set in 2002 for asulam was 35 ppb. In their 2010 revised MEG for drinking water exposure, Maine Centers for Disease Control (ME CDC) rounded the MEG up to 40 ppb (BPC 2002b)

There are also eight ecological effects studies (marine studies missing are: fish and invertebrates, acute toxicity and early life stage toxicity; the freshwater study data gap is for fish, early life stage toxicity). The missing plant studies with data gaps are vegetative vigor and seedling emergence (EPA 2010ad). Evaluation of the acceptable ecological effects studies, indicate that asulam is practically nontoxic in fresh water fish and invertebrates, birds, mammals and honey bees. As would be expected with an herbicide, aquatic plants are affected by exposure to fairly low concentrations (140 ppb for vascular plants and 180 ppb for nonvascular plants) of asulam.

Conclusion

Re-issuance of this 24c with no label alterations will not change exposure patterns in Maine. The most recent evaluations by EPA indicate that the current risk assessments have not been changed and the re-issuance of this 24c will not increase known risks to non-target species from using this product. When EPA receives and evaluates the required studies in response to the DCIs, this may change.

References Cited

BPC 2002a, Report of the Medical Advisory Committee 2002 reformatted in 2010

BPC 2002b, memo from L Hicks to A. Smith Establishing an interim Maximum Exposure Guideline for Asulam

EPA 2002d, Asulam HED Human Health Assessment for the Tolerance Reassessment Eligibility Decision (TRED) Chemical No 106901/02 No MRID # DP Barcode No D276505

EPA 2010ad, Registration Review: Preliminary Problem Formulation for the Environmental Fate and Ecological Risk, Endangered Species and Drinking Water Assessment for Asulam and Sodium Asulam (Case 0265)

EPA 2011y, Asulam: Human Health Risk Scoping Document in Support of Registration

EPA 2012a, Chemicals Evaluated for Carcinogenic Potential, Office of Pesticides Programs 2012

EPA 2013af, Asulam: Summary of Hazard and Science Policy Council (HASPOC) Meeting of January 17, 2013: Recommendations on the Data Requirements for Acute and Subchronic neurotoxicity Studies and Re-evaluation of Previously Waived Studies



Special Local Need

FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF MAINE

ASULOX® HERBICIDE

EPA Reg. No. 70506-139

EPA SLN No. ME-100003

ASULOX FOR CONTROL OF BRACKEN FERN IN LOWBUSH BLUEBERRIES Non-bearing fields only

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. This label and the federal label for this product must be in the possession of the user at the time of pesticide application.

Weed Species	Rate	Special Instructions
Bracken Fern (<i>Pteridium aquilinum</i>)	1 gal/acre	Bracken should be in full frond prior to application. Use Asulox only as a spot treatment. The use of a non ionic surfactant at 0.25% v/v may improve uptake of the Asulox. Treatment is limited to non bearing fields. Do not apply more than once <u>every other</u> year. Control will be observed the year following application of the Asulox. No visible control symptoms will be observed the year of application.

Rev. 12/8/14
Expires Jan. 31, 2020



ASULOX[®]

HERBICIDE

**FOR AGRICULTURAL OR COMMERCIAL USE ONLY
NOT FOR USE BY HOMEOWNERS**

**For Postemergent Weed Control in Sugarcane, Turf, Ornamentals,
Christmas Tree Plantings and Non-Cropland**

ACTIVE INGREDIENT:

Sodium salt of asulam (methyl sulfanylcarbamate)* 36.2%

OTHER INGREDIENTS: 63.8%

TOTAL: 100.0%

*Equivalent to 33.1% asulam or not less than 3.34 lbs. per gallon.

EPA Reg. No. 70506-139

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact the Rocky Mountain Poison Center at 1-866-673-6671 for emergency medical treatment information.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.



NET CONTENTS: _____ GALLONS



PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through skin. Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminated), and shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROL STATEMENTS

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should leave the treated area, remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination. Surface water contamination may occur in areas with poorly draining soils and little or no buffers or in areas where drainage systems flow directly to surface water.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not clean equipment or dispose of equipment washwater in a manner that will contaminate resources. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Read entire label before using this product.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants, soil or water is coveralls, chemical resistant gloves, and shoes plus socks.

GENERAL INSTRUCTIONS AND INFORMATION

APPLICATION INSTRUCTIONS

Do not apply ASULOX® Herbicide through any type of irrigation systems.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

SPRAY DRIFT

SENSITIVE AREAS: This herbicide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitats for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulation.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory Information](#).

INFORMATION ON DROPLET SIZE: (This section is advisory in nature and does not supersede the mandatory label requirements)

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions below).

CONTROLLING DROPLET SIZE: (This section is advisory in nature and does not supersede the mandatory label requirements)

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM LENGTH: (This section is advisory in nature and does not supersede the mandatory label requirements)

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

APPLICATION HEIGHT: (This section is advisory in nature and does not supersede the mandatory label requirements)

Applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT: (This section is advisory in nature and does not supersede the mandatory label requirements)

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.)

WIND: (This section is advisory in nature and does not supersede the mandatory label requirements)

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY: (This section is advisory in nature and does not supersede the mandatory label requirements)

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS: (This section is advisory in nature and does not supersede the mandatory label requirements)

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict

vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SUGARCANE

ASULOX Herbicide can be applied to either plant cane or cane grown from stubble. Apply ASULOX as a water mix spray for ground applications. Use 15 to 100 gallons of water per acre, depending on local practice. For aerial application, ASULOX Herbicide should be mixed in 3 to 5 gallons of water per acre, except in Hawaii, where 5 to 10 gallons of water per acre should be used.

Addition of an adjuvant cleared for use on growing crops to the ASULOX Herbicide water mix spray will improve weed control when environmental conditions are not optimal. Use either a non-ionic surfactant containing a minimum of 80% active ingredient at the rate of 1 to 2 quarts per 100 gallons (0.25 to 0.5% V/V) of water mix spray or a crop oil concentrate containing 80 to 85% paraffin based petroleum oil and 15 to 20% non-ionic surfactant at the rate of 4 quarts per 100 gallons (1% V/V) of water mix spray.

The rates of ASULOX Herbicide given below are for broadcast applications. For banded application, reduce the rate proportionally to the width of the band according to the following formula:

$$\frac{\text{BAND WIDTH (inches)}}{\text{ROW WIDTH (inches)}} \times \frac{\text{Broadcast Rate}}{\text{Rate}} = \text{Band Rate/Acre}$$

For spot treatments, use a 5% v/v ASULOX spray (1 gallon per 20 gallons of water). Do not exceed 8 pints of ASULOX per acre per treatment.

Single Application Per Growing Season

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Itchgrass or Raoulgrass (<i>Rottboellia exaltata</i>)	Apply when the grass is 8 inches tall or less (addition of surfactant is necessary).	8 pints/acre
Johnsongrass (<i>Sorghum halepense</i>)	Apply when the grass is between 12 to 18 inches tall. Johnsongrass should be actively growing and the average air temperature should be at least 60°F or higher.	
Paragrass or Californiagrass (<i>Brachiaria mutica</i> or <i>Panicum purpurascens</i>)	Apply when the grass is 6 to 8 inches tall or less.	
Crabgrass (<i>Digitaria</i> spp.)	If treatment is made before the grass reaches seed head formation then the lower rate should be used. If the grass is in early seed head formation then the higher rate should be used.	6 to 8 pints/acre
Alexandergrass (<i>Brachiaria plantaginea</i>)	If treatment is made when the grass is 6 to 8 inches tall or less, then the lower rate should be used. If the grass is greater than 8 inches tall, then the higher rate should be used.	
Foxtail (<i>Setaria</i> spp.)		
Goosegrass (<i>Eleusine indica</i>)		
Broadleaf Panicum (<i>Panicum adspersum</i>)		
Barnyardgrass (<i>Echinochloa crusgalli</i>)		

Two Applications Per Growing Season

This may be required when initial weed infestations are heavy and/or when rhizome Johnsongrass is present. Two applications may also be used when treating weed species which germinate at different times during one growing season.

WEED SPECIES	SPECIAL INSTRUCTIONS	1ST APPLICATION	2ND APPLICATION
Crabgrass (<i>Digitaria</i> spp.)	At each application the grass should be treated before seed head formation.	6 to 8 pints/acre	6 to 8 pints/acre
Itchgrass or Raoulgrass (<i>Rottboellia exaltata</i>)	At each application the grass should be 8 inches tall or less (addition of surfactant is necessary).	8 pints/acre	8 pints/acre
Johnsongrass (<i>Sorghum halepense</i>)	At each application the grass should be between 12 and 18 inches tall.	8 pints/acre	8 pints/acre

RESTRICTIONS AND PRECAUTIONS: Sugarcane

- ASULOX Herbicide should be used when the weeds are actively growing.
- Cover crops may be planted if plowed under and not grazed.
- The following pre-harvest intervals for ASULOX Herbicide applications to sugarcane must be observed:
1) Mainland U.S.A. (except Louisiana) – 140 days; 2) Louisiana only – 100 days; 3) Hawaii – 400 days.
- Do not graze or feed sugarcane fodder and forage to livestock.
- Cultivation and/or fertilizer applications or any other cultural practice that disturbs the root system of targeted weed species may result in less than optimum control when applying ASULOX Herbicide. These practices are not recommended within 7 days prior to or within 7 days after applications of ASULOX Herbicide.
- Differences in crop tolerance to ASULOX among Sugarcane varieties has been reported in Louisiana. Contact your local County Agent or University Extension Specialist for further information.

NON-CROPLAND

ASULOX Herbicide may be used as a postemergent treatment to control weeds on non-cropland areas such as:

Boundary fences	Railroad rights-of-way and yards
Fence rows	Storage areas and industrial plant sites
Highway and roadside rights-of-way	Utility rights-of-way and yards
Lumberyards	Warehouse lots
Pipeline rights-of-way	

A surfactant may be added to the spray solution at 0.25% by volume. (Use an approved non-ionic surfactant.)

Apply ASULOX as a single water-mix spray for ground applications using 20 to 100 gallons of solution per acre, depending on local practice, to control the following weed species. Apply one application per season. Aerial application is prohibited.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Crabgrass (<i>Digitaria</i> spp.)	Apply before the grass reaches seed head formation.	1 gal/acre
Johnsongrass (<i>Sorghum halepense</i>)	Apply when the grass is 18 inches or taller. Use the higher rate in well established heavy infestations. For spot treatment in Hawaii, use the higher rate in 100 gallons of solution and apply an amount not to exceed 50 gallons of total solution per acre.	
Paragrass or Californiagrass (<i>Brachiaria mutica</i> or <i>Panicum purpurascens</i>)	Apply before the grass reaches seed head formation. For spot treatment in Hawaii, use the same rate in 100 gallons of solution and apply an amount not to exceed 50 gallons of total solution per acre.	
Western Bracken (<i>Pteridium aquilinum</i> var. <i>pubescens</i>)	Apply when the fern is in full frond.	7 to 8 pints/acre

CHRISTMAS TREE PLANTINGS

ASULOX Herbicide may be used as a postemergent treatment in Christmas Tree Plantings where Douglas Fir, Grand Fir, Noble Fir or Scotch Pine are grown. Do not graze or feed foliage from treated areas to livestock.

ASULOX Herbicide should be applied as a water mix spray. For ground application, use a minimum of 20 gallons of solution per acre. Do not use a wetting agent with ASULOX Herbicide. Apply one application per season. Aerial application is prohibited.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Western Bracken (<i>Pteridium aquilinum</i> var. <i>pubescens</i>)	Apply after bud break and hardening or firming of new tree growth. Bracken should be in full frond prior to treatment.	1 gal/acre

**TURF
(Sod Farms Only)**

ASULOX Herbicide can be applied on St. Augustinegrass and Tifway 419 Bermudagrass turf. Apply one application per season post-emergence to the weeds listed below. Use 20 to 50 gallons of water per acre in the spray solution.

TURF SPECIES	WEED SPECIES	RATE
St. Augustinegrass	Bullgrass (<i>Paspalum supinum</i>) Crabgrass (<i>Digitaria</i> sp.) Goosegrass (<i>Eleusine indica</i>)	5 pints/acre
Tifway 419 Bermudagrass	Sandbur (<i>Cenchrus</i> sp.)	

Do not use a surfactant. Do not apply to turf which is under stress or freshly mowed.

ORNAMENTALS

ASULOX Herbicide can be applied as a single, postemergent, broadcast application on the following ornamentals:

JUNIPERS		YEWS	
Juniperus andorra	Juniperus horizontalis	Taxus cuspidata	Podocarpus macrophyllus
Juniperus chinensis	Juniperus litoralis	Taxus media	
Juniperus conferta	Juniperus sabina		

Treatment should be made with a minimum of 20 gallons of water per acre. Do not use a surfactant.

WEED SPECIES	SPECIAL INSTRUCTIONS	RATE
Barnyardgrass (<i>Echinochloa crusgalli</i>) Crabgrass (<i>Digitaria</i> sp.) Fall Panicum (<i>Panicum dichotomiflorum</i>) Foxtails (<i>Setaria</i> sp.) Goosegrass (<i>Eleusine indica</i>) Horseweed (maretail) (<i>Coryza canadensis</i>)	Apply when the weeds are between the stages of early seedling and early seed head formation.	1 gal/acre

Local conditions may affect the use of this chemical. Consult State Agricultural Extension or Experiment Station weed specialists for specific recommendations for local weed problems and for information on possible lower dosages.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Store at temperatures above 20° F.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container.

[for containers less than 5 gallons] Triple rinse as follows: empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

[for containers greater than 5 gallons] Triple rinse or pressure rinse as follows:

Triple rinse: empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Pressure rinse: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

CONTAINER DISPOSAL: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

IMPORTANT INFORMATION READ BEFORE USING PRODUCT

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

To the extent consistent with applicable law, United Phosphorus, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or United Phosphorus, Inc., and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, UNITED PHOSPHORUS, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law, United Phosphorus, Inc. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product and **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED PHOSPHORUS, INC. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF UNITED PHOSPHORUS, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

United Phosphorus, Inc. and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by the duly authorized representative of United Phosphorus, Inc.

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Rev. 9/1/11

70506-139(092711-4406)

CASE INVESTIGATION SUMMARY

Company: The Bug Guys **License:** None

Origin of Case: Complaint call to Board, May of 2013

Dates of Incident: 2012 to present

Pesticide(s) Involved: Mosquito Barrier

Summary of Allegation(s): The allegation against this company is that they are making unlicensed commercial pesticide applications to control mosquitoes and ticks.

Staff Action: A Board inspector followed up on information that the company placed their advertising brochures at various stores in south western Maine. The inspector confirmed and documented that he found brochures at stores in Hiram, Naples, and Waterboro. The inspector then went to the residential address he believed to be the company's base of operation. No one answered the door, but the inspector noted that there was a truck with a poly tank in the bed, parked at the address. Eventually, on May 23, 2014, the inspector was able to meet with Brian Howland, the company owner/applicator, to conduct a use inspection on the pesticide the company uses to make applications. A consent agreement was sent to the company by certified mail. It was returned as unclaimed. Numerous phone calls were made to the company in an effort to discuss the consent agreement, voice messages were left on the phone system. They were unsuccessful. The consent agreement was then sent as regular mail. The owner/applicator of the company called and left a voice message that he was not doing anything wrong. Again numerous follow up calls were made to the owner/applicator of the company each leaving phone messages on his voice mail in an effort to resolve the consent agreement. No phone calls were returned by the company owner/applicator.

Staff Findings: The company made unlicensed commercial pesticide applications.

Attachment(s):

- Consent agreement
- Company advertising brochure

Applicable Citations of Law:

- 22 M.R.S. § 1471-D(1)A– No commercial applicator may use or supervise the use of any pesticide within the State without prior certification from the board, provided that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator.
- CMR 01-026 Chapter 31 Section 1(A)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...

Staff Recommendation(s): Since the staff has been unable to reach a settlement, it recommends referring the case to the Office of the Attorney General.

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

Brian Howland)
The Bug Guys) ADMINISTRATIVE CONSENT AGREEMENT
212 King Street) AND
Hiram, Maine 04041) FINDINGS OF FACT

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

The parties to this Agreement agree as follows:

1. That on May 16, 2013, the Board received a phone call and the caller said that he saw the Company's brochures in several convenience stores in the Raymond /Casco area advertising that they provide mosquito, black fly, and tick control services using an organic type program.
2. That the caller in paragraph one also said he had seen the Company's pickup truck with a large tank on the back and a hose and reel set up and suspected that the Company was making unlicensed pesticide applications. The caller provided the telephone number listed in the brochure.
3. That the inspector contacted the stores that the caller described in paragraph one and confirmed that Company brochures were in circulation. The inspector collected one of the brochures at a store which was later placed in the case file and identified as attachment 1 to case number 130523EPM05.
4. That the inspector went to Company's Hiram address, no one was home. The inspector took a digital photo of a pickup truck in the driveway. The truck had a poly-type spray tank in the bed and a hose and reel set up. This photo was identified as attachment 2 to case number 130523EPM05.
5. That on May 23, 2013, a Board inspector met with the Company owner, Brian Howland to do an inspection. Howland said he only put out Company brochures advertising pesticide application services as a feeler, but did not do any applications. After the inspector pointed out that the truck and equipment looked used, Howland said he made applications to his own yard and a friend's yard.
6. That the inspector asked about the customer testimonials listed in the Company advertising brochures described in paragraphs one, two, and three. Howland at that point acknowledged that those testimonials were from customers for commercial pesticide applications he made in 2012.
7. That the inspector completed a pesticide use inspection with Howland for his custom application of Mosquito Barrier, an insect repellent, in June of 2012 to a one half acre residential customer's property in Scarborough. The inspector documented the pesticide label and identified it as sample number 130523EPM05A.
8. That on May 30, 2012, Howland took both the Board's core exam and biting fly category exam and did not pass either exam.
9. That any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A)III.

10. That a custom application is defined in 22 M.R.S. § 1471-C(5-A) includes any application of any pesticide under contract or for which compensation is received.
11. That the pesticide applications described in paragraphs six and seven, constitute custom applications under 22 M.R.S. § 1471-C(5-A) and, therefore, a commercial applicator's license was required for those applications.
12. That no one from the Company had a commercial pesticide applicator's license at the time of the pesticide applications described in paragraphs six and seven.
13. That the circumstances described in paragraphs one through twelve constitute violations of 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A)III.
14. That the Board has regulatory authority over the activities described herein.
15. That the Company expressly waives:
 - a. Notice of or opportunity for hearing;
 - b. Any and all further procedural steps before the Board; and
 - c. The making of any further findings of fact before the Board.
16. That this Agreement shall not become effective unless and until the Board accepts it.
17. That, in consideration for the release by the Board of the causes of action which the Board has against the Company resulting from the violations referred to in paragraph thirteen, the Company agrees to pay to the State of Maine the sum of \$500. (Please make checks payable to Treasurer, State of Maine.)

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

THE BUG GUYS

By: _____ Date: _____

Type or Print Name: _____

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____

Henry Jennings, Director

APPROVED

By: _____ Date: _____

Mark Randlett, Assistant Attorney General

Proposed Administrative Consent Agreement Background Summary

Subject: Dennis Welsh
Charles A. Dean Memorial Hospital
364 Pridham Avenue
Greenville, Maine 04441

Date of Incident(s): Various dates the summer of 2012

Background Narrative: During a routine inspection at this facility in January 2013, a Board inspector noticed a Buckeye Equity Spray Restorer buffing and burnishing container with the words “Kills Ants” and “Ant Spray” hand written on the container. Initially, the maintenance supervisor denied any knowledge of what this indicated, but later recanted and said that Orange Guard insecticide was in the container. Maintenance staff further stated that the pesticide was purchased at a local hardware store and applied by a hospital maintenance staff person in the summer of 2012 as needed, to control an ant problem in patient rooms. Neither the staff person making the application nor anyone else employed by the hospital was a licensed pesticide applicator. The pesticide was incorrectly stored in the Buckeye Equity Spray Restorer buffing and burnishing container.

Summary of Violation(s):

- Any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A) III.
- 7 M.R.S. §606 2D, prohibits handling, transporting or otherwise distributing pesticides in a careless, faulty, or negligent manner.

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

Attachments: Proposed Consent Agreement

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

Dennis Welsh)	
Charles A. Dean Memorial Hospital)	ADMINISTRATIVE CONSENT AGREEMENT
364 Pridham Avenue)	AND
Greenville, Maine 04441)	FINDINGS OF FACT

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

The parties to this Agreement agree as follows:

1. That the Company is a 25-bed critical access hospital located in Greenville, Maine.
2. That on January 16, 2013, a Board inspector conducted a routine pesticide use inspection at the Company.
3. That during the course of that inspection, the inspector observed that a plastic hand trigger spray container of Buckeye Equity Spray Restorer for buffing and burnishing had the words "Kills ants" and "Ant Spray" written by hand on it with a marker.
4. That the inspector asked Stephen Douglass, the maintenance supervisor he was meeting with what was in the container. Douglass suggested the buffing solution might kill ants.
5. That Brian Merrill a maintenance worker with the Company interjected that the bottle contained a pesticide named Orange Guard. Merrill further stated that Douglass purchased the product from a local hardware store and that it was used to control an ant problem in patient rooms the previous summer.
6. That the inspector, while on site documented the label on the original container of Orange Guard Insecticide.
7. That from the inspection described in paragraph two it was determined that Merrill, under the direction of Douglass, applied the Orange Guard to patient rooms as needed to control ants.
8. That any person making a pesticide application that is a custom application, as defined under 22 M.R.S. § 1471-C(5-A), must be a certified commercial applicator or under the direct supervision of a certified applicator in accordance with 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A)III.
9. That a custom application is defined in 22 M.R.S. § 1471-C(5-A) as any application of any pesticide under contract or for which compensation is received or any application of a pesticide to a property open to use by the public. Applications described in paragraphs four and five are considered applications made to areas that are open to use by the public.
10. That the pesticide applications made by the Company as described in paragraphs one through nine constitute custom applications under 22 M.R.S. § 1471-C(5-A) and, therefore, a commercial applicator's license was required for those applications.
11. That no one from the Company had a commercial pesticide applicator's license at the time of the pesticide applications described in paragraphs five and seven.

12. That the facts described in paragraphs one through eleven constitute multiple violations of 22 M.R.S. § 1471-D(1)(A) and CMR 01-026 Chapter 31 Section 1(A)III.
13. That 7 M.R.S.A. §606 2D, prohibits handling, transporting or otherwise distributing pesticides in a careless, faulty, or negligent manner. In addition, the label itself states “Store only in original container”
14. That the circumstances in paragraphs three through six and thirteen, constitute a violation of 7 M.R.S.A. §606 2D and the pesticide label itself.
15. That the Board has regulatory authority over the activities described herein.
16. That the Company expressly waives:
 - a. Notice of or opportunity for hearing;
 - b. Any and all further procedural steps before the Board; and
 - c. The making of any further findings of fact before the Board.
17. That this Agreement shall not become effective unless and until the Board accepts it.
18. That, in consideration for the release by the Board of the causes of action which the Board has against the Company resulting from the violations referred to in paragraphs twelve and fourteen, the Company agrees to pay to the State of Maine the sum of \$350. (Please make checks payable to Treasurer, State of Maine.)

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

CHARLES A. DEAN MEMORIAL HOSPITAL

By: _____ Date: _____

Type or Print Name: _____

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____

Henry Jennings, Director

APPROVED

By: _____ Date: _____

Mark Randlett, Assistant Attorney General

Proposed Administrative Consent Agreement Background Summary

Company: Dan Davis **License:** None

Origin of Case: Restricted use pesticide dealer inspection at Northeast Agricultural Sales in Detroit on 4-27-2012

Dates of Incident: 6-10-2010

Pesticide(s) Involved: Charger Max ATZ Herbicide

Summary of Allegation(s): A Board inspector did a routine restricted use pesticide dealer inspection at Northeast Agricultural Sales in Detroit on April 27, 2012. As part of that inspection, the inspector asked for and received random, representative copies of Northeast Agricultural Sales sales transactions records for some 2010 restricted use pesticide sales. A review of those records revealed that Dan Davis purchased a 2 ½ gallon container of Charger Max ATZ Herbicide on June 10, 2010. Charger Max ATZ Herbicide is a restricted use pesticide that requires a pesticide applicator license to purchase. Davis was not licensed at the time of this purchase

Staff Action: A Board inspector collected a copy of Northeast Agricultural Sale's transaction record showing Davis's purchase of the restricted use pesticide. A consent agreement was given to Davis that included a \$100 penalty. Davis signed the consent agreement and paid the penalty.

Staff Findings: Davis purchased a restricted use pesticide without a pesticide applicator license.

Applicable Citations of Law: CMR 01-026 Chapter 40 Section 1(D) - Restricted use pesticides may be purchased and used only by applicators licensed by the Board as provided in Chapters 31 and 32.

Attachment(s):

- Consent agreement for Dan Davis

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, FOOD AND RURAL RESOURCES
BOARD OF PESTICIDES CONTROL

Dan Davis) ADMINISTRATIVE CONSENT AGREEMENT
340 Bowden Road) AND
Corinna, ME 04965) FINDINGS OF FACT

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

The parties to this Agreement agree as follows:

1. That on April 27, 2012, a Board inspector conducted a routine pesticide dealer inspection with Northeast Agricultural Sales, Inc. in Detroit.
2. That during that inspection, the inspector collected and reviewed invoice # 38449. That invoice indicated that Davis purchased a 2 ½ gallon container of Charger Max ATZ Herbicide (EPA reg. # 100-817-1381) and was invoiced for that purchase on June 10, 2010.
3. That Northeast Agricultural Sales, Inc's. payment sheet # 4017, also collected during the inspection in paragraph one, indicates that Davis paid for the purchase in paragraph two on June 10, 2010.
4. That Charger Max ATZ Herbicide (EPA reg. # 100-817-1381) is classified as a restricted use pesticide.
5. That CMR 01-026 Chapter 40 Section 1(D) specifies restricted use pesticides may be purchased and used only by applicators licensed by the Board as provided in Chapters 31 and 32 of the Board's regulations.
6. That Davis was not certified or licensed at the time of the pesticide purchase described in paragraph two.
7. That the circumstances described in paragraphs one through six constitute a violation of CMR 01-026 Chapter 40 Section 1(D)
8. That the Board has regulatory authority over the activities described herein.
9. That Davis expressly waives:
 - A. Notice of or opportunity for hearing;
 - B. Any and all further procedural steps before the Board; and
 - C. The making of any further findings of fact before the Board.
10. That this Agreement shall not become effective unless and until the Board accepts it.
11. That in consideration for the release by the Board of the cause of action which the Board has against Davis resulting from the violation referred to in paragraph seven, Davis agrees to pay a penalty to the State of Maine in the sum of \$100.00. (Please make checks payable to Treasurer, State of Maine).

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

DAN DAVIS

By: _____ Date: _____

Type or Print Name: _____

BOARD OF PESTICIDES CONTROL

By: _____ Date: _____

Henry Jennings, Director

APPROVED:

By: _____ Date: _____

Mark Randlett, Assistant Attorney General



PAUL R. LEPAGE
GOVERNOR

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

WALTER E. WHITCOMB
COMMISSIONER

HENRY S. JENNINGS
DIRECTOR

To: Board of Pesticides Control Members
From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist
RE: Water Quality Program Update for 2014
Date: January 5, 2015

2014 Ground Water Sampling Project

Water samples from 47 domestic wells were collected during the statewide groundwater monitoring project, in March and April, 2014. Samples were sent to the Montana Analytical Laboratory where the Montana universal method was used to analyze for 96 pesticides. Pesticides were detected in 32 wells with a total of 81 detections for 23 analytes. Please refer to the attached table for a list of analytes detected. The number of detections per well is shown below.

Wells	Number of detects/well
10	1
10	2
4	3
5	4
1	5
1	6
1	8

All detections were below human health guidelines and benchmarks, except for one well that exceeded the Maine maximum exposure guideline (MEG) by 1.089+ parts per billion (ppb) and EPA maximum contaminant level (MCL) by 0.089+ ppb for atrazine and its four metabolites. Three other analytes were also detected in this well. The well of concern was retested in the fall and values fell below the MEG and MCL. Potential resolutions are being explored to address the source of contamination and to remove contaminants from the water.

Sediment and Stormwater Sampling

An Environmental Risk Advisory Committee was convened and met on April 18, 2014. Based on the recommendations of the committee and budget constraints, 20 marine/semi-marine sites were selected for paired sediment and stormwater sampling, extending from Kittery to Cobscook Bay State Park. A delay in contract approval resulted in a delay in sampling. No stormwater samples were collected due to a lack of significant, regional rainfalls after the contract was approved. Sediment was sampled between mid-August and early September.

Sediment samples were sent to the Southwest Research Institute (SwRI), in Texas, for analysis of fipronil, fipronil metabolites, methoprene, piperonyl butoxide (PBO), and 21 pyrethrins and pyrethroids. Duplicate samples were sent to Montana Analytical Laboratory for analysis of PBO, pyrethrins, and pyrethroids. Montana was not able to analyze sediment for fipronil or methoprene. Samples were also sent to the University of Maine Analytical Laboratory for analysis of total organic carbon and particle size.

SwRI reported no detections for methoprene, PBO, pyrethrins, and pyrethroids, but the reporting limits were high, with a range of 12-76 ppb. However, the reporting limits for fipronil and three of its metabolites were in the sub-ppb range (0.081-0.20 ppb) and there were no detections.

Montana Analytical Laboratory reporting limits for 14 pyrethrins and pyrethroids were 0.045-0.45 ppb. Bifenthrin was detected in 12 of 21 samples (11 of 20 sites) with detections ranging 0.091-1.0 ppb (reporting limit 0.045 ppb). Cypermethrin was detected in one sample at 5.0 ppb (reporting limit 0.20 ppb). The 12 sites with detections occurred between Blue Hill and Kittery.

Bifenthrin and cypermethrin detections by site are shown below. Reporting limits and results have not yet been normalized for organic carbon so results are not comparable from site to site.

Site	Bifenthrin (ppb)	Cypermethrin (ppb)
Kittery	0.088	
Biddeford	0.76	5.0
S. Portland	1.0	
Portland	0.32	
Yarmouth	0.56	
Freeport	0.091	
Bath	0.054	
Bath (duplicates)	0.066	
Boothbay Harbor	0.26	
Camden	0.060	
Ellsworth	0.42	
Blue Hill	0.26	

2014 Maine BPC Statewide Groundwater Results

Analyte	Number of Wells Sampled	Number of Samples	Number of Samples with Detects	Range of Detections (ppb)	Reporting Limit (ppb)	ME 2012 MEG (ppb)	EPA or State MCL (ppb)	EPA HAL (ppb)	EPA HHBP Lifetime (ppb)
2,4-D	47	50	1	Q	0.0045	70	70		252
Alachlor (ESA)	47	50	2	Q	0.011	6	2		
Atrazine	47	50	6	Q - 0.079	0.0022	2	3		
Bromocil	47	50	1	0.0047	0.0041	70		70	
Clothianidin	47	50	1	0.032	0.016				686
Deethyl atrazine	47	50	7	0.0028 - 3.0	0.0017				
Deethyl deisopropyl atrazine	47	50	1	Q	0.10				
Deisopropyl-atrazine	47	50	2	Q - 0.010	0.010				
Flumetsulam	47	50	1	Q	0.010				7000
Hydroxy-atrazine (HA)	47	50	2	Q - 0.010	0.0040				70
Hexazinone	47	50	3	Q - 0.50	0.0015	200		400	
Imazapyr	47	50	2	0.0035 - 0.0042	0.0035				17500
Imidicloprid	47	50	7	Q - 0.033	0.0018	400			399
Mecoprop (MCP)	47	50	1	0.0061	0.0022				280
Metalaxyl (mefenoxam)	47	50	13	Q - 0.038	0.0035	400			
Metolachlor	47	50	1	0.0100	0.0068	100		70	
Metolachlor ESA	47	50	14	Q - 5.2	0.0025				
Metolachlor OA	47	50	3	Q	0.021				
Oxamyl	47	50	2	0.052 - 0.096	0.010	200	200		
Prometon	47	50	3	0.001 - 0.0079	0.0010	100		400	
Simazine	47	50	1	0.004	0.0026	4	4		
Terbacil	47	50	2	Q	0.0024	90		90	
Thiamethoxam	47	50	5	Q - 3.8	0.0099				84

HHBP = Lifetime, non-cancer; Human Health Benchmarks for Pesticides for which no MCLs or Health Advisory Levels established.

Q = Present at less than reporting limit

DRAFT

Guidance for State Lead Agencies for the Development and Implementation of Managed Pollinator Protection Plans

Introduction

Pollinator health is a high priority national issue due to significant colony losses experienced by U.S. over the past decade. In his memo, “Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators” in June of 2014, the President called attention to the issue of pollinator health and directed federal efforts to reverse pollinator losses and help restore populations to healthy levels. In particular, the memo directed the U.S. Environmental Protection Agency (EPA) to engage state agencies in developing state pollinator protection plans as a means of mitigating the risk of pesticides to bees and other pollinators.

This guidance is provided by the Association of American Pesticide Control Officials (AAPCO) through the State FIFRA Issues Research and Evaluation Group (SFIREG) and EPA’s Office of Pesticide Programs as a resource for state lead pesticide regulatory agencies (State Lead Agencies or SLAs) as they develop and implement state managed pollinator protection plans. The term “managed pollinators” includes any species of pollinators that are managed by humans, be it for pollination services or the production of honey, beeswax, and other products. Managed pollinators are primarily honey bees, but could include alfalfa leaf cutter bees and some species of bumble bees. It should be noted, however, that many of the strategies to mitigate risk of pesticides to managed pollinators should reduce risk to native pollinators as well.

The purpose of a state Managed Pollinator Protection Plan (MP³) is to establish a framework for open communication and coordination among key stakeholders, including beekeepers, growers, pesticide applicators, and landowners. Open communication will not only help build relationships and increase mutual understanding, but also ensure peaceful co-existence and allow all parties to operate successfully.

The primary benefit of an MP³ is a reduction in pesticide exposure to bees through timely communication and coordination between beekeepers and pesticide applicators, as well as establishing clear expectations when a pesticide application needs to be made near managed hives. Pesticide exposure can be minimized if pesticide applicators and beekeepers can communicate prior to pesticide applications to coordinate activities and allow crop protection products to be used without unreasonable adverse effects to managed pollinators. For example, this could involve an opportunity for beekeepers to move or net their hives prior to a pesticide application, thereby reducing the chance that managed bees are found in the treatment area. In concert with this guidance, EPA is working with SFIREG to explore how to incorporate state MP³s into pesticide label language as a way to mitigate risk of certain pesticides to managed pollinators.

The purpose of this guidance document is to identify the key elements of an EPA-accepted state MP³. A number of pesticide state lead agencies have developed MP³s in recent years to encourage communication and cooperation among stakeholders. These proactive approaches

have demonstrated success in reducing unacceptable losses to bee production while allowing crop producers to use the tools needed for crop protection. The experience of these SLAs is incorporated into this guidance.

Need for State Flexibility

State approaches may vary greatly depending on each state's agriculture, the local beekeeping industry, state pesticide and apiary laws, and other factors. Therefore, it is essential to allow sufficient flexibility for state approaches to address pollinator health and meet the goals of a state MP³. Some states may adopt a regulatory approach, while others may develop plans built on voluntary best management practices. State plans can include regulatory or voluntary approaches as long as the plans address the key elements found in this guidance. In addition, states are free to expand a state plan to include other elements beyond the required elements described in this guidance if they see a need to address other issues.

Required Elements of State Managed Pollinator Protection Plans

1. Public stakeholder participation process

The state plans that have been developed to date are a result of direct discussions among beekeepers, crop producers, pesticide applicators, and other stakeholders. Public participation is essential to gain buy-in from stakeholders, build relationships and trust, and identify key issues affecting pollinator health at the state level. Existing state pollinator plans originated from stakeholder meetings initiated and facilitated by the SLA, providing opportunities for stakeholders to offer input and recommendations.

Therefore, EPA-approved MP³'s must include opportunities for public stakeholder participation when plans are developed and updated. This is best done by face-to-face public meetings involving broad stakeholder involvement, as well as opportunities for the public to offer comments prior to the plan being finalized.

2. A method for growers/applicators to know if there are managed pollinators near treatment sites

A key element of state plans is the ability for an applicator to contact beekeepers near a treatment area to alert them of a pending treatment and to allow the beekeeper to move or net their hives to prevent managed bees from entering the treatment area. In order to adequately coordinate and communicate with beekeepers, growers and applicators need accurate and timely information on the location of nearby colonies that could affect application decisions. This includes stationary colonies as well as contract services colonies (whether owned by a local beekeeper or a migratory beekeeper).

MP³s must indicate information on how a pesticide user will be able to identify the location of managed bee colonies near sites to be treated. Methods for accomplishing this include mandatory or voluntary hive/apiary registration systems that identify location of colonies geographically or other strategies to visually identify hive/apiary locations (e.g., bee flag). In

some cases, the geographic location information is very specific (e.g., GPS coordinates), while in others the location is within a township, section, range and the grower/applicator must directly contact the beekeeper to determine the exact location.

Some states with state apiary registration requirements provide information on the locations of registered colonies (<https://apps.nd.gov/ndda/mapping/>). Other states utilize self-registry sites such as the “Fieldwatch” specialty crop site self-registry system (<http://www.fieldwatch.com/>), and such sites may be adapted to provide apiary location information. Florida’s “Apiary-Citrus Industry Link Mapping Service” is another example.

(<http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Agriculture-Industry/Apiary-Inspection/Florida-Apiary-Citrus-Industry-Link-Mapping-Service>).

3. A method for growers/applicators to identify and contact beekeepers prior to application.

Once growers and applicators identify managed hives near sites to be treated, there needs to be a means for growers and applicators to contact those beekeepers to notify them when a pesticide application needs to be made. Beekeepers, in turn, need a reasonable period in order to take action to protect their colonies if necessary. This is often done by moving colonies temporarily to a protected location. Growers who have pollinators under contract at the treatment site are encouraged to obtain beekeeper contact information and make predetermined agreements with the beekeeper regarding conditions and steps that must be followed before a pesticide application can be made, such as providing holding areas for bee colonies.

Plans should clearly describe how pesticide applicators and/or landowners will be able to obtain contact information for owners of managed colonies near a pesticide treatment area. States have utilized a variety of strategies in the plans that have developed to date to provide applicators with beekeeper contact information. These include web-based apiary registration databases or self-registry websites in which an applicator can quickly and easily obtain beekeeper contact information for a given colony. Other states have utilized requirements for beekeepers to prominently display beekeeper contact information via signage at the colony location. Regardless of the approach, there needs to be a means for pesticide applicators to obtain timely contact information for beekeepers when there is a need to do so.

A common notification period for state plans is a 48-hour notification to the bee keeper prior to an application, although states are free to designate or recommend a notification period that best fits their local needs.

It should also be stressed that pesticide applicators are bound by label restrictions, even if they contact beekeepers in the area prior to a pesticide application. For example, many pesticide labels have prohibitions against making applications if bees are foraging in the treatment area. Contacting beekeepers prior to application does not exempt applicators from complying with such restrictions.

4. A clear defined plan for public outreach

State MP³'s will only be successful if there is robust adoption of the plan. In order to be successful, there needs to be adequate outreach to publicize the state plan and its recommendations/requirements. This typically involves meetings with organized stakeholder groups, such as trade associations, commodity groups, and bee keeping organizations. States should clearly describe how they will provide outreach to the public on their plan.

5. Recommendations for more formalized agreements between beekeepers, crop producers, and property owners, especially in situations with contracted pollination services.

In some situations, beekeepers place hives on private property without contractual agreement or landowner compensation. However, there are other cases in which there is a financial agreement between the beekeeper and landowner, either for contracted pollination services or when the beekeeper compensates the landowner for use of their property.

State plans should encourage use of written contracts or other written agreement between beekeepers and growers when there is a financial relationship, especially in situations involving contract pollination services. These agreements should include elements such as contact information; expectations, roles, responsibilities, and notification requirements when pesticide applications need to be made; expected crop protection needs and practices; specifications regarding hive location; specifications regarding time frames for placement and removal of colonies, and specifics related to financial arrangements and compensation. Verbal agreements are made in many cases, but exchange of contact information is still critical, and should be documented.

6. A process to periodically review and modify each plan

Plans need to be periodically reviewed, again using a public stakeholder process, to evaluate plan effectiveness and to make modifications as needed. These periodic reviews, preferably on an annual basis, also provide opportunities to assess the effectiveness of the plan in improving communication and mitigating risk of pesticides to pollinators. State MP³'s should clearly describe a process and timeline for how the plan will be periodically reviewed and modified.

Optional/Recommended Elements of State Managed Pollinator Protection Plans

States are free to expand a state plan to include other elements beyond the require elements described above if they see a need to do so. State plans that have been developed to date have included additional elements, and states are encouraged to address them, either in public stakeholder discussions or in their managed plans. These include the following:

1. A strategy to deal with unknown colonies

The placement of colonies by a beekeeper without a formal agreement with the landowner is a problem in some areas. Even after a state has developed a plan to allow applicators to identify beekeepers in the area and obtain beekeeper contact information, there may be instances in which an applicator or landowner encounters a colony with an unknown owner. States are encouraged to develop strategies to address these types of situations in a way that does not penalize the landowner or pesticide applicator. Strategies will likely depend on a state's laws and regulatory authority. States are encouraged to explore their authority to seize or remove unidentified colonies, and to seek stakeholder input on reasonable approaches that can be taken when unidentified colonies are found.

2. Recommendations on how to minimize risk of pesticides to bees

Some state plans include recommendations on how growers and pesticide applicators can mitigate risk of pesticides to bees while adequately managing pests. Examples of recommendations include controlling flowering weeds in a crop, making applications when bees are less active (such as after dusk or before dawn), using application methods that are more targeted (such as drip irrigation), using products less toxic to bees when possible, minimizing or reducing pesticide drift, utilizing Integrated Pest Management (IPM), and other approaches. These recommendations can be developed with the assistance of university researchers and extension specialists, and should include the input of crop producers and bee keepers. States are encouraged to include such recommendations in state plans.

3. Communication with crop advisors

Many landowners utilize crop advisors for input on cropping and pest management decisions. Crop advisors are often aware of pest pressures and crop protection needs not only at the field level, but also at a landscape level. Therefore, crop advisors are an important partner in integrating crop protection and pollinator protection beyond just the individual field. Therefore, crop advisors are critical parties to managing potential pesticide risk to managed bees. States are encouraged to explore and develop strategies on how the expertise and input of crop advisors can be utilized in pollinator protection efforts.

4. Clear information as to the applicability of the plan

Because different crops may have different crop protection needs and different pollinator risk mitigation solutions, separate or modified plans can be developed for specific cropping systems. Managed pollinators are primarily honey bees, but could include some species of bumble bees, and alfalfa leaf cutter bees. States are encouraged to clearly define the agricultural production/beekeeping system to which their MP³ applies, including timeframes of applicability. States are also encouraged to develop crop-specific approaches if they see a need to do so.

Process for EPA Review and Acceptance of State Plans

-Placeholder for EPA to add language for this section

Resources

State MP³s are available for review from the following states (with links)

North Dakota: <http://www.nd.gov/ndda/files/resource/NorthDakotaPollinatorPlan2014.pdf>

California: <http://www.cdpr.ca.gov/docs/legbills/calcode/030203.htm>

Mississippi: <http://www.mdac.state.ms.us/departments/bpi/index.html>

Florida: <http://www.freshfromflorida.com/Consumer-Resources/Florida-Bee-Protection>

Colorado: <http://www.cepep.colostate.edu/Pollinator%20Protection/index.html>



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

Maine Board of Pesticides Control (BPC) Environmental Risk Advisory Committee Meeting

April 18, 2014

AMHI Complex, Deering Building, Room 319, Augusta, Maine

1:00 pm – 4:30 pm

MINUTES

(Meeting notes are identified by bullets.)

Topic: Potential Impact of Pesticides in Sediment and Surface Water on Lobster Health

Committee members present: Curtis Bohlen, Chair, Kohl Kanwit, Carl Wilson, Leon Tsomides, Jim Dill, Larry LeBlanc, Michael Horst (via conference call); Absent John Wise, James Stahlnecker

Staff present: Henry Jennings, Lebel Hicks, Mary Tomlinson, Megan Patterson

1) Introductions

2) Updates or changes to the agenda – None

3) Review of Charge from the BPC and the Letter from Joint Standing Committee on Agriculture, Conservation and Forestry

a) Interest From Joint Standing Committee on Marine Resources

- Jennings stated that the Joint Standing Committee on Marine Resources had also expressed an interest in the work of ERAC. Consequently, the staff will file reports with both the Joint Standing Committee on Agriculture, Conservation and Forestry and the Joint Standing Committee on Marine Resources. Reports are due in January of 2015 and 2016.

b) Final framing of the question in front of the Committee

- Charge from the BPC: To examine whether current pesticide residues have the potential to affect the lobster resource in Maine directly or via impact on other marine organisms.
- The letter from the Joint Standing Committee on Agriculture, Conservation and Forestry acknowledges that the Board will evaluate Maine pesticide use and assess potential adverse impacts of pesticides on the lobster resource.
- Representative Dill, committee member and co-chair of the Legislature's Joint Committee on Agriculture, Forestry and Conservation (ACF), signatory on the ACF committee's letter, stated that the committee was specifically interested in the impact of synthetic pyrethroids and methoprene on lobsters. During the work session, the Committee expanded its request to include a more comprehensive evaluation of potential pesticide impacts.
- Comments expressed regarding the charge:
 - The scope of pesticides used in Maine and all marine organisms and a limited budget is problematic. This effort will require strategic use of resources.
 - EPA only tests small vertebrates and invertebrates. From a risk perspective, look at aquatic invertebrates in marine environment.
 - A focus only on lobsters is a disservice to other organisms and fisheries.

- In addition to direct impacts on lobster, impacts may occur via impacts on their food supply (ie bioconcentration in finfish and other aquatic species)
- Pesticide load should be primary focus, impact on organisms is secondary.
- The committee can assess aquatic risks in absence of sediment monitoring results.

c) Budget (Henry Jennings)

- Grant money is available due to accumulation of funds over a five year EPA grant period.
- A total of \$125,000 has been reallocated for environmental monitoring purposes through federal fiscal year 2015. \$26,000 has been spent to date for the ground water monitoring program with same amount dedicated for 2015 ground water sampling.
- Analysis of sediment samples costs \$500 for pyrethroid screen. Shipping via FedEx overnight, analyses for other analytes, toxicity testing, sediment classification, total organic carbon, etc. will be additional costs.
- Should analysis of storm water and lobster tissue be included this year?
- Discussion: Standard test organisms are used for toxicity testing throughout the country. Unknown if lobsters have been used for toxicity tests.

4) Overview of Lobster Biology with Emphasis on the Near Shore Environment (Carl Wilson)

- Maine lobsters are the dominant resource in Gulf of Maine. Landings doubled since 2008. Seventy percent of landings are within three miles of shore.
- Lobsters are most vulnerable during molting.
- Habitat use:
 - Pre-larvae – water column
 - 4th stage planktonic post larvae
 - Settling post-larvae
 - Shelter restricted juveniles – cobble mixed with sediment, filter feeders, short foraging forays, burrow in sediments of grass beds
 - Vagile (able to move about) juvenile – rocks, peat marshes, adults – move up to one mile/day, miles over a year
- Discussion: Uptake of contaminants is via flow of water through gills which is significant in terms of mercury. Consider water analysis. Bioconcentration is compound specific. Pyrethroids adsorb to organic material and are suspended in runoff.

5) Information Required to Address the Question

a) Pesticide Use Data (difficult) (Henry Jennings)

- BPC does not collect pesticide use data. Best source of information is annual summary reports submitted by licensed applicators.
- The quality of pesticides sales reports submitted to the BPC has always been problematic.
- Residential use of pesticides, including pyrethroids and neonicotinoids, is highest on high value real estate, and high value real estate is often associated with the near coast environment.

b) Monitoring data (Mary Tomlinson and/or Henry Jennings)

i) Historical

1) In state

- Detections from storm water monitoring conducted years ago were minimal.
- Targeted sediment sampling was conducted in residential and industrial areas in Portland/South Portland, from 2008-2010. Sites included Capisic Brook, Trout Brook, Long Creek, and Back Cove. Several pyrethroids and PBO were detected. Sampling protocol has evolved and is supported by national studies.

2) National

- USGS national water quality assessment – showing a percentage of streams with detectable pesticide residues – is likely representative of Maine. However, most of the monitoring was done more than ten years ago.

ii. Sampling directed

- The committee discussed different sampling approaches that might be undertaken by the state.
- There was general consensus that near-shore sediment sampling is probably the top priority based on the current literature.
- There was some support for pairing stormwater samples with the sediment sample sites in order to assess the presence of more soluble pesticides.
- There was no consensus around the value of tissue sampling, especially in the first year. Some committee members proposed reconsidering tissue sampling once the sediment sampling results are evaluated.

c) Scientific Research Papers/Literature Review (to be done)

i) Discuss the scope of the literature review

- Review of available literature will be important for sampling design/protocol. Other examples of useful literature might include EPA toxicity studies, toxicity thresholds/benchmarks. EPA literature for primary research tends to be less current.
- Knowing the analytes of interest would streamline literature search.
- Lebelles is compiling a list of active ingredients and CAS numbers.

ii) How to perform the review

- Contractor – If more than \$5000 must go out to bid.
- Internship
- Other – AmeriCorp may be an option (9 months for \$10,000).

6) List of Potential Analytes

a) Process for narrowing the selection (Lebelle Hicks)

- Identify all active ingredients in currently registered products (as of Feb 2014, 726 active ingredients).
- Group the active ingredients by chemical class and mode of action (MOA).
- Identify MOAs common to the target pests and to aquatic invertebrates (lobster).
- Use EPA-Syracuse Research Corporation's EPISUITE model to identify the environmental fate parameters: water partition coefficient, $\log K_{ow}$, and organic carbon partition coefficient (K_{oc}).
- Use the $\log K_{ow}$ and K_{oc} to select compounds which may persist in sediments and result in exposure to juvenile lobsters.
- Identify compounds that may be quantified in sediment by an EPA approved laboratory. EPA sediment studies may also provide insight

b) Analytical capabilities (Mary Tomlinson)

i. Montana Analytical Laboratory

- The lab offers full pyrethroid screen with PBO and can analyze for fipronil, but not its degradates.
- The lab does not analyze grain size, normalize carbon, or tissue.
- Surface water analysis is only available for fresh water.

ii. Mississippi State University Laboratory: The lab offers analysis for methoprene, fipronil, and some fipronil degradates in sediment and storm water as well as analysis of lobster tissue.

iii. Narragansett Laboratory (Atlantic Ecology Division of the EPA): Can do tissue analysis.

7) Sampling Protocols

a) Focus on 2014 Sediment Sampling(Curtis Bohlen)

i) Propose and discuss goals of sediment sampling program

- The Joint Standing Committee is interested in methoprene and resmethrin because of the proposed bill. The directive to identify “which pesticides are most prevalent in the marine environment” was based on the impression that the BPC was willing to conduct a more comprehensive assessment of potential pesticide impacts.
- Filters: Is the pesticide used in Maine, is it reasonably likely to be present, is the concentration great enough to be detected, is it likely to bioaccumulate in lobster tissue?
- Tissue testing is not a measure of exposure. Methoprene accumulates in hepatopancreas and gonads of lobsters. If stressed, a lower dose may be more toxic. Most pervasive use of methoprene is on east coast, but use data is not tracked. Methoprene has not yet been used in Maine for mosquito larvae control; however, methoprene is a common component in pet products.
- The committee consensus is to sample over a two year period.

b) Proposed sample locations

i. Casco Bay and Penobscot Bay

- Include other areas of coast such as blueberry agricultural areas?
- DMR has established sampling locations along entire coast.

ii. How to select sample locations:

- 1) Sites most likely to have detectable levels of contaminants: locations of direct runoff, e.g. stormwater outfalls, drainage ditches, mouth of streams, rivers. DMR has established sampling locations along entire coast.
- 2) Sites most likely to harbor juvenile lobsters – cobble/mud interface
- 3) Randomized locations (e.g. Generalized Random Tessellation Stratified (GRTS) sampling of tidal flats) – targeted sampling is preferable.

iii. Sample size and replication

- Quart paint cans are required by the Montana lab for the pyrethroid screen of sediment.
- Sediments should be collected as composites for each sampling site.

iv. Propose sample site selection criteria

- 1) Near sources of pesticides of concern (suburban/urban/institutional): Based on 2008-2010 sampling, likely areas of detection are drainages from dense residential areas and golf courses.
- 2) Data on lobster presence – DMR sources
- 3) Fine sediment deposition environments? Any constraints on grain size distribution?
 - Fine sediment preferable, but mixed grain size acceptable.
 - Collect the top 1-3 cm.
- 4) Intertidal only, or intertidal and sub-tidal?
 - First field season should concentrate on intertidal as more likely to obtain detections and is less costly.
 - Second field season may include ponar grab sampling for subtidal sites.

c) Who is going to do the sampling?

- i) BPC staff: Staff has sampling experience and will oversee project and provide training as needed.
- ii) DMR: Already conducts sampling for shellfish contamination.
- iii) Volunteers: Several groups have offered to sample. A concern was expressed regarding public perception. Volunteers participate as assistants to staff.

d) Chain of custody issues - BPC has protocol.

8) Other types of Samples (back to lab capabilities) (Committee)

- Water - Stormwater? Ambient water?
- Tissue

9) Public Input 3:15 to 3:30

- Ron Huber, Friends of Penobscot Bay: Members participate in the intertidal lobster survey. Could those lobsters be sampled? C. Wilson said they could be boxed up and frozen.
- Patrice McCarron, Executive Director, Maine Lobsterman's Association: Not sure what to advocate for.
- Mark Newberg of Central Garden and Pet Company: The company produces mosquito larvicides with methoprene.

10) Next Steps 3:30 to 4:30

- Draft sampling plan/protocol.
- Complete review of active ingredients.
- Identify sampling locations.

Maine Board of Pesticides Control

**Miscellaneous Pesticides Articles
January 2015**

(identified by Google alerts or submitted by individuals)

New GMO potato avoids USDA regulation

Mateusz Perkowski

Capital Press

Published:

November 25, 2014 11:11AM

Last changed:

November 25, 2014 11:25AM

A new potato that's engineered with gene deletion doesn't have to be regulated by USDA.

The USDA's deregulation of J.R. Simplot's genetically engineered potatoes recently generated much publicity, but another biotech potato was quietly cleared for commercialization without undergoing that regulatory process.

Collectis Plant Sciences, a subsidiary of a French pharmaceutical company, has genetically modified potatoes to experience less sugar buildup during cold storage, thereby helping to preserve their quality. The crop also contains less of a potentially cancer-causing compound.

These traits are similar to Simplot's "Innate" potato but Collectis' product wasn't subject to the same environmental assessments and public notice and comment requirements.

The difference is that Simplot used agrobacterium, a plant pest, to transfer genes from wild and cultivated potatoes, which causes the Innate variety to fall under USDA's regulatory purview.

Under the USDA's interpretation of federal law, which has been upheld in court, the agency's authority over genetically engineered crops is limited to those that are potential plant pests.

In the case of Collectis' potato, the company did rely on a protein from a blight-causing bacteria to remove unwanted genetic material from the variety.

However, that bacterial protein wasn't incorporated into the potato's genes, which convinced the USDA that the variety isn't a plant pest and doesn't require a permit for field release or interstate movement, according to documents recently released by the agency.

"We knocked out DNA sequences that inactivated a gene," said Dan Voytas, chief science officer for Collectis.

Collectis hopes the variety will gain broader market acceptance than previous genetically engineered varieties that were deregulated by USDA because the technology simply removes genetic material, rather than inserting it from other species, he said.

Roughly 10-15 percent of potatoes are lost during storage due to sugar buildup, and the company hopes to significantly cut that waste, Voytas said.

Before it can make actual claims about waste reduction, Collectis must first conduct large-scale tests that are now possible due to USDA's decision, he said.

The company expects it will take several years before enough of its potatoes are available for commercial production, and it still plans to clear the variety with the U.S. Food and Drug Administration and the Environmental Protection Agency, he said.

Also, Celectis will seek regulatory approval in foreign countries that import U.S. potatoes, Voytas said. "There's still quite a bit of effort in front of us."

The Center for Food Safety, a non-profit that's critical of genetic engineering, is nervous about the USDA's position on the Celectis potatoes.

"I think it's really jumping the gun for the USDA to be removing it from regulatory oversight," said Doug Gurian-Sherman, director of sustainable agriculture for the group. "This speaks to real irresponsibility by the agency."

Scientists still don't fully understand the unintended consequences of gene editing, so it's inappropriate for regulators to give such a crop a "clean bill of health" without further study, he said.

The USDA basically washes its hands of regulating any biotech crop that's not a plant pest, which is defined very narrowly by the agency, Gurian-Sherman said.

The agency could expand its oversight over biotech crops under its statutory power to regulate noxious weeds but it chooses not to, he said. "That, to me, is shirking its responsibility to protect the public and the environment."

Portland Sunday Telegram, December 7, 2015

The plight of the honeybee eludes simple solutions

Specialists at a Maine conference agree there are no easy answers for curing colony collapse disorder and other threats.

BY TOM ATWELL

Honeybees are in trouble – in Maine, all over the place. Just about everyone agrees.

The disagreement comes about what is causing the problems and, more than that, what should be done.



A honeybee on a marigold. Most of the food we eat requires pollination, and bees do most of that work. *Shutterstock.com*

A daylong conference earlier this fall sponsored by the University of Maine Cooperative Extension Service and the Maine Department of Agriculture, Conservation and Forestry looked into those questions.

The conference, held in South Portland, was prompted by a bill introduced in the Maine Legislature two years ago to place a moratorium on the use of neonicotinoid pesticides, which work by drawing insect-killing substances into the tissue of plants. Although that initial legislation was withdrawn (the sponsor consulted with the Maine State Beekeepers Association, which found flaws), a rewritten version that would allow use of the pesticides by commercial farmers is expected to be introduced in the coming session.

Why all the attention to honeybees? Because most of the food we eat requires pollination, and honeybees carry out most of that work. The bees are a \$25 billion industry in the United States, John Skinner of the University of Tennessee said in remarks at the start of the conference.

As anybody who hasn't lived in a cave for the last five-plus years knows, the biggest problem honeybees face is colony collapse disorder, in which hives mysteriously die or disappear. The disorder got its name in 2006, but there were instances of it before then, and European honeybees had problems for decades earlier.

Honeybees face a variety of difficulties, all of which may be contributing to colony collapse disorder. They are attacked by mites, both tracheal mites and varroa mites. They get infections, including foulbrood and nosema. They are overworked, their hives hauled from place to place to pollinate crops, which can cause stress – like people who work 80-hour weeks. Bees who eat pollen solely from the crops that humans want pollinated, say blueberries, can suffer from malnutrition; healthy bees need food from many different plants, not a monoculture. And interbreeding may be weakening the bee gene pool.

On top of all that, many pesticides kill bees.

“We are dealing with a complex issue,” Maine state apiarist Tony Jadczyk summed up for the 250 attendees after some seven hours of presentations from professors, scientists and government officials. “Banning one class of insecticides will not fix this problem.”

That said, neonicotinoids have come in for a lot of criticism. The European Union recently enacted a moratorium on their use. The EU was supposed to develop a monitoring program on how the moratorium is affecting the honeybees, said David Epstein of the U.S. Department of Agriculture Office of Pest Management Policy. “They are not doing that, and to me that is really frustrating.”

Nancy Ostiguy of the Penn State Department of Entomology presented a lot of detailed technical information about pesticides, but here’s how she began: “The big conclusion of what I have to say is that we don’t have a clue about what is going on.”

For example, people have assumed that herbicides – which kill plants – are safe for animals, she said, but that is not necessarily true. One complication is that most research is done when a pesticide kills insects immediately because researchers can more easily connect cause and effect; less research exists on chronic effects that may build up over years, gradually harming insects, she said.

Pesticide mixing is also insufficiently researched. For example, when fungicides mix with neonics, the result may be much more toxic than either one used separately, Ostiguy said.

Several speakers expressed concerns about a new pesticide being considered for release, flupyradifurone. It is similar to neonicotinoids in that it is a systemic, but it is in a different class (because it kills insects in a different way). Field studies show that flupyradifurone is less toxic to bees; Ostiguy has her doubts.

Epstein said he is concerned that Bayer, which developed the pesticide, won’t have to prove beyond doubt that it is safe over the long term before introducing it.

Many at the conference also expressed concern that a lot of these pesticides are used on ornamental gardens – designed simply to please the eye – rather than on farms, which produce the food we need to live. No matter the activity, people always must consider benefits versus risks, Ostiguy noted. “It matters a lot who is asking the question,” she said. “The beekeeper, the grower, the farmer and the homeowner all have different perceptions and different benefits and risks.”

Despite the criticism leveled at neonicotinoids, several speakers said that they have been shown to be less harmful to humans and to pollinators than the pesticides they replaced:

organophosphates, carbamates and pyrethroids. They also agreed that when pesticides are applied by professionals – whether for food production or ornamental gardens – they are usually less harmful than when applied by homeowners, who tend to neither read nor follow label instructions.

And finally, they agreed that the debate will continue for a long time to come.

Tom Atwell is a freelance writer gardening in Cape Elizabeth and can be contacted at 767-2297 or at tomatwell@me.com.

Lyme disease digging in as Maine mounts fight against it

A new research lab will help with treatment, and public education efforts have intensified, but cases of the debilitating illness may fall just short of a state record this year.

By Joe Lawlor Staff Writer

jlawlor@pressherald.com | [@joelawlorph](https://twitter.com/joelawlorph) | 207-791-6376



Rebecca Nelson poses for a photograph with her dog Dalton on her property in Scarborough. Nelson raises turkeys, chickens (both laying and broilers) and cattle to provide much of the meat her family eats, as part of her diet to combat symptoms of Lyme disease. Whitney Hayward/Staff Photographer

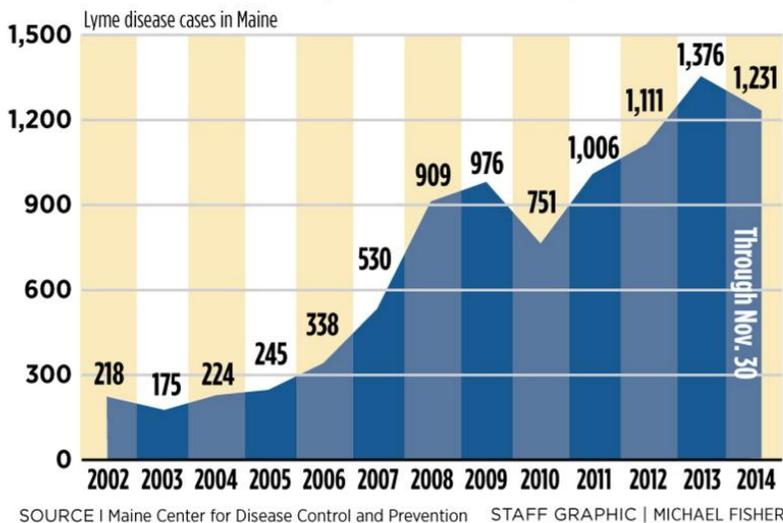
With the number of Lyme disease cases in Maine this year approaching the record set in 2013, a voter-approved plan to build an \$8 million laboratory to test ticks and do other research comes at a critical juncture in the fight against the debilitating disease.

More than 1,000 Lyme disease cases have been reported annually in Maine since 2011, five times the number reported a decade ago, according to the Maine Center for Disease Control and Prevention. In 2013, Maine set a record with 1,376 cases of the bacterial infection, which is spread in the Northeast by

deer tick bites. The National Wildlife Foundation has said that global warming has expanded tick habitat, leading to more Lyme disease.

Lyme disease in Maine

This year will be at least the second-highest on record for Lyme disease infections, nearly matching last year's record high according to the Maine Center for Disease Control. Lyme disease has increased exponentially since 2002, as the range of the deer ticks that carry the disease has expanded.



The new lab, scheduled for completion at the University of Maine in 2017, will accelerate the process of identifying infected ticks and provide information to doctors more quickly, speeding up the diagnosis and therefore the successful treatment of Lyme cases.

That's important to people like Rebecca Nelson of Scarborough, who finally tested positive in January for Lyme, a disease she believes she contracted decades ago. Nelson wants people to recognize the severity of Lyme and to increase awareness among doctors and the public.

"It was a relief" when she was diagnosed, said Nelson, 39. "I finally knew what was wrong with me. I had gotten so tired of people thinking that I was crazy." She described symptoms ranging from chronic fatigue, pain and insomnia to anger and short-term memory problems.

"They sound like such generic symptoms," she said. "I don't think people believe it's as debilitating an illness as it really is."

LYME CASES JUMP IN RECENT YEARS

The Maine CDC has reported 1,231 Lyme infections in the state through November, on track for this year to have the second-highest number of cases on record. The cases spike in the summer when ticks are most active – more than half of 2014's reported infections came in July, August and September.

Lyme disease has spread across much of the eastern United States, especially the Northeast. Nationally, cases have increased exponentially over the past few years, according to the federal Centers for Disease Control and Prevention. More than 25,000 cases were reported in 2013.

Although the UMaine lab that voters approved Nov. 4 also will research animal and plant diseases and other insect-borne infections, a major component of its mission will be to identify ticks and test them for Lyme. The testing will help researchers determine the scope of the problem and get information on infected ticks more quickly to doctors, increasing the effectiveness of treatments, said James Dill, pest management specialist at the University of Maine Cooperative Extension.

The waiting period for Lyme test results – ticks are currently tested out of state – should decrease from several weeks to about 48 hours, Dill said.

Lyme is notoriously difficult to diagnose, in part because the symptoms – which include joint pain, chronic fatigue and inflammation – mimic other diseases, and many people don't realize they've been bitten by a tick.

Because Lyme is often misdiagnosed, scientists believe the number of actual cases is 10 times greater than reported, said Susan Elias, a researcher with the Maine Medical Center Research Institute.

EFFECTS TAKE TOLL ON DAILY LIFE

Nelson, the Scarborough woman with Lyme, has been seeing doctors for years with complaints about various pains and problems. She tested negative for Lyme in 2007 – she said it was a false negative – and positive for Lyme this year.

The treatment and recovery have been slow, she said, with improvement over the summer but backsliding this fall.

“I don't know what (feeling) normal is. I don't remember normal,” Nelson said.

She said the physical effects of the disease are difficult to describe. “The feeling is like when you have the flu and you're tired and achy and that all you want to do is go to bed. That's the way I feel much of the time. Your best day is when you feel like you're almost over the flu,” she said.

Nelson owns a horse stable and gives riding lessons to students, so doctors would often attribute her pain to muscle strains from working on the farm, or fatigue from having young children around the house. But Nelson said she would have pains even when she didn't strain her muscles, and she later discovered the problem was caused by inflammation from Lyme.

DEBATE IN MEDICAL COMMUNITY

Nelson's physician, Dr. Keelyn Wu, a Falmouth doctor who specializes in Lyme treatment, has about 50 patients with the disease and had to turn away new Lyme patients because the demand was more than he could handle.

If Lyme is caught early, the treatment is straightforward, with patients taking a course of antibiotics to clear up the infection. But when not diagnosed within a few months of the tick transmitting the bacteria, diagnosis and treatment become messy.

Wu said there's controversy in the medical community on everything from what constitutes a positive test to how to treat the disease, and even what to call a long-term Lyme diagnosis.

"There are still some doctors who do not believe chronic Lyme disease exists," Wu said. He concluded after reviewing research that chronic Lyme is real and needs specialized treatment.

"It's a very individualized disease. No two cases are completely alike," he said.

Because of a lack of understanding and awareness, the medical community is mostly unprepared for the influx of Lyme cases, Wu said, noting that there are only a dozen doctors statewide with in-depth Lyme expertise.

"There are not enough physicians out there who are able to treat Lyme," he said. "They don't know where to start, how to address it or where to refer (patients) to. The testing is often unreliable, a lot of false negatives."

INDIVIDUAL TREATMENT TAKES TIME

Wu said most primary care practices are not set up to treat people with a long-term Lyme illness – Lyme consultations can take up to two hours, follow-ups at least 30 minutes, and treatment plans are individualized. Compare that to the caseloads of many primary care doctors, who schedule 15 minutes for patient consultations and are dealing with diseases, such as diabetes or asthma, that have a well-known course of treatment, Wu said.

For patients who were initially not diagnosed and have long-term Lyme disease, treating with antibiotics alone is insufficient, he said. So he advocates dietary changes and over-the-counter nutritional supplements in addition to medications. It often takes a lot of mixing and matching before hitting on the correct treatment that eases symptoms.

Nelson takes five prescription medications, including anti-anxiety drugs, and six over-the-counter supplements, including dietary, detox and herbal supplements. Out-of-pocket, she pays about \$4,000 to \$5,000 per year to treat her symptoms. She said she felt "great" for about 10 weeks in summer and early fall, but started struggling again with pain and fatigue in recent weeks.

IDEAS FOR COMBATING LYME

Dr. Phillip Baker, executive director of the Connecticut-based American Lyme Disease Foundation, said that even in Connecticut, where Lyme disease was discovered, some doctors are not as well-versed in the disease as they could be.

Baker said the federal CDC has an effective training tool on its website about Lyme that counts toward physicians' continuing education requirements, so promoting the site or other training would be helpful. Baker said the 10 northeastern states where Lyme disease is most common should work together on regional strategies to help combat Lyme.

He said a Lyme vaccine developed for mice "looks promising," and could be an environmental way to control the problem and reduce the percentage of ticks carrying Lyme.

Although deer carry the ticks that transmit Lyme to humans, the ticks contract the Lyme bacteria from mice, so Baker said vaccinating mice by baiting them in the wild could prove effective. When the mice become vaccinated and produce antibodies to destroy the Lyme bacteria, fewer ticks would become carriers.

A human vaccine for Lyme was available in the late 1990s and early 2000s, but was pulled from the market after some patients complained of arthritis. Although one pharmaceutical company, Baxter International, was researching a new human vaccine, that research is now on hold.

Baker said he doesn't have much hope that a new human vaccine will be brought to market soon.

STATE STRESSING PUBLIC EDUCATION

In addition to the UMaine bond issue, which Gov. Paul LePage supported, the Maine CDC has intensified its public education efforts about Lyme disease over the past few years, said agency spokesman John Martins.

Public health officials attend events, and the administration promotes May as Lyme Disease Awareness Month. The state also hosts an annual poster contest for students in grades K-8.

For Nelson, the goal is to get through every day with enough energy to operate her business and help around the house. Taking Wu's advice, she has cut most processed food from her diet, her family now raises more than 50 chickens, 30 turkeys and a cow for home-grown meat, and she has doubled the size of the vegetable garden. She said eating better has helped, or it has at least slowed the progression of the disease.

"I can't think long-term. It's too overwhelming," Nelson said. "I'm just taking it day by day."



American Lyme Disease Foundation, Inc.

P.O. Box 466, Lyme, CT 06371

[Home](#) ['4-Poster' Deer Treatment Bait Station](#)

'4-Poster' Deer Treatment Bait Station



Before Treatment



After Treatment

NOTE: Some states have approved the pesticide used in this device, but some also have regulations against the feeding of deer and other wildlife. Please check with your individual state as to current rules and regulations.

What is the Problem?

Tick populations of both the lone star tick, *Amblyomma americanum* and the 'deer tick', *Ixodes scapularis*, continue to spread geographically throughout much of the country, due in large part to a continued increase in deer herds throughout most of the United States. As tick populations increase so does disease risk, and there are currently ten known major tick-borne infections in the country affecting humans, most of which are carried by species of ticks which feed on deer. One published study has estimated that Lyme disease alone may cost society over two billion dollars a year. It is now apparent that controlling tick populations is a highly effective way to reduce local disease risk.

What is the '4-Poster' Deer Treatment Bait Station?

United States Department of Agriculture (USDA) - Agricultural Research Service (ARS) - Office of Technology Transfer (OTT) has granted an exclusive license of the ARS patented '4-Poster' Deer Treatment Bait Station to the American Lyme Disease Foundation, Inc. (ALDF). The device was developed by researchers J. Mathews Pound, J. Allen Miller, and Craig A. LeMeilleur of the United States Department of Agriculture (USDA) - Agricultural Research Service (ARS) and patented on November 29, 1994 under United States patent number 5367983.

The '4-Poster' device is specifically designed to kill species of ticks that feed on white-tailed deer and especially those for which white-tailed deer are keystone hosts for adult ticks. In this regard, two primary target species for '4-Poster' technology in the U.S. are the deer tick, *Ixodes scapularis*, that transmits agents causing Lyme disease, anaplasmosis, and human babesiosis, and the lone star tick, *Amblyomma americanum*, that transmits the agent causing human monocytic ehrlichiosis (HME). New tick-borne agents of infection have been identified, and the existence of yet others is suspected.

How does the '4-Poster' work?

The '4-Poster' basically consists of a central bin containing clean whole kernel corn used as a bait and two application/feeding stations located at either end of the device. As deer feed on the bait, the design of the device forces them to rub against pesticide-impregnated applicator rollers. The rollers in turn apply tickicide to their ears, heads, necks, and shoulders where roughly 90% of feeding adult ticks are attached. Through grooming, the deer also transfer the tickicide to other parts of the body. Studies (see below) have shown that use of '4-Poster' technology has resulted in the control of 92 to 98% of free-living tick populations in areas around the devices after three years of use.

What are basic requirements for maximum efficacy?

For maximum efficacy in areas where both deer and lone star ticks are found together, the '4-Poster' device should be maintained essentially on a year-round basis. An exception would be if temperatures remained below freezing for extended periods of time. In areas where only deer ticks are found, the devices should be maintained continuously from September through May to impact the entire adult feeding/breeding season. However, adult ticks are not active during prolonged periods of snow cover or below 45° F air temperature. Where only lone star ticks are found, maintenance of the devices from late January or early February through mid to late September will significantly impact both immature (larvae and nymphs) and adult stages on deer.

What have been the research results with the '4-Poster'?

Two studies have been completed, and data are currently being collected and compiled from a third larger study that involves sites in five states in the northeast. Sites that are deer-fenced or where movement of deer is otherwise 'controlled' have better results than 'unrestricted sites,' where deer are able to come and go as they please. Unfenced deer pick up ticks outside the immediate study area and thus are able to reintroduce ticks to treated areas. This is especially true for adult deer ticks during the fall when deer (especially bucks) often expand their normal territorial range, and tick feeding activity is at its peak. Results may also vary depending upon the tickicide used.

Site one: Located near Kerrville, TX at the Kerr Wildlife Management Area, two 96-acre deer-fenced wooded plots were used to test efficacy of the '4-Poster' technology in controlling free-living populations of lone star ticks. A single corn-baited '4-Poster' was placed in each pasture, but only the device in one pasture was treated with an oily formulation of the tickicide amitraz. After three years, a 92 to 97% reduction in tick numbers was observed in the plot where deer were allowed to passively treat themselves at the device. Lone star ticks in this region of Texas characteristically have a one-year life cycle. In contrast, deer ticks have a two or three-year life cycle, and hence a meaningful level of control may take longer to appear.

Site two: Located at the Goddard Space Flight Center in Maryland (a single 600+ acre deer-fenced facility) an exceptional 96 to 98% reduction in free-living nymphal deer ticks was noted after three years of treatment using permethrin (tickicide).

Sites in five Northeastern States:

Data is currently being compiled after five years of study at sites in MD, NJ, NY, CT and RI. Treatment was terminated in the spring of 2002, but tick sampling will continue through 2004 because the tick's two-year life cycle necessitates observing efficacy of treatment for two additional years.

4-Poster 'Tickicide'

The EPA has approved a specially formulated 10% permethrin based tickicide for use in treating ticks on deer. As with any pesticide, labels regarding its safety are included with its shipment to the Licensed Pesticide Operator.

For additional information contact:

Dandux Outdoors

3451 Ellicott Center Drive

Ellicott City, Md 21043

Phone: 800.933.2638 (extension: #481)

Fax: 410.461.2987

Email: info@crdaniels.com (info@crdaniels.com)



last updated July 11, 2012

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Friday, December 19, 2014 Last Update: 10:33 AM PT

EPA Accused of Dropping Ball on Nano-Silver

By LORRAINE BAILEY

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(CN) - The EPA has failed to adopt safety regulations for nano-silver, which is becoming increasingly widespread in consumer products as an antibacterial agent, a federal complaint from the Center for Food Safety alleges.

The center and five other organizations sued the Environmental Protection Agency and its administrator, Gina McCarthy, on Tuesday in Washington, D.C.

Six years ago, the plaintiffs say, they petitioned the EPA to regulate consumer products using nanotechnology.

"Consumer products containing manufactured nanoparticles have already arrived on market shelves, and numerous pesticidal products within EPA's jurisdiction, such as antibacterial and antibiotic clothing, are now widely available," the complaint says. "Manufactured nanomaterials have fundamentally different properties from their bulk material counterparts, and those properties create unique public health and environmental risks that require new risk assessment paradigms. Yet EPA has thus far failed to address the risks of pesticidal nanomaterials such as nano-silver-containing products."

There are allegedly 1,600 nano-products on the U.S. market, most of which use nano-silver as an antimicrobial agent.

These products include dietary supplements, laundry detergents, soaps and lotions, wet wipes, various types of clothing, food storage containers, sanitizing sprays, air and water purifiers, door handles, printer ink, computer keyboards, and children's toys, according to the complaint.

The EPA already regulates silver as a pesticide, because it is highly toxic to fish and invertebrates, but does not regulate nano-silver, although these tiny silver particles may also have potentially toxic effects on human cells.

"Because of their tiny size, nanomaterials have unprecedented mobility in human bodies and the environment," plaintiffs claim.

"For example, manufactured nanoparticles can enter the body and pass through biological membranes - e.g., cell walls, cell tissue, and organs - more easily than larger particles."

Nano-silver allegedly may accumulate in the liver, or pass into the brain, causing health problems.

While it is unclear what larger environmental risks nano-silver may pose, "its biocidal activity is harmful and potentially deadly to beneficial microbes like bacteria and fungi, and may cause disturbances to critical ecosystems and ecological food webs," the complaint says.

The EPA opened a public comment period after receiving the petition, plaintiffs say.

But six years later, the agency has still not made any answer.

"In the interim, hundreds of new pesticidal nano-silver products have reached the market without any pesticide oversight from EPA. Accordingly, this court should order EPA to respond to plaintiffs' 2008 Petition without further unlawful delay," the complaint states.

The International Center for Technology Assessment, Beyond Pesticides, Center for Environmental Health, Clean Production Action, and the Institute for Agriculture and Trade Policy are also plaintiffs in the action.

Plaintiffs are represented by Peter Jenkins, in-house counsel for the Center for Food Safety. 

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