



Pesticide Applicator Report



A Quarterly Publication for Vermont Pesticide Applicators

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Plant Industry Division

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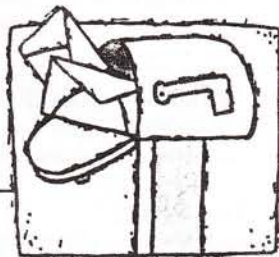
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Applicator and Company Renewals -

On Their Way in December!

It's that time of year again - renewal packages for pesticide company licenses and applicator certificates will soon be coming your way. This past year we received a large number of late renewals. While we understand that paperwork can get lost or misplaced, we are asking that you be pro-active in the renewal process.

Renewal packages will be going out during the second week of December. If you have not received your package by the first week in January, please call us and we will send you another package. For employees that work for large companies with many branches - be aware that the branch that holds the company license receives the renewal paperwork for all employees certified in Vermont and is responsible for making sure that all company employees in all branches receive their renewal paperwork. If you have not received your renewal paperwork, call the appropriate person and request that they send it to you.

For replacement renewal packages and other questions regarding license and certificate renewals, call Wendy Anderson at 802-828-3475.



Tips on Filling Out the Annual Pesticide Usage Report

When filling out your annual pesticide usage reports, please take extra care to provide accurate EPA product registration numbers and specify pounds or gallons when reporting the total amount of product used. If you report the amount used in ounces, be sure to specify if the product used was a liquid or solid. You may use the designations "(L)" or "(S)" to accompany the number of ounces.

If we do not receive accurate information on the usage report, we need to contact you for the correct information, and that leads to a delay in our ability to process your renewal paperwork. Renewal packages will **not** be processed without a complete and accurate usage report. If you have any questions on filling out the usage report, please contact Cary Giguere, Pesticide Research and Information Specialist, at 802-828-6531.

(More Plant Industry Division News on Page 14)

News from the University of Vermont Cooperative Extension Service

UVM Apple Team Testing the Effects of Kaolin Clay on Apple Fruit Quality



Dr. Elena Garcia, UVM Tree Fruit Specialist and Dr. Lorraine Berkett, UVM Apple IPM Specialist, have completed the first year of a three year study looking at a new, 'reduced risk' biopesticide, kaolin, which is commercially available as a potential replacement for insecticides that manage key apple insect pests. Kaolin is a clay that has previously been used as an additive in the food industry. When kaolin is sprayed onto the apple tree, it forms a physical barrier that repels insects or makes the site unrecognizable and/or unsuitable. Initial research has indicated that kaolin might also have non-target impacts because of a reduction in heat stress. However, most of the research on non-target effects, such as impacts on fruit quality, have been conducted in warmer, semi-arid environments.

One of the objectives of this three-year study is to determine the effects of kaolin-based particle film on fruit quality. The treatments the UVM researchers will examine at the Horticultural Research Farm include:

- (1) kaolin starting at the Silver Tip and continuing on a weekly schedule through Petal Fall, then bi-weekly to the end of the growing season, plus fungicides and horticultural sprays;
- (2) kaolin starting at Silver Tip and continuing on a weekly schedule through Petal Fall, then bi-weekly to the end of the growing season with no additional fungicides;
- (3) kaolin starting at the Petal Fall and continuing on a bi-weekly schedule through the end of the growing season, plus fungicides and horticultural sprays;
- (4) a typical IPM spray program consisting of applications of phosmet plus fungicides and horticultural sprays; and,
- (5) a 'control' where no insecticide (kaolin or phosmet) will be applied, but trees will receive fungicides and horticultural sprays.

2001 data indicate significant differences in the treatments in fruit weight, height, width, firmness and starch index. There were no significant differences in percent red color. This study will continue through 2004 to determine kaolin's potential non-target horticultural impact under cooler growing conditions.

Master Gardener Course Now Enrolling Students

It is time to register for the Master Gardener Basic Course for 2002! Participants in the course receive 14 weeks of research-based instruction in all areas of home horticulture taught by UVM Extension faculty, Vermont Department of Agriculture, and other garden experts. Students will learn about soils and soil fertility, plant pests and diseases and their control, fruit and vegetable production, turf management, annual and perennial flower growing, caring for shrubs and ornamentals, and integrated garden management. The training is adapted to local needs and the Vermont environment.



The course is offered at Vermont Interactive Television sites around the state on Tuesday nights from February 5 to May 14, 2002. The price for this year's course is \$215.00 which includes an extensive guide.

If you would like to have leaflets advertising the course for your place of business, or for more information on registering for the course, check out the Master Gardener website at <http://pss.uvm.edu/mg/mg/> or contact the Master Gardener office at 1-802-656-9562, or e-mail <master.gardener@uvm.edu>.

Master Gardener Helpline Winter Hours

The Master Gardener Helpline will still be staffed by Master Gardener volunteers to answer questions throughout the winter. There may not be a volunteer available in the office when you call, but all calls and messages will be answered within a couple of days. Call the Helpline at 1-800-639-2230 for help with your plant and gardening questions!





Pesticide Alert

Pesticide Safety and Site Security



The Environmental Protection Agency (EPA) is issuing this *Alert* to all pesticide industry organizations, facilities, and handlers as a precaution during this heightened state of security awareness. This Alert highlights some general security areas that companies may want to review to ensure that appropriate measures are being implemented. EPA's Office of Pesticide Programs has developed this tailored summary of the Agency's Chemical Safety Alert entitled, "Chemical Accident Prevention: Site Security," which outlines measures to ensure secure and accident-free operations. Published in February 2000, the more detailed Chemical Safety Alert is available on the Web at: www.epa.gov/swercepp/p-small.htm#alerts.

It is important that all pesticide establishments and applicators review this information and take appropriate steps to minimize risk.

This document does not substitute for EPA's regulations, nor is it a regulation itself. It cannot and does not impose legally binding requirements on EPA or the regulated community, and measures it describes may not apply to a particular situation based upon circumstances. The Agency may continue to provide further guidance in the future, as appropriate.

KNOWING AND UNDERSTANDING POTENTIAL SECURITY THREATS

Businesses that manufacture, reformulate, sell, distribute, transport, store, or apply pesticides have long known the importance of risk mitigation steps for the safety of their workers, their customers, and their communities. For manufacturers and reformulators, efforts focus on ensuring that the facility is operated safely on a day-to-day basis. Manufacturers must use well-designed equipment, conduct preventive maintenance, implement up-to-date operating procedures, and employ well-trained staff. Those who distribute pesticides have focused on safe storage and accurate labeling of their products. For the pesticide user community, safety efforts have focused on strictly reading and following all label directions. Today, these efforts aren't necessarily enough.

While many of the steps to ensure an effective security program seem routine, they are critical to the health and safety of your business, facility, and community. Without effective security procedures, your business may be vulnerable to both internal and external threats, posing risks to yourself and employees, your building and machinery, stored pesticides, and even sensitive business information. If you have mobile pest application equipment, particularly aerial application equipment, special precautions should be taken to protect both your equipment and the surrounding community.

RECOMMENDED CONSIDERATIONS IN EVALUATING PESTICIDE SECURITY

The security needs and critical control points will differ for every business and facility. However, some of the fundamental security control points include:

- **Securing Buildings, Manufacturing Facilities, Storage Areas, and Surrounding Property:** One of the most fundamental security needs is the prevention of intrusion to areas used to manufacture or store pesticides and other toxic chemicals. Elements of an effective security plan can range from basic fencing, lighting, and locks, to intrusion detection systems, cameras, and trained guards. For more information on basic tips on protecting your site, review EPA's report "Chemical Accident Prevention: Site Security" listed below in the section entitled "For More Information."

- **Securing Pesticide Application Equipment and Vehicles:** Facilities and pesticide businesses should ensure that they have appropriate security protections to prevent intruder access to equipment used in mixing, loading, and applying pesticides. Before operating pesticide application tools and vehicles, handlers must have proper authorization and identification.

- ➔ **Aerial Application Equipment:** Security awareness is particularly important for large-scale pesticide application equipment like aircraft and large trucks. The FBI has requested that aerial applicators be vigilant to any suspicious activity relative to the use, training in, or acquisition of dangerous chemicals or airborne



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application of same, including threats, unusual purchases, suspicious behavior by employees or customers, and unusual contacts with the public. Any suspicious circumstances or information should be reported to the FBI.

- **Protecting Confidential Information:** As business, safety, and security systems become more reliant on computer and communications technology, the need to secure these systems has grown. Such efforts include contingency planning for power losses, effective monitoring of access ports, adherence to password and backup procedures, and other mechanisms to maintain access for authorized personnel only.

- **Designing Facilities and Equipment to Minimize Risk of Damage:** Whether an intrusion to a computer by a hacker or a physical intrusion of your facility by a vandal or saboteur, it is important to take steps to minimize the extent of damage. For example, in order to prevent damage, the use of sturdy, reliable, and potentially blast-proof materials is essential in the construction of equipment used to transport and apply pesticides.

- **Developing Procedures and Policies that Support Security Needs:** Even the best hardware and staffing budgets are only as effective as the procedures and policies that control their use.

⇒ **Effective hiring and labor relations policies** are important to obtain and retain good employees who will support and follow safety precautions. For example, the hiring process should ensure that pesticide handlers have all requisite training necessary to handle pesticides safely. Background checks of staff who have access to secure areas, particularly those areas where pesticides may be stored, are also necessary.

⇒ **Inventory management policies** can help limit the amount of potentially hazardous pesticides stored on site, reducing the risks of accidental or intentional release or theft.

⇒ **Effective advance emergency response procedures** can be critical, helping ensure that business officials and employees

understand how to respond and whom to contact in the case of an emergency. Aside from accidents, such plans must also consider vandalism, bomb threats, and potential terrorist activity.

TIMELY COORDINATION WITH AUTHORITIES

If a breach of security or suspicious activity does occur, timely cooperation with authorities is crucial. In addition to cooperation with your local police department, the FBI requests that you expeditiously report any threats or suspicious behavior to your local FBI field office. These agencies also must be informed if, as a registrant, you are made aware of any reports of adverse exposure under circumstances that are incongruous with your pesticide product's normal use pattern. Information on the location of the appropriate FBI office is available at www.fbi.gov.

FOR MORE INFORMATION

EPA and other Federal agencies have developed a variety of reference materials that may be helpful in reviewing the security of your business or operation.

- Many of the tips listed in this fact sheet are described in more detail in the Chemical Safety Alert entitled: "Chemical Accident Prevention: Site Security", published by EPA on February 2000 and available on the EPA Web site at: www.epa.gov/swercepp/p-small.htm#alerts.

- For information on other Agency programs to promote facility security and readiness, visit <http://www.epa.gov/swercepp/>.

- DOT has produced a separate advisory for transporters, available by contacting DOT at 202-366-6525.

- For objective science-based information about a variety of pesticide-related subjects, including pesticide products, recognition and management of pesticide poisonings, toxicology, and environmental chemistry, contact the National Pesticide Telecommunications Network (NPTN). NPTN, a toll-free hotline funded, in part, by EPA,



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lists state pesticide regulatory agencies and provides links to their Web sites. NPTN can be contacted at: 1-800-858-7378, by e-mail at nptn@ace.orst.edu, or by visiting the Web at: <http://ace.orst.edu/info/nptn/>.

The pesticide alert article above was obtained from the EPA Office of Pesticide Programs web page (<http://www.epa.gov/pesticides>) and reproduced in its entirety. If you do not have access to the Internet and would like to review some of the additional documents referenced in this fact sheet, please call Wendy Anderson at (802) 828-3475.

It Can Happen!

Police search for stolen truck carrying fertilizer, pesticide

October 17, 2001 Posted: 09:46:00 PM PDT
The Associated Press

NEWARK, N.J. (AP) - Authorities issued a nationwide alert Wednesday for a tractor-trailer that was stolen in New Jersey and is carrying a load of fertilizer and pesticide. The truck was stolen Tuesday night or Wednesday morning from a New Jersey trucking company located in Parsippany. State Police spokesman John Hagerty said police had no reason to suspect the truck, which had placards identifying its cargo as hazardous materials, was stolen by terrorists. The theft comes amid heightened nationwide concern over the possible use of hazardous materials trucks in terrorist attacks. Only certain fertilizers are explosive when combined with other materials, and it was unclear what kind of fertilizer was in the stolen truck.

Gail Toth, executive director of the New Jersey Motor Truck Association, said the truck might have been taken by someone who thought it contained valuables. She said New Jersey ranks third in the nation in cargo thefts, raising the possibility the thief was out for a quick score. The 2000 Freightliner cab is yellow and has the word "Penske" on the side. It bears Indiana registration 171469. The 45-foot white trailer has "Rockland" in green letters on all four sides. It is a 1988 Freuhauf model with New Jersey registration T392VD.

ADDITIONAL TIPS FOR PESTICIDE SAFETY AND SITE SECURITY

- Lock pesticide transport vehicles whenever the driver is away from the vehicle and ensure that unauthorized persons cannot get into areas of vehicles where pesticides are stored, such as open bed trucks. Do not leave vehicles containing pesticides unattended and never leave pesticides unsecured. Be aware of the potential for siphoning or otherwise stealing pesticides from filled tanks such as mini-bulk equipment.

- Be alert to unusual or suspicious behavior. Maintain awareness of unusual activity of unauthorized persons during the transport and application of pesticides. Indications that something is amiss may include unusual behavior by a purchaser or other individual who:

- ⇒ seems unfamiliar with the details of using an agrochemical;

- ⇒ acts nervous, seems uneasy or vague, and avoids eye contact;

- ⇒ demands immediate possession of purchased material instead of available future delivery;

- ⇒ asks for materials in smaller, individual containers rather than in bulk;

- ⇒ insists on paying with cash instead of using a credit card or check.

(Source: University of Maryland Cooperative Extension Pesticide Information Leaflet No. 39, *Pesticide Storage Security*)

Tips for Storing Pesticides Safely

You should always consider safety and product quality when storing pesticides. While it is best not to have leftover pesticides, more often than not applicators are faced with a surplus at the end of the growing season. The following tips can help you maintain a safe storage area that will preserve the effectiveness of your pesticide products.



★ **Read the label!** Certain formulations or products have special storage requirements that will be listed on the label. ***The label is the law!***

- While cleaning up and putting away pesticides, containers and application equipment, wear all the protective equipment you would use on the job. Spills and accidental contamination often occur during storage procedures.
- Store pesticides in their original containers with their labels plainly visible. If the original containers are rusted or otherwise damaged, or if unused dry pesticide remains in an open bag, plastic or metal secondary containers should be used to prevent accidental leakage or spillage. Never use any container that has been used to hold food! The secondary containers must be labeled to identify the contents in the original containers. Additional product labels are available from the product manufacturer.
- Make sure the label is in good condition (readable) in order to know what is in the container and to have directions for safe, effective and legal use. Maintain copies of Material Safety Data Sheets (MSDS) in a central location.
- Write the purchase or delivery date on the label. Use older or opened products first. Products that are several years old may have lost effectiveness.

- Keep an up-to-date inventory of pesticides to assist in next season's purchase decisions and for use by emergency response personnel.

- Separate pesticides by function and hazard.

⇒ Fungicides, herbicides and insecticides should be stored separately to prevent cross-contamination and possible misuse. Particular care should be taken when storing phenoxy herbicides due to their volatility.

⇒ Flammable pesticides should be stored separately from non-flammable pesticides, preferably in a fire-proof cabinet. It is a good idea to post "No Smoking" signs to prevent smoking in or near the storage area or facility.

- Never store pesticides with food, feed, seed, veterinary supplies or medications, first aid supplies, clothing or personal protective equipment. These can easily become contaminated with dusts, vapors or spills.
- Pesticides should not be stored in front of windows since sunlight can cause chemical breakdown.
- If possible, store liquid formulations below dry formulations to avoid wetting from spills, and store pesticides in glass containers on the lowest level.
- In general, storage temperatures should not go below freezing or exceed 90 degrees F. Freezing can cause containers to burst or develop intermittent leaks, and may cause some formulations to separate. High temperatures can cause plastic to melt or become brittle, or cause glass to burst. Pressure caused by high temperatures may cause intermittent leaks, swelling or a spill when the product container is opened. High temperatures can break down some chemicals or cause some chemicals to volatilize. Excessive heat can also cause an explosion or fire. It is a good idea to insulate your storage unit to prevent freezing or overheating. You may also want to install a heating unit for the cold winter months.

Tips for Storing Pesticides Safely, contd.

- Keep the unit well ventilated by passive ventilation, mechanical ventilation, or both. A good ventilation design includes locating a louvered vent or exhaust fan high at one end of the unit and a louvered air intake vent low at the opposite end, for example in a door. This allows vapors to flow away from anyone entering or inside the storage unit.

Adequate ventilation will keep the moisture level in the storage unit low. Moisture is a problem with pesticide storage and can: rust metal containers; disintegrate paper or cardboard packaging; make labels unreadable; cause labels to detach; and, cause dry formulations to clump or cake, break down, or dissolve and release pesticide.

- Lighting should be bright enough so that labels can be easily read. The lighting and ventilation fan can be turned on by the same switch.

- Spill control supplies should be kept in the storage facility. Clean-up materials include: cat litter; vermiculite; spill pillows; broom; plastic dust pan or shovel; activated charcoal; lime; bleach for decontamination; heavy duty plastic bags; gloves; eye protection; and, plastic sealable containers. Collect spilled pesticides for possible re-use.

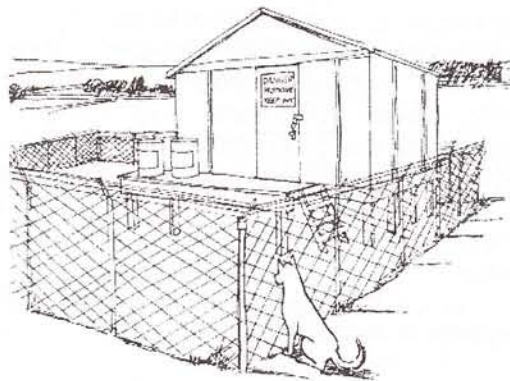


⇒ Clean-up materials and unusable spilled pesticides become hazardous waste! Dispose of these materials through the Vermont Waste Pesticide Disposal Program. You can either contact your local solid waste district for drop-off dates, or visit the Department of Agriculture's website at www.state.vt.us/agric/wastepest.htm.

- A decontamination kit should be kept inside the storage area for use in the event of a spill or accident. You can assemble the following items in a 5 gallon pail or large bag:

- ⇒ Clean water
- ⇒ Soap
- ⇒ Single use towels
- ⇒ Eyewash bottle
- ⇒ Disposable coveralls

Remember - it is your legal responsibility, when using or storing pesticides, to secure pesticides and pesticide containers in a manner that makes them inaccessible to unauthorized persons, livestock and wildlife.



⇒ Always lock pesticide storage cabinets, closets, rooms and buildings.

⇒ Besides locking a storage building, it is a good idea to fence it in and lock the gate.

⇒ Limit access to your pesticide storage area - allow access only to essential people.

⇒ If you must have storage within a larger structure, have storage access through a separate, outside door.

⇒ Application equipment small enough to be carried should be locked in a shed or other appropriate storage area. Never leave ignition keys in application equipment (tractors and airplanes, etc.)

⇒ Post signs on the door, building or fence that indicate the structure is used for the storage of pesticides and tells people to keep out. Example: **"Danger - Pesticides - Unauthorized Persons Keep Out!"** Signs should include emergency phone numbers of your local emergency response (fire, rescue, etc.) You may also want to include the Poison Control Center phone number for your area.

- Refer to the **"Pesticide Alert"** article for more information on pesticide safety and site security.

(Sources: Ohio State University Extension Bulletin 745, "Pesticide User's Guide". UC Davis Environmental Health and Safety "Safety Net" fact sheet #49, "Pesticide Storage". Clemson University Pesticide Information Program, "Pesticide Storage".)

Reading the Pesticide Label

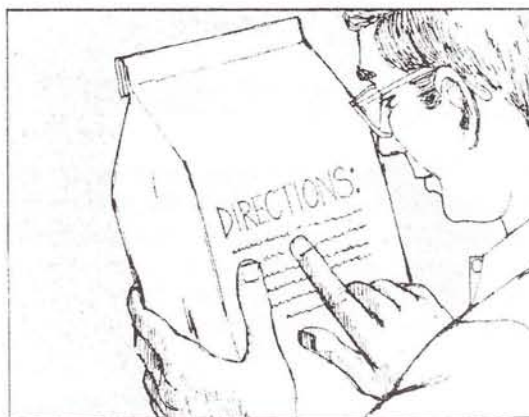
[...or step number one of a job well (and legally) done!]

Pesticides are developed by the manufacturer, registered with EPA, and sold to the public with the assumption that users read, understand, and follow instructions found on the product label. Specific information on use, personal protective equipment, environmental precautions, and storage and disposal are found on the pesticide label. The purpose of the label is to provide clear directions to allow maximum product benefit while minimizing risks to human health and the environment. All research, testing, and regulatory processes ultimately are reflected through the language on the label.

Every pesticide label includes the statement, **"It is a violation of federal law to use this product in a manner inconsistent with its labeling."** This language obliges the purchaser or user of any pesticide to assume all legal responsibilities for the use of the product. Further, courts of law and regulators recognize the pesticide label is a binding contract which requires the person using the product to do so exactly as directed. Terms such as "must", "shall", "do not", and "shall not" mean that the user is responsible for specific actions when applying or handling the given product. Any departure from such directions is, in the eyes of the law, an illegal use of the pesticide.

"Use" means more than just the application of the pesticide. Federal and state regulations define pesticide use to include handling, mixing, loading, storage, transportation, and disposal, as well as human and environmental exposure. This all-encompassing definition covers every activity that involves a pesticide—from purchase to container disposal.

The pesticide label is more than just a piece of paper. It serves a dual function: The label instructs the user how to use the product safely and effectively, and it serves as a legal measuring stick. Many statements on the label result from rigorous scientific investigation and governmental regulatory decisions. Pesticide users should read, understand, and follow pesticide label directions to ensure effective pest control, personal safety, environmental protection and legal compliance.



Reading the label is not a one-time affair that takes place only while selecting and purchasing a pesticide. You should make reading the label your first priority every time you use any pesticide product. You may use the same product year after year and assume that the label is the same as the first time you bought the product. But be aware — pesticide labels often undergo changes, with use patterns being amended or eliminated. It is your responsibility to be thoroughly familiar with what the product label says. Reading, understanding, and strictly adhering to label instructions will result in effective pest control with minimum risk to human health or the environment.

READ THE LABEL BEFORE PURCHASING THE PESTICIDE.

★ Make sure it is registered for your intended use. **Never apply a pesticide to a site or crop that is not listed on the label! If a crop is listed on the label, that means that a tolerance (see below), or an exemption from a tolerance, has been established for that crop. If a pesticide is applied to a crop that is not listed on the label, that crop is considered to be adulterated.** ★

- Confirm that no prohibitions exist against the use of the pesticide.
- Review the environmental precautions.
- Have the equipment needed for dispensing the pesticide.
- Review the requirements for protective equipment.

Reading the Pesticide Label, contd.**READ THE LABEL BEFORE MIXING AND APPLYING THE PESTICIDE.**

- Understand how to mix and apply the material properly.
- Determine what first aid and medical treatment is necessary should an accident occur.
- Follow application methods.

READ THE LABEL WHEN STORING PESTICIDES.

- Know how to store the pesticide properly.
- Understand the precautions to prevent fire hazards.
- Be sure storage areas are posted properly.

READ THE LABEL BEFORE DISPOSING OF THE PESTICIDE.

- Understand how to rinse pesticide containers properly.
- Gather all information about how to dispose of surplus pesticides.

READ THE LABEL TO EDUCATE YOUR EMPLOYEES.

Provide the following information to employees:

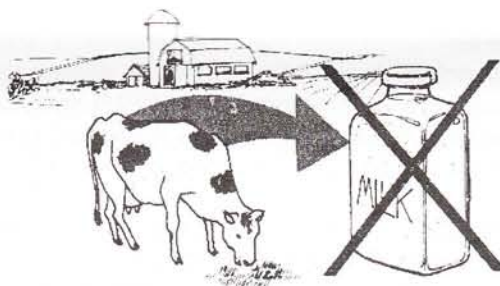
- Where and in what form pesticides may be encountered during work activities.
- Hazards of pesticides resulting from toxicity and exposure.
- Routes through which pesticides can enter the body.
- Signs and symptoms of common types of pesticide poisoning.
- Emergency first aid for pesticide poisonings.
- Environmental precautions provided by the label.
- Mixing, loading, and application procedures.

(Based on "Pesticides and the Label", by Fred Whitford, Purdue University Cooperative Extension Service, West Lafayette, IN 47907. Publication PPP-24)

PESTICIDE TOLERANCES

Many times pesticide residues remain on food or feed crops at harvest time. Since these crops are to be eaten, safe amounts of pesticide residues must be established. The maximum amount of residue that may remain on a harvested crop is called a "tolerance".

The U.S. Environmental Protection Agency (EPA) is responsible for establishing pesticide tolerances. Typically, tolerances are set at very low levels, in the parts per million range, and allow for a wide margin of safety. In setting a tolerance, EPA considers the toxicity of the chemical, the amount and frequency of the pesticide applied, and the pesticide residues that remain in or on the food.

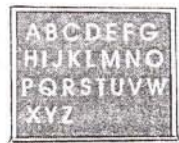


Tolerances are established for pesticide residues in various food commodities. Once established, tolerances are enforceable legal limits. States and federal agencies check to make sure that residues do not exceed the limits. If the residue exceeds the set tolerance, the crop may not be marketed or sold. It is subjected to condemnation and seizure by federal or state regulatory agencies.

If a tolerance, or an exemption from a tolerance, has not been established for a particular crop, that crop will not be listed on the label and you may **NOT** apply the product to that crop. Any applications to a crop not listed on the product label will result in the adulteration of that crop and possible legal ramifications.

Vermont Act 125

"An Act Relating to Toxic Materials and Indoor Air Quality in Vermont Public Schools"



What Does it Mean for Pesticide Applicators?

By Wendy Anderson, Pest Management Education Coordinator

Act 125, also known as *"An Act Relating to Toxic Materials and Indoor Air Quality in Vermont Public Schools"*, was passed by the 2000 Vermont Legislative Session.

The basic intent of the Act is for the Vermont Departments of Health and Education, with assistance from other state agencies, to encourage schools to develop programs that will enable them to identify and eliminate potentially hazardous materials from their schools, isolate those hazardous materials that cannot be eliminated, and adequately ventilate school buildings to exhaust any pollutants and contaminants.

So how will this affect you as a pesticide applicator? Well, as part of the effort to reduce the amount of toxic materials in schools, schools are going to be encouraged to implement an Integrated Pest Management (IPM) program to minimize the risk of exposure to pesticides in the school building and on school grounds.

Note that schools in Vermont are being "encouraged" to adopt an IPM approach; they are not being mandated as are schools in Massachusetts and a few other states in the country. However, those schools that do choose to adopt the IPM approach will be looking for pest control operators and landscaping companies that can provide them with the IPM services they are looking for. So the best advice we can give you is this - you'd better be ready or you may miss out on the opportunity to do business with these schools.



IPM DEFINED

Integrated Pest Management for pests on school grounds is a process for achieving long-term, environmentally sound pest suppression through the use of a wide variety of technological and management practices. Control strategies in an IPM program extend beyond the application of pesticides to include structural and procedural modifications that reduce the food, water, harborage and access used by pests.

IPM practitioners view pest problems as symptoms of other conditions since many problems can be solved with non-chemical methods such as structural repairs or changing human behavior. Where chemicals are necessary, a preference is given to materials and methods which maximize public safety and reduce environmental risk.

WHAT SERVICES WILL SCHOOLS BE LOOKING FOR?

Schools that want to adopt an IPM approach to pest management will be expecting pest control operators and landscapers to provide the following services:

➤ **Inspection and evaluation of the pest problem.** The first step in any IPM program is a thorough inspection of the school premises, both indoors and outdoors. It is impossible to design an effective pest management program unless you know what you have, where it is, how it got there, and what conditions are allowing it to survive. Specifically, a thorough inspection will allow you to:

- ✓ Identify the pest;
- ✓ Determine the location and extent of the infestation;
- ✓ Note damage to the structure or commodities;
- ✓ Determine conditions conducive to the infestation;
- ✓ Identify harborage areas;
- ✓ Identify deficiencies in sanitation; and,
- ✓ Identify avenues of possible entry.

➤ **Recommendations for structural repairs and modifications (indoor pests) and recommendations for changes in horticultural practices (outdoor pests).**

Indoor Pests: Meet with the maintenance staff or IPM Coordinator to discuss repairs or changes that need to be made to eliminate pest access to buildings. Cracks in foundations and around doors and windows should be filled and holes in screens should be repaired. Doors should be fitted with self-closing mechanisms and weather stripping.

Vermont Act 125, contd.

Dumpsters and other trash receptacles should be located a safe distance away from areas used by students and staff and should be cleaned regularly. General sanitation indoors and out is extremely important and may require that food be eaten and stored only in designated areas. All sources of moisture should be eliminated.

Outdoor Pests: Planting techniques, irrigation, fertilization, pruning, and mowing can all affect how well plants grow. A great many of the problems encountered in school landscapes are attributable to using the *wrong plants and/or failing to give them proper care*. Healthy plants are often likely to have fewer insect, mite, and disease problems. Work with the person responsible for the school landscaping and discuss the care required by the particular plants at the school.

⇒ **Suggestions to change practices or behaviors in order to discourage pest presence.** Information that will help change people's behaviors – particularly how they dispose of wastes and store food -- plays an invaluable part in managing pests like cockroaches, ants, flies, yellowjackets, and rodents.

⇒ **Selection and use of lowest risk control measures to solve the pest problem.** If all appropriate non-chemical pest control strategies such as sanitation, exclusion, and cultural practices have been implemented and monitoring indicates a chemical treatment is still needed, the IPM practitioner should:

- ✓ Select the least hazardous methods and materials effective for control of targeted pests. (The school may actually have a list of products acceptable for use.);
- ✓ Use precision targeting of pesticides to areas not contacted or accessible to the children, faculty and staff; and,
- ✓ Apply pesticides only "as needed" to correct verified problems.

⇒ **Evaluation and discussion of results with the customer (School IPM Coordinator, maintenance staff, etc.).** The success of IPM depends on cooperation of many individuals. Pest management is not the sole responsibility of a pest control operator or landscaper. Proper maintenance, housekeeping and sanitation of buildings, and plant health care, are important for successful long term management of indoor and

outdoor pests. School staff, teachers and students must be made aware of whether their efforts have been successful in helping to control the pest problem, and whether they need to implement additional changes.

⇒ **Schools will also probably be looking for IPM practitioners that are willing to make pesticide applications after school hours or on the weekends.**

HOW CAN YOU PREPARE YOURSELF?

Learn all you can about IPM and add IPM tools to the services you offer so you can work with those schools that want to implement an IPM approach to pest control. For more information on IPM and IPM in schools, check out the following resources:



⇒ National School IPM website at <http://schoolipm.ifas.ufl.edu/tp.htm>. This website was created with grant support from the U.S. Environmental Protection Agency and has a wonderful collection of technical articles on the IPM approach to controlling many common pests found in schools.

⇒ "IPM Standards for Schools: A Program for Reducing Pest and Pesticide Risks in Schools and Other Sensitive Environments" at <http://www.ipminstitute.org/school.htm>. You can download this 128 page document that lists more than 700 IPM practices for use in school buildings and on school grounds.

⇒ Wisconsin's School Integrated Pest Management Manual at <http://ipcm.wisc.edu/programs/school/>. A very practical manual outlining IPM strategies for the control of common pests found in school buildings and on school grounds.

IPM TIP

The single best IPM tool to carry is a magnifier! A magnifier is an important part of visual inspection, and lets you see the small details that are helpful in the identification of weeds and insect pests. A 10X magnifier is a good starting point for most pest scouting.

Vermont Pesticide and Groundwater Monitoring Program Helping to Keep Vermont's Groundwater Supplies Clean

By Jeff Comstock, Soil Scientist, Vermont Department of Agriculture

The Pesticide and Groundwater Monitoring Program is now working on the 15th year of sampling groundwater for farmers and their neighbors with drinking water supplies adjacent to agricultural land. The program has sampled a total of 1,115 private water supplies in 172 towns representing each of Vermont's fourteen counties. The purpose of the program is to collect water samples from drinking water wells near agricultural lands throughout the state to evaluate whether or not pesticides and other agricultural chemicals are contaminating Vermont's groundwater. The products most often tested for are *Atrazine*, *Bladex*, *Dual*, *Frontier*, *Harness*, *Lasso*, *Princep*, *Prowl* and *Surpass*— the herbicides most commonly used in Vermont.

The active ingredient in each of these products has a standard for what is an acceptable level of detection in drinking water (listed below). These standards are set by the Environmental Protection Agency (EPA) and the State Health Department. Each standard is based on a lifetime exposure from drinking two (2) quarts of water each day for seventy (70) years.

Drinking Water Standards

Alachlor (Lasso)	2 ppb	Pendimethalin (Prowl)	280 ppb	Cyanazine (Bladex)	1 ppb
Atrazine	3 ppb	Metolachlor (Dual)	70 ppb	Simazine (Princep)	4 ppb
Acetochlor (Harness/Surpass)	2 ppb	Dimethenamid (Frontier)	2 ppb	Nitrate-N	10 ppm

(ppm = parts per million; ppb = parts per billion)

The Monitoring Program is funded through product registration fees paid by companies that sell and distribute pesticides in Vermont. The results of the Monitoring Program are used to evaluate whether agricultural chemicals such as pesticides, fertilizers or manure are leaching to groundwater or lost to surface run-off. This information has become an important part of the training curriculum for the Pesticide Applicator Program and Agricultural Non-Point Source Reduction Program. In addition, every well owner that participates in the program is provided with a written copy of the results for their own well. Sharing this information with farmers, agricultural dealers, landowners and other conservation organizations helps to improve agricultural practices, protect groundwater by raising public awareness and provide for clean drinking water for private well owners in Vermont.

Summary of HERBICIDE Well Detections for 1986 - 2000

HERBICIDE RESULTS	Total # Wells	# Wells Ever Positive for Herbicide	# Wells Ever Above Standard	# Wells Positive at Present	# Wells Above Standard at Present
Corn Survey	704	66	7	28	0
Fruit & Vegetable Survey	44	21	0	10	0
Non-Point Source Survey	139	8	0	4	0
Christmas Tree Survey	36	2	0	1	0
Turf Survey	14	1	0	0	0
Total #	937	98	7	45	0

Vermont Pesticide and Groundwater Monitoring Program, contd.

Summary of NITRATE Well Detections for 1986 - 2000

NITRATE RESULTS	Total # Wells	# Wells Ever Positive for Nitrate	# Wells Ever Above Standard	# Wells Positive at Present	# Wells Above Standard at Present
Corn Survey	704	398	103	255	50
Fruit & Vegetable Survey	44	28	10	22	2
Non-Point Source Survey	139	62	8	52	2
Christmas Tree Survey	36	16	0	8	0
Turf Survey	14	5	0	2	0
Total	937	509	121	339	54

Lessons Learned

The Monitoring Program was founded to investigate the quality of drinking water on Vermont farms because of concern for the potential for groundwater contamination caused by pesticides. The results of the Monitoring Program show that detections of agricultural pesticides in groundwater are uncommon in Vermont. Although pesticides are detected in groundwater, the encouraging results are that the number of detections are limited, the level of contamination for new detections has decreased over time, that violations of the drinking water standard are extremely rare and that the majority of sites with pesticide detections respond well to clean up efforts and do not remain positive.

The most significant result of the Monitoring Program has been the realization that nitrate in groundwater is far more common than anticipated and also deserves attention as a water quality priority. The presence of nitrate in groundwater, possibly originating from fertilizers, manure, or leaking septic systems, has brought about the merger of program priorities and activities between the Pesticide Program and the Agricultural Non-Point Source Control Program. The Department of Agriculture now approaches these issues as a coordinated Agricultural Water Quality Program.

The nitrate data presented above indicate that progress has been made to reduce the number of farm wells with elevated nitrate detections. The improvement in the number of wells that exceeded the drinking water standard for nitrate is particularly evident during the past biennium. The results for the most recent biennium also show a lower percentage of wells with no nitrate detections. This result is due to increased focus on re-sampling of well locations with previous detections. And finally, a comparison of the current data, for all sampling conducted between 1986 and 2000, with that of the biennium that ended in 1998, does show continued statewide decrease in the level and frequency of nitrate detections.

Technical Assistance & Remediation

As indicated by the data for herbicide and nitrate detections, a comparison of the historical and present day detections shows the Monitoring Program continues to achieve a reduction in both the frequency and concentrations of detections for agricultural chemicals in groundwater throughout the state. In working with the owners of wells that do have detections of bacteria, fertilizers, manure or herbicide, the most common source of water quality problems continues to be that of poor well construction. Therefore, in addition to the ongoing re-sampling schedule, a major education and technical assistance effort for the future will be the development and promotion of well construction and maintenance standards for the accepted agricultural practices program.

News From the Vermont Department of Agriculture, Plant Industry Division

Send in Out-of-State Recertification Credits!

If you have attended any pesticide training sessions outside of the state of Vermont, make sure you send in copies of your signed attendance form. The Pesticide Applicator Database will be closed out the first week in December, so we need your credits by the end of November. Send them to: Wendy Anderson, Vermont Department of Agriculture, 116 State Street, Montpelier, VT 05620.

Pesticide Residues in Those Clippings?



Washington State University has reported damage to vegetable gardens and crops from compost derived from clippings of grass and brush treated with persistent pesticides. If your applications include products with the active ingredients **picloram** (Tordon) or **clopyralid** (Confront, Lontrel, Stinger), please advise your customers not to use the clippings for mulch or compost for at least one year. Compost containing residues of picloram or clopyralid has caused damage to vegetable gardens and crops, especially beans, peas, tomatoes, potatoes, peppers, and alfalfa.

Labels for both picloram and clopyralid products include warning statements that mulch or compost made from treated grass or treated crops should not be used in the same growing season in which the herbicide was applied. Instruct your customers to mulch their grass clippings back into the turf, and not to offer them to community recycling/compost programs.

For more information regarding this situation, see <http://www.tricity.wsu.edu/aenews/Oct00AENews/Oct00AENews.htm#anchor5301120>.

(Source: Pennsylvania Pesticide Highlights, August 2001)

Questions on Pesticides? Need to Know How Many Recertification Credits You Have? Check Our Databases

Registered Pesticides: Now, applicators can access the Department's database of currently registered pesticides. Information in the database has been compiled solely from pesticide registration data submitted by companies who wish their products to be sold in the state of Vermont, combined with data from the Environmental Protection Agency (EPA) with regard to ingredients, pests and sites.

You can search the database according to the following criteria:



- pest to be controlled
- sites that can be treated with the product
- pesticide type
- formulation type
- active ingredient
- signal word
- company name
- product name
- product EPA registration number

Information provided includes the classification of the product. You can even view the EPA-approved product label for environmental hazards, personal protective equipment, methods of application, and more. It is definitely a resource worth becoming familiar with!

You can access the registered pesticides database at the following web address:
<http://www.kellysolutions.com/VT/pesticideindex.htm>.

Pesticide Recertification Credits: Now, commercial, non-commercial and government pesticide applicators can check up on how many recertification credits you have and when your exams are due to expire. Access the applicator database at the following web address:
<http://www.kellysolutions.com/VT/Applicators/index.htm>.



Home Study Quiz - November 2001

Tips for Storing Pesticides Safely

The following set of questions pertains to the *Tips for Storing Pesticides Safely* article on page 6-7. Mail the completed quiz back to the Department to receive one pesticide recertification credit. Include extra sheets of paper for answers if needed.

Remember to fill out the form on the back of the quiz!

1. Why should you wear protective clothing while you store your pesticides, containers and equipment?
2. Why is the storage area not a good place to keep your lunch, tobacco, and street clothes while you are on the job?
3. Why is it so important to prevent extremes of temperature from occurring inside a storage area?
4. What should you do when you discover that one of your pesticide containers is corroding?
5. Why should all pesticides be stored in their original containers whenever possible?
6. Do materials that are used to clean up a pesticide spill need to be treated as pesticide waste?
7. Why should different types of pesticides be stored separately?
8. Why is it important to control the levels of moisture inside a storage area?
9. List **two** reasons why you should keep an up-to-date inventory of pesticides you have in storage.
10. List **three** ways that you can make pesticides and application equipment inaccessible to unauthorized persons, livestock and wildlife.

Fill out the following form and send it, and the answer sheet, to the Department of Agriculture to receive one pesticide applicator recertification credit.

Name : _____

Certificate Number: _____

Address: _____

Company/Farm: _____

Pesticide Applicator Report

Vermont Department of Agriculture, Food and Markets
Plant Industry Division
116 State Street, Drawer 20
Montpelier, VT 05620-2901

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