Pesticides 101

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Licensing Requirements for Pesticide Applicators in the State of Maine

Maine Board of Pesticides Control
www.thinkfirstspraylast.org
207-287-2731
pesticides@maine.gov
Who needs a commercial license?

- Anyone who applies any pesticide...
  - for any type of compensation
  - in areas open to the public
  - as a government employee, including school employees
  - also includes application of restricted use pesticides for other than agricultural purposes (e.g., termite control)

No endorsement intended or implied
Certification & Licensing for Commercial Applicators

You must become certified to be eligible for a license.

Certification = passing exams
   – Core exam
   – Category Exam—in this case 7C3

Must score at least 80%

This will certify you to apply for a Commercial Operator Applicator license.
Certification & Licensing for Commercial Applicators

Every school system wishing to use powered application equipment must have at least one Commercial Master Applicator

Certification = passing exams

- Written Regulations Exam
- Verbal Exam with a BPC staff member

Must score at least 80%

This will certify you to apply for a Commercial Master Applicator license
How do you comply?

- Exams are normally given in Augusta
- BPC will also do our best to accommodate school staff by offering exams for a group of employees at convenient locations if they cannot come to Augusta
  - Must send in a paper application with the $15 fee to sign up for exam or create a profile and pay online – MePERLS
  - We are currently only accepting paper applications currently
- Must pass each written, closed-book exam (80% passing grade)
- The core exam is based on the Pesticide Education Manual available from the Cooperative Extension, Pest Management Office 1-800-287-0279
Expiration and recertification

- All Commercial Licenses expire on December 31st of the third year after issuance (12/31/20-12/31/23)
- Licensed applicators must earn continuing education (recertification) credits during their 3-year licensure period
- Commercial Operator applicators must earn 6 credits during the 3-year period
- Commercial Master applicators must earn 9 credits during the 3-year period
- Excess credits are not carried over into the next certification period
What is a pest?

- Bacteria, viruses (germs)
- Fungi, plant diseases
- Weeds
- Insects, mites, etc.
- Vertebrates

- White Tail Deer
- Starling
- Mice
- Squirrels
- Skunks
Before using lethal methods to control pest wildlife contact the Maine Warden Service or District Wildlife Biologist
What is a pesticide?

- Any substance or mixture of substances intended for:
  - preventing,
  - destroying,
  - repelling, or
  - mitigating any pest

- Includes plant growth regulators, defoliants and desiccants

- Does not include:
  -- fertilizers or nutrients
  -- most beneficial organisms (e.g., insects, nematodes)
  – Does not include traps or mechanical means
What is a pesticide?

Examples:

- Herbicides
- Insecticides
- Fungicides
- Rodenticides
- Bactericides
- Virucides
- Miticides
- Slimicides
- Plant growth regulators
These are pesticides

- Disinfectants and Sanitizers *(including bleaches and peroxides)*

- Fungicides (mold, mildew and plant disease control products)

- Insecticides and Herbicides (weed-killers)

- Rat & Mouse poison baits

No endorsement intended or implied
These are pesticides

- Deer and rabbit repellents
- Insect and tick repellents
- Plant growth regulators

No endorsement intended or implied
Natural, Organic and 'Green' Pesticides ARE Pesticides

- Including products derived from plants, bacteria, fungi, or minerals
- Examples: Dipel, Mycotrol, Thymol, Cedarcide, Safer's Soap, Neem, Diatomaceous Earth

No endorsement intended or implied
What about using products that are not labeled as pesticides?

- Household products and mixtures are NOT allowed for pest control.

- Many of the materials used seem “safe” because we eat them or use them on our skin.

- Exposure routes may be different.

- What we eat may not be safe to breathe.

No endorsement intended or implied.
What are the benefits?

- Protect food supply
- Nuisance or public health pest control
**What is IPM?**

*Integrated Pest Management* is a science-based approach that combines a variety of techniques. By studying their life cycles and how pests interact with the environment, IPM professionals can manage pests with the most current methods to improve management, lower costs, and reduce risks to people and the environment.

**IPM tools include:**

- Alter surroundings
- Add beneficial insects/organisms
- Grow plants that resist pests
- Disrupt development of pest
- Prevention of pest problem developing
- Disrupt insect behaviors
- Use pesticides

**PREVENT**

Some pest problems can be prevented by using resistant plants, planting early, rotating crops, using barriers against climbing pests, sanitation, and sealing cracks in buildings.

**ACTION**

IPM uses multiple tools to reduce pests below an economically damaging level. A careful selection of preventive and curative treatments will reduce reliance on any one tactic and increase likelihood of success.

**MONITOR**

Continue to monitor the pest population. If it remains low or decreases, further treatments may not be necessary, but if it increases and exceeds the action threshold, another IPM tool should be used.

**WHERE CAN YOU PRACTICE IPM?**

**Buildings and Homes:**
- Inspect, identify pests. Keep pests out. Clean to deny pests food and water. Vacuum, trap, or use low-risk pesticides.

**Farms:**
- Check for pests/pest damage regularly. Identify accurately. Choose pest-resistant plant varieties. Encourage/introduce beneficial insects. Time planting to avoid pests. If needed use low-risk pesticides.

**Managed Natural Systems:**
- Identify the pest and use management options that have minimal risks to pollinators, humans, and pets.
Identify and Monitor
Protect Beneficial Insects

- Learn to recognize beneficial insects
- Minimize insecticide usage
- Use spot treatments with selective products when possible
When do we need to make a pesticide application?
Risk assessment

Prior to 1996 FQPA

Aggregate and Cumulative Risk Cup

After 1996 FQPA
Risk Assessment

\[ \text{RISK} = \text{TOXICITY} \times \text{EXPOSURE} \]
One way to quickly assess the acute risk?

Signal Words

Danger

Warning

Caution

No endorsement intended or implied
SIGNAL WORDS

CAUTION - Slightly Toxic

WARNING – Moderately Toxic

DANGER – Highly Toxic
Complete Directions for Use

A complete broad-spectrum postemergence herbicide for industrial, turf, ornamental, forestry, roadside, utility rights-of-way, and other listed terrestrial weed control.

(For a complete list of terrestrial use sites, see the Directions for Use section of this label.)

**ACTtIVE INGREDIENT:**
*Glyphosate, N-phosphonomethyl(glycine, in the form of its isopropylamine salt) 41.0%*
OTHER INGREDIENTS (including surfactant): 30.0% 100.0%

Contains 488 grams of the active ingredient glyphosate, in the form of its isopropylamine salt, per liter or 4 pounds per U.S. gallon, which is equivalent to 35.6 grams of the acid, glyphosate, per liter or 3 pounds per U.S. gallon (38.4% by weight).

Keep out of reach of children

**CAUTION** See inside for additional precautions.

Causes eye irritation
Avoid contact with eyes or clothing

**FIRST AID**

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

- Have the product container or labeling with you when calling a poison control center or doctor, or going for treatment.
- You can also call (314) 694-4000, collect, day or night, for emergency medical treatment information.
- This product is identified as Roundup PRO Herbicide, EPA Registration No. 524-475.
What are the human risks?

- **Acute**
  - Rash
  - Nausea
  - Eye ticks
  - Stomach cramps
  - Death

- **Chronic**
  - Cancer
  - Birth defects
  - Allergies
  - Organ damage
  - Endocrine effects
  - Nerve disorders
Risk vs. Risk

- West Nile Virus, EEE Malaria, COVID-19
- Potato Late Blight Disease
- Lyme Disease
All pesticides have risks!!!

- Organic ≠ Safe
- Synthetic ≠ Highly toxic
- Natural ≠ Safe

No endorsement intended or implied
All substances are poisons; there is none which is not a poison. The right DOSE differentiates a poison from a remedy.”

–Paracelsus (1493-1541)

Even too much water can kill – over 1.5 liters/hour
What are the risks?

- Wildlife effects

- Water contamination

- Our food
Concerns with pesticide dependence past, present and future

- **Pest resistance**
- **Environmental persistence**
- **Bioaccumulation:** when a chemical accumulates in animal tissues
- **Biomagnification:** when an organism accumulates residues at higher concentrations than the organisms they consume
Concerns with pesticide dependence past, present and future

- **Misuse**
- **Secondary pest outbreaks**
- **Non-target/Beneficial organism effects**
- **Pest Resurgence**
Remember “Silent Spring”

“There are those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts. There is something infinitely healing in the repeated refrains of nature -- the assurance that dawn comes after night, and spring after winter.”

— Rachel Carson, Silent Spring

* Biomagnification of chlorinated hydrocarbons like DDT or Dieldrin
Fiberlock

IAQ 2000

DISINFECTANT, CLEANER, *VIRUCIDE, DEODORIZER, FUNGICIDE, MILDEWSTAT

ACTIVE INGREDIENTS

- Allyl (60% C₆, 30% C₇, 5% C₈, 5% C₉)
- dimethyl benzyl ammonium chlorides ------- 2.25%
- Allyl (68% C₆, 12% C₇)
- dimethyl ethylbenzyl ammonium chlorides ---- 2.25%

INERT INGREDIENTS -------------------------- 95.50%

Total -------------------------------------- 100.00%

KEEP OUT OF REACH OF CHILDREN

DANGER: See side panels for additional precautionary statements

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. KEEP OUT OF REACH OF CHILDREN. CORROSIVE.
Causes irreversible eye damage and skin burns. Do not get in eyes, on skin or on clothing. Wear goggles or face shield, rubber gloves, and protective clothing. Harmful if swallowed. Remove contaminated clothing and wash before reuse. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
To be legal for use in Maine, all pesticides must be registered by both:

- EPA*
- BPC

*Some “reduced risk” pesticides have been deregulated by the EPA
EPA exempt pesticides 25b

- Some pesticides have been deregulated by EPA
  - Exempt from Federal registration
  - Must be registered by State of Maine
  - Exempt from toxicity testing and FQPA
  - NOT risk free

Active ingredients in some of these products:
- Clove oil
- Peppermint oil
- Thyme oil
- Sodium lauryl sulfate
- Dried blood

No endorsement intended or implied
EPA exempt pesticides 25b

Claims Regarding Control of Microorganisms

The label cannot bear claims to control or reduce microorganisms, such as bacteria or viruses, that pose a threat to human health. For example, minimum risk products may not claim to:

- "Sterilize"
- "Disinfect."
- "Sanitize."
- "Kill germs."
What does registration mean?

- Not a safety guarantee
- Reasonable certainty of no harm, **but not risk free**
- Must read and follow the label to manage the risk
Pesticide Classifications

- **General Use** – Lower risk, available over-the-counter

- **Restricted Use** – Higher risk, only available at licensed dealerships for purchase by licensed applicators

- **State Restricted** – Aquatic Herbicide Pesticides

No endorsement intended or implied
Pesticide Registration - Pesticide Labeling

- Labels are legal documents that provide directions for pesticide mixing, application, storage & disposal

- Users must comply with all instructions on the pesticide label & labeling

- FIFRA 2ee
The keys to proper pesticide use

- Read and follow the label & SDS
- Do your homework
- If you are a commercial applicator
  - only use products approved for the site
  - do not use products designed homeowner use

This product for use in:
- Hospitals, nursing homes, medical and dental offices and clinics.
- Restaurants and bars, cafeterias, institutional kitchens, fast food operations and food storage areas.
- Institutional facilities, laboratories, factories, business and office buildings, restrooms, hotels and motels and transportation terminals.
- Institutions, schools and colleges, churches, classrooms, athletic facilities and locker rooms.
- Food processing plants.
- Veterinary clinics, kennels, breeding and grooming establishments, zoos, pet shops, and other animal care facilities.
- Automotive garages, boats, ships, buses, trains, taxis and airplanes.
Read the label before…

- Buying the pesticide
- Storing the pesticide
- Mixing and applying the pesticide
- Disposing of unused pesticide and empty containers
Label “Rules of Thumb”

- The site or crop must be stated on the label: **Schools**
- The target pest does not need to be listed: **Covid-19**
- Any application method may be used, unless prohibited by the label: **Fogger**
- Applications may be made at a rate less than that stated on the label, not more: **Read the Label**
- Tank mixtures are OK, unless the label says otherwise

No endorsement intended or implied.
Pesticide Label Exercise

Remember, READ THE LABEL
It’s the Law
**Fiberlock IAQ 2000**

**Disinfectant, Cleaner, *Virucide, Deodorizer, Fungicide, Mildewstat**

**Active Ingredients**
- Alkyl (60% C<sub>12</sub>-14, 30% C<sub>14</sub>-16, 5% C<sub>16</sub>, 5% C<sub>18</sub>), dimethyl benzyl ammonium chlorides............. 2.25%
- Alkyl (68% C<sub>12</sub>-14, 32% C<sub>14</sub>-16), dimethyl ethylbenzyl ammonium chlorides.... 2.25%

**Inert Ingredients**
- Total ........................................... 95.50%
- Total ........................................... 100.00%

**Net Contents:** 1 Gallon

**EPA Reg. No.** 1839-95-73884 EPA Est. No. B325-PA-01

**First Aid**
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

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 eye. Call a poison control center or doctor for treatment advice.

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

If swallowed: Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**DANGER:** See side panels for additional precautionary statements

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.
IAQ 2000 is a moderate risk pesticide.

1. True
2. False
IAQ 2000 is a moderate risk pesticide.

1. True
2. False
What should be done if someone swallows IAQ 2000

1. Call Poison Control
2. Give victim sips of water
3. Do not induce vomiting
4. Check the label for first aid instructions
What should be done if someone swallows IAQ 2000

1. **Call Poison Control**
2. **Give victim sips of water**
3. **Do not induce vomiting**
4. **Check the label for first aid instructions**
What should be done if someone swallows IAQ 2000?

FIRST AID
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice. If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.
IAQ 2000 is a ________________?

1. Virucide
2. Miticide
3. Rodenticide
IAQ 2000 is a ________________?

1. Virucide
2. Miticide
3. Rodenticide
Fiberlock

IAQ

2000

DISINFECTANT, CLEANER, VIRUCIDE, DEODORIZER, FUNGICIDE, MILDEWSTAT

ACTIVE INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Alkyl (60% C&lt;sub&gt;16&lt;/sub&gt; - 30% C&lt;sub&gt;14&lt;/sub&gt;) dimethyl benzyl ammonium chlorides</td>
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</tr>
<tr>
<td>Alkyl (68% C&lt;sub&gt;16&lt;/sub&gt; - 32% C&lt;sub&gt;14&lt;/sub&gt;) dimethyl ethylbenzyl ammonium chlorides</td>
<td>2.25%</td>
</tr>
</tbody>
</table>

INERT INGREDIENTS | 95.50%

Total | 100.00%

KEEP OUT OF REACH OF CHILDREN

DANGER:

See side panels for additional precautionary statements

NET CONTENTS: 1 Gallon

EPA REG. NO. 1839-95-73884 EPA Est. No. 8325-PA-01

FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

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

If swallowed: Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible.

Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate the use of gastric lavage.
The Environmental Protection Agency
Reg No. for IAQ 2000 is_____?

1. 1839-95-73884
2. 8320-1-C4
3. 287-2731
The Environmental Protection Agency
Reg No. for IAQ 2000 is____?

1. 1839-95-73884
2. 8320-1-C4
3. 287-2731
IAQ 2000 is formulated to disinfect porous surfaces ___?

1. True
2. False
IAQ 2000 is formulated to disinfect porous surfaces ____?

1. True
2. False

Use Fiberlock IAQ 2000 to clean and disinfect non-porous personal protective safety equipment, protective headgear, hard hats, half mask respirators, full face breathing apparatus, gas masks, goggles, spectacles, face shields, silicone rubber or PVC hearing protectors and vinyl covered ear muffs.
When using IAQ 2000 to disinfect non-porous surfaces, how many ounces per gallon is recommended?___?

1. 1 ounce
2. 2 ounces
3. 8 ounces
When using IAQ 2000 to disinfect non-porous surfaces, how many ounces per gallon is recommended?

1. 1 ounce
2. 2 ounces
3. 8 ounces
When using IAQ 2000 to disinfect inanimate, hard, non-porous areas, the surfaces should remain wet for ____?

1. 1 Hour
2. **10 Minutes**
3. 45 Seconds
When using IAQ 2000 to disinfect inanimate, hard, non-porous areas, the surfaces should remain wet for ____?

1. 1 Hour
2. **10 Minutes**
3. 45 Seconds

**DISINFECTION** - To disinfect inanimate, hard, non-porous surfaces add 2 ounces of this product per gallon of water. Apply solution with a mop, cloth, sponge, hand pump trigger sprayer or low pressure coarse sprayer so as to wet all surfaces thoroughly. Allow to remain wet for 10 minutes, then remove excess liquid.
IAQ 2000 can be used to treat Coronavirus?

1. True
2. False
IAQ 2000 can be used to treat Coronavirus?

1. True
2. False

*VIRUCIDAL ACTIVITY - This product, when used on environmental, inanimate, hard, non-porous surfaces at 2 ounces per gallon of water, exhibits effective virucidal activity against Influenza A2/Japan (representative of the common flu virus), Herpes Simplex Type 1, Adenovirus Type 2, Vaccinia virus (representative of the Pox virus group), Human Coronavirus (ATCC VR-740, Strain 229E), Human Immunodeficiency Virus Type I (HIV-1), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Norovirus (Norwalk Virus), Bovine Viral Diarrhea Virus (BVDV), Feline calicivirus
IAQ 2000 can be used to treat pathogenic fungi?

1. True
2. False
IAQ 2000 can be used to treat pathogenic fungi?

1. True
2. False

**FUNGICIDAL ACTIVITY** - At the 2 ounces per gallon dilution, this product is also fungicidal against the pathogenic fungi, Trichophyton mentagrophytes, when used as directed on hard surfaces found in bathrooms, shower stalls, locker rooms, exercise facilities or other clean, hard, non-porous, surfaces commonly contacted by bare feet. Follow the Disinfection directions.
Safety Data Sheet

• **Identification**: for the product and supplier

• **Hazards**: physical (fire and reactivity) and health

• **Prevention**: steps you can take to work safely, reduce or prevent exposure, or in an emergency

• **Response**: appropriate responses in various situations (e.g., first-aid, fire, accidental release)
Safety Data Sheet

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: IAQ 2000 No. 8320
General Use: Disinfectant, Virucide, Fungicide
Product Description: Disinfectant & Cleaner
Chemical Family: Quaternary ammonium chloride blend
EPA Registration Number: 1839-95-73864

Information on the Supplier of the Safety Data Sheet

Manufactured For: Fiberlock Technologies, Inc.
150 Doscomb Road
Andover, MA 01810
P: 800-342-3755 F: 978-475-6205

Emergency Telephone Numbers:
CHEM TEL: (U.S.): 1-800-255-3924
(Outside the U.S.): 813-248-0585
Poison Control Center (Medical): 800-222-1222

SECTION 2: HAZARDS IDENTIFICATION

Signal Word: DANGER

GHS Label Statements
Hazard Statements:
Causes severe skin burns and eye damage.
Harmful if swallowed.
Toxic to aquatic life.

GHS Classifications
This product is considered hazardous by The 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Health:
Acute Toxicity (Oral), Category 5
Skin Corrosion, Category 1C
Eye Corrosion, Category 1
Environmental:
Acute Hazards to the Aquatic Environment, Category 1
Pesticide Exposure

PESTICIDES and the HUMAN BODY
Routes of Entry

DERMAL EXPOSURE

ORAL INGESTION

RESPIRATORY EXPOSURE
Pesticide Exposure Deaths

- Majority are suicides
- Many happen when children get into improperly stored products
- Most exposures to children under 1 are due to rodenticides
- Very few occupational

Pesticide exposure calls 2011-2013

Weeks of the year

Count

- 2011
- 2012
- 2013
- Upper
Untrained use can lead to tragedy

Fort McMurray mother trying to kill bed bugs poisoned her children: fire department
Infant dead, four other children in critical condition after possible pesticide poisoning

BY OTIENA ELLWAND AND MARTY KLINKENBERG, EDMONTON JOURNAL  FEBRUARY 23, 2015

MORE ON THIS STORY

- Five children hospitalized in possible poisoning in Fort McMurray
- Don’t let the bedbugs bite: Infestation comes with stigma and shame

A pesticide used in a unit in this apartment building killed an infant and left several other children in critical condition.

Photograph by: Bradley Karp , MyMcMurray.com
In 2008, an 8-year old boy drank paraquat that had been put in a Dr. Pepper bottle, which he found on a windowsill in the garage.

He died in the hospital 16 days later.

His older brother had used the product on weeds around the house and put it in the bottle in the garage.

The older brother obtained the product from a family friend who was a Certified Private Applicator.
U.S. & Maine Reported Poisonings & Exposures

- Pesticides account for 10.3% of all reported poisonings in the USA in 2012

- Insecticides, herbicides, fungicides, etc. accounted for 3.3% (US)

- Disinfectants & pool chemicals accounted for 7% (US)

- 32% of those pesticide related poisonings were in children under 6 and rodenticides are the class of pesticides most likely to be the cause

No endorsement intended or implied
In an emergency call for help and have a copy of the label handy.
The back of your license has **EMERGENCY PHONE NUMBERS**

<table>
<thead>
<tr>
<th>State of Maine</th>
<th>BOARD OF PESTICIDES CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maine Department of Agriculture, Conservation and Forestry</td>
<td>28 State House Station</td>
</tr>
<tr>
<td>BOARD OF PESTICIDES CONTROL</td>
<td>Augusta, Maine 04333-0028</td>
</tr>
<tr>
<td>License Number: COA-7928</td>
<td><a href="http://www.thinkfirstsprayfirst.org">www.thinkfirstsprayfirst.org</a></td>
</tr>
<tr>
<td>JOHN T PIETROSKI</td>
<td>207-287-2731</td>
</tr>
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<td>DEPT OF ACF-BOARD OF PESTICIDES CONTROL</td>
<td></td>
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<tr>
<td>Commercial Operator</td>
<td>EMERGENCY PHONE NUMBERS:</td>
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<tr>
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<td>National Pesticides Info Center</td>
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<td>Board of Pesticides Control</td>
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<tr>
<td></td>
<td>DEP Spill Response Number</td>
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**EXPIRATION DATE:** 12/31/2021
Mild Poisoning

- Fatigue
- Rashes
- Headache
- Dizziness
- Blurred Vision
- Excessive Sweating
- Nausea and Vomiting
- Stomach Cramps
- Diarrhea

- Be careful not confuse pesticide exposure symptoms with the flu
- If pesticides splash in your eyes always rinse with clean water for at least 15 minutes
Moderate Poisoning

- Unable to Walk
- Weakness
- Chest Discomfort
- Muscle Twitches
- Constriction of Pupils
Severe Poisoning

Unconsciousness
Severe Pupil Constriction
Muscle Twitches
Secretions
Breathing Difficulty

Exterminator owner: 'I would have told the family ... to get out'

By Erin Alberty And Judy Fahys

The Salt Lake Tribune

Published February 10, 2010 8:48 pm

Pesticide » Bugman operator says use of chemical that may have killed 2 girls wasn't authorized.

This is an archived article that was published on sltrib.com in 2010, and information in the article may be outdated. It is provided only for personal research purposes and may not be reprinted.

Bountiful » The owner of the company that placed a pesticide believed to have killed two Layton girls said Wednesday he would have warned the family to leave their home had he known what his employee had done.

Routes of exposure

- Eyes
- Inhalation
- Ingestion
- Dermal absorption
Exposure Reduction

- Avoidance
- Personal protective equipment
- Good hygiene
- Worker monitoring
- Follow label and regulations

The label is a legal document—the label is the law!

Personal Protective Equipment (PPE)
Some materials that are chemical-resistant to this product are barrier laminate or viton. For more information, follow instructions in Supplement Three of PR Notice 93-7. If you want more options, follow the instructions for category H on an EPA chemical resistance category selections chart.

Loaders, applicators and all other handlers must wear:
- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any N, R, P, or HE filter

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.
Reduce exposure by using targeted materials

- Enclosed baits & gels
- Spot treatments
- Broadcast treatments
Greater dermal absorption

- Warm, moist areas: groin, armpits, head, neck
- Pesticide formulations affect absorption

Unless otherwise noted on the label EC's should always be added to a tank mix last
Please choose the two pesticide formulation types with the lowest exposure potential

<table>
<thead>
<tr>
<th>Formulation Type</th>
<th>Percent Active Ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Granular</td>
<td>3 - 15%</td>
</tr>
<tr>
<td>2. Ready to Use Baits, Gels or Liquids</td>
<td>1 - 15%</td>
</tr>
<tr>
<td>3. Dust</td>
<td>5 - 10%</td>
</tr>
<tr>
<td>4. Aerosol</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>5. Wettable Powder</td>
<td>50 - 85%</td>
</tr>
<tr>
<td>6. Liquid Concentrate</td>
<td>40 - 90%</td>
</tr>
</tbody>
</table>

Note: Granular pesticides can be very hazardous to birds
How is risk reduced?

PPE—It's not just a recommendation, it's federal law
MAKE SURE SAFETY EQUIPMENT IS A...OK...

- CLEANLINESS
- LEAKS
- TEARS
- BROKEN SEAMS
Always tuck sleeves into gloves when making applications over your head
TIGHT FACIAL SEAL IS IMPORTANT
Pressure check before each use!

- Positive pressure check:
  Put hand over exhalation valve and exhale gently. If there is pressure in the mask, it’s a good fit.
Pressure check before each use!

- **Negative pressure check:** Cover cartridges with hands, **inhale** gently, and hold breath for 10 seconds. If the facepiece exhibits no leakage, the respirator fits properly.

- **Facial hair does not allow a respirator to seal!**

- **Filters must always be changed according to the manufacturer's instructions**
Limitations of Personal Protective Gear

- Must be kept clean
- Respirator filters must be changed according to manufacturer's directions
- Rubber suits: heat exhaustion
- Not adequate against individual sensitivities
- Fumigant gases penetrate rubber

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**NORTH**

**5500 & 7700 Series**
**Half Mask Air Purifying Respirator**
**Operating and Maintenance Instruction Manual**

4.1 SERVICE LIFE

The service life of this respirator will vary depending on the work environment.

4.1.1 CARTRIDGES

When you are using a gas or vapor cartridge respirator which does not have End-Of-Service-Life Indicators, you must establish a change out schedule that will result in cartridges being changed before the end of their useful service life. North provides EZ GUIDE™ software for assisting the user in establishing a change out schedule.

If the respirator has End-Of-Service-Life Indicators, the cartridges must be changed when the color of either one of the indicators match the color standard indicated on the cartridge.

4.1.2 PARTICULATE FILTERS

When you are using a particulate filter respirator, or a gas or vapor respirator with filters attached, the filters should be replaced when breathing becomes difficult.

Any "R" class filter if used in an oil environment must be replaced after a total of 8 hours use, or sooner, regardless of breathing resistance.

5 TO TAKE OFF THE RESPIRATOR

1) Go to an area with uncontaminated breathable air.
2) Loosen headbands and remove the facepiece.
Laundering Pesticide Contaminated Clothing

- Use **hot or warm water** and heavy-duty liquid detergent
- Use 2 cycles for moderate to heavy contamination
- Rinse the washer with an “empty load”
Line dry washed PPE
What are the Laws?

- Federal EPA: Environmental Protection Agency
- FIFRA: Federal Insecticide Fungicide Rodenticide Act
- FFDCA: Federal Food Drug and Cosmetic Act
- FQPA: Federal Quality Protection Act
- Regulations (WPS, Certification, etc.)
What are the Laws?

- State BPC – Title 7 & Title 22 + Regulations
  
  http://www.maine.gov/dacf/php/pesticides/laws.shtm

- Maine has stricter regulations than the EPA

- A product must be registered by both the EPA and the State of Maine to be legal for use in Maine
Who is on the Board of Pesticides Control?

- 2 public members (Deven Morrill & Curtis Bohlen PhD)
- 1 medical doctor (Jack Waterman MD)
- 1 IPM specialist from U-Maine (John Jemison Jr. PhD)
- 1 forestry specialist (Clark Granger PhD)
- 1 commercial applicator (Dave Adams)
- 1 private applicator (grower) (Bruce Flewelling)
Equipment Set Up: **Droplet Size**

The Larger the Spray Droplet Size

The Less Distance the Droplet Drifts

Pesticide formulations with the smallest droplets are the most hazardous to your lungs
Sensitive Areas

Before application you must identify and record all sensitive areas within 500 feet of the target site.

Sensitive areas include:

- Homes, businesses, schools and associated grounds
- Athletic fields
- Recreational areas
- Crop or livestock areas
- Water bodies, wetlands, etc.
- Sensitive areas likely to be occupied (SALOs)
Residue Standard

- Prima facie evidence of violation – 1% or greater residue on SALOs
- Standards of harm
  - Drift onto organic or conventional crops
  - Residues detected on persons or vehicles using public roads
  - Documented human illness from drift
- Enforcement considerations
  - Standard of care exercised
  - Degree of harm
  - Risk of adverse effects from the pesticide used
Must not spray when the wind exceeds 15 mph

Ideal application conditions are between 2 & 10 mph
Notification requirements

- For any outdoor ground application, neighbors may request to be notified of applications within 500 feet of a sensitive area on their property.

- For any outdoor aerial application, neighbors may request to be notified of applications within 1000 feet of a sensitive area on their property.

- For non-agricultural applications, anyone can pay a $20 (fee can be waived) to be listed on a notification registry that triggers automatic notice of applications within 250 feet of the listed property.
Spraying too close to water & wetlands is prohibited

Broadcast applications of pesticides are not allowed within 25 feet of the high-water mark
Mixing & Loading Rules

- No mixing or loading within 50 feet of high-water mark.
- Mixing and loading pesticide concentrate is when there is the highest risk of exposure/poisoning.
- Water transfer pumps must not be contaminated with pesticides & must have an anti-siphon device.
- Mixing and loading should be done in an area where it cannot leach into groundwater.
- Pesticide exposure can also occur while cleaning and maintaining application equipment.
Water Quality Protection Rules

- Pesticide containers must be fastened securely to vehicles
- Never transport pesticides in the cab of a truck or inside of a car
- Spills must be cleaned up immediately and contaminated soils must be removed and disposed properly
Storage

- Buy *only* what you need
- Lock them up
- Keep in original containers—Never store pesticides in other containers
- BPC advises marking original containers with the purchase date
- Never store in basement!
- Do not use wooden shelves
- It is recommended to post warning signs
Some Keys to Preventing Spills

- Regular safety checks of transport vehicles
- Safe driving habits
- A thorough understanding of application equipment
Spill Procedures

- Protect yourself first
- Attend to the injured
- Contain the spill
- Call the BPC & DEP
- Absorb standing liquid
- Clean up contaminated soil and absorbents
- Dispose of wastes properly
Spill Procedures

Kitty litter is a good choice for cleaning up liquid spills
Pesticides Can Drift or Run Off Into Surface Waters

- Water-soluble pesticides are much more likely to leach into groundwater
- Well over two dozen pesticides have been detected in Maine groundwater
Leaching

Leaching is the movement of contaminants, such as water-soluble pesticides or fertilizers, carried by water downward through permeable soils. Generally speaking, most pesticides adsorb to soil particles (especially clay), become immobile, and do not leach.

**Adsorption** – A process that binds pesticides to soil particles, often because of the attraction between the chemical and soil particles. Positively charged pesticide molecules, for example, are attracted to and can bind to negatively charged clay particles.

**Absorption** – The uptake of pesticides into plants and animals. ... Once absorbed by plants, pesticides may be broken down or they may remain in the plant until tissue decay or harvest.
Containers must be properly rinsed

- Triple rinse containers
- Always add the rinsate to the spray mixture and apply to a labelled site
- Never pour rinsate on the ground or down a drain
Disposal

- Follow label
- Triple rinse containers
- Apply extra mix to labeled site
- Call BPC about obsolete pesticides
Burning or burying pesticide containers is illegal
All Pesticide Applications?

- General, restricted & limited use pesticides
- Powered & non-powered applications
- Granulars, liquids, foggers & aerosols, disinfectants
- Biological & organic pesticides
- All application sites – crops, animals & buildings
- Indoor & outdoor application sites

If it is applied to control a “pest” and you use it in your business, You Must Keep a Record
The PESTICIDE KEY needs to be filled in with the Brand Name, Active Ingredients, EPA Registration Numbers, and the Restricted Entry Interval and/or Air Concentration Level.

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Active Ingredients(s)</th>
<th>EPA Registration No.</th>
<th>Restricted Entry Interval and/or Air Concentration Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonide Malathion</td>
<td>Malathion</td>
<td>4-99</td>
<td>Until Dry</td>
</tr>
<tr>
<td>Bravo Weather-Sh.K</td>
<td>50534-188-10</td>
<td>50534-188-10</td>
<td>12 Hours</td>
</tr>
<tr>
<td>Tomcat Quick Kill</td>
<td>Bromethalin</td>
<td>12x55-143</td>
<td>N/A</td>
</tr>
<tr>
<td>roundup Pro</td>
<td>Glyphosate</td>
<td>524-475</td>
<td>4 hrs</td>
</tr>
<tr>
<td>Accord Concentrate</td>
<td>Glyphosate</td>
<td>62719-324</td>
<td>4 hrs</td>
</tr>
<tr>
<td>Captain 80WDG</td>
<td>Captain</td>
<td>66222-58</td>
<td>24 Hours</td>
</tr>
</tbody>
</table>

READ THE LABEL
The SPRAYER CALIBRATION LOG was often found to be missing. Applicators reported doing the calibrations but not recording the data in their logbooks.
The PESTICIDE APPLICATOR LOG needs to be filled in. The BPC Inspector uses this information to check that the label’s directions were followed. This is also the applicators defense in case of an alleged complaint.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Address, Town/Field Location</th>
<th>Size of Treated Area</th>
<th>Site or Crop</th>
<th>Pesticide(s) and Diluent Applied</th>
<th>Rate Description</th>
<th>Application Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/1/16</td>
<td>9:30 AM</td>
<td>10:30 AM</td>
<td>Orchard 1 Honey Crisp</td>
<td>2 acres</td>
<td>NO Apples</td>
<td>Scab</td>
<td>10 lbs</td>
<td>Airblast</td>
</tr>
</tbody>
</table>

1. Be specific, street address, etc. Use abbreviations if needed.
2. Acres or other unit of measure you normally use, e.g., 1000 sq ft, tree-volume, acre-ft, linear miles, etc.
3. If sensitive areas are present, a description or map is required.

NOTES:

4. Note weather conditions every two hours, more often if conditions change.
5. Use the pesticide key at the front of this Logbook to record pesticide brand name, active ingredient, EPA registration number and restricted entry interval or air concentration interval.
6. If you make an incorrect entry - DO NOT ERASE - cross out the error and write in the correction.
Records

- Application records must be kept on file for *two years*

- Records must be available for inspection upon request

- Commercial applicators are required to send pesticide use reports to the BPC annually
Critical Pesticide Control Area Law

- The Board may restrict or prohibit pesticide use in designated areas
  - Persons may petition the Board
  - Requires medical or ecological proof of need
Post emergency numbers
Enforcement

- What we like to do the least
- Want to work with applicators
- 1st offense maximum fine $1,500
- 2nd offense maximum fine $4,000
- Knowing violation $7,500 and/or 30 days
For very serious violations

- The Board can suspend or revoke a license.

Accidentally applying pesticides to the wrong property is considered a serious violation.
The State of Maine is divided into six districts. Five of the districts are covered by a Pesticide Inspector.

Board of Pesticides Control- Inspectors 2020
SAFETY IS EVERYONE'S RESPONSIBILITY
Times are changing

Public safety is always of primary importance
Board of Pesticides Control

Pesticide Certification Exam Information

- We are now contacting and scheduling exam applicants who have not yet been scheduled due to the ongoing COVID-19 emergency.
- Applicants may register for an exam via paper application only.
- To schedule a private and agricultural basic exams please call the BPC office at 207-287-2731.
- Please continue to monitor our website regarding exam applications.
- If you have any questions please contact Board staff at pesticides@maine.gov

Disinfectants and COVID-19

- Maine Registered Disinfectants for Use Against COVID-19 - 07/24/2020 (Excel 58KB)
  Products on this list include Maine registered disinfectants that meet EPA’s criteria for use against SARS-CoV-2, the novel coronavirus that causes the disease COVID-19. The list will be updated often. If you have any questions about products please contact our office at pesticides@maine.gov
- EPA accepted pesticides for Coronavirus COVID-19 mitigation (Source: EPA)
  This site provides information on EPA’s criteria for determining which pesticides are listed for use against SARS-CoV-2.
- Information on using disinfectants to control the COVID-19 Virus (Source: NPIC)
  Find general guidance on using disinfectants effectively. Also find steps to consider to reduce your risk when using disinfectants.
- Respiratory Protection: Keeping Yourself Safe and Meeting Legal Requirements (Source: NIOSH) - This infographic contains a helpful decision matrix for determining the need for a respirator during pesticide application. It also provides suggestions on which types of respirators will provide equivalent or better protection when a label listed respirator is unavailable.
- FDA Releases Temporary Guidance on Respiratory Protection for Agricultural Pesticide Handlers During COVID-19 (Source: EPA) This temporary guidance outlines approaches to address the unavailability of required respiratory protection and respiratory fit testing that should first be exhausted before considering any alternative options.

The next Board of Pesticides Control Meeting is Scheduled to be Held on July 24, 2020.

www.thinkfirstspraylast