



Pesticide Applicator Report



a Publication of the Vermont Agency of Agriculture, Food & Markets
for Vermont's Pesticide Applicators

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► News from the Agency of Agriculture, Food & Markets

Pesticide Use at or Near Schools

Pesticide applications on or near school grounds can be controversial, to say the least. Although Vermont Law does not require that schools implement an IPM (Integrated Pest Management) program, some schools do have IPM programs in place or the school district may have a written pesticide protocol. It is important for an applicator operating on school grounds to be aware that there may be limitations on what they can use, when they can use it, and where it can be used. Please note that commercial applicators need to be certified to apply any class pesticide on school grounds, and school staff need to be certified to apply class A and B pesticides on school grounds, although Class A (restricted use) pesticides should not even be considered for use at a school for obvious reasons.



There is certainly a "gray area" when it comes to the application of pesticides near schools but not on school property. Applicators need to pay particular attention when near a school, and especially when the school children are outside of the building, either loading or unloading busses or at recess. Remember that you, as an applicator, may have a higher tolerance level than school staff, children, and especially their parents when it comes to perceived risk from pesticide exposure. *We encourage all applicators to err on the side of extreme caution and only do pesticide applications within sight of a school or daycare facility in the evening after the children have left, or on weekends, holidays, or during school vacation when there are no children present.*

Continued on following page →

Thirty-three states have enacted some form of restriction on the use of pesticides in, around or near schools ranging from general restrictions on their use, parental notification and posting requirements, to an all-out ban. There was an Act introduced in the Vermont Legislature back in 2007 that would restrict pesticide use in and around schools and day-care facilities, but it never made it out of committee. Applicators must remember to think more about the results of their actions and how they will affect the local community, or such legislation may get further along in the future.

OK, I will stop preaching now...
–Matt Wood, Pesticide Cert. & Training Coordinator
VT Agency of Agriculture, Food & Markets



Pesticide Storage

This article is from the Cornell Cooperative Extension Pest Management Education Program website: <http://pmep.cce.cornell.edu/index.html>

No job is really finished until the pesticides, containers, and your equipment have been put away properly. Get into the habit of storing all of your materials safely before you clean up and go home, or on to the next job. While you are cleaning up and putting away the pesticides, containers, and equipment you should wear all the personal protective equipment you used on the job. Consider wearing gloves and other protective equipment, even if they weren't recommended on the label. Spills and accidental contamination often occur during storage procedures.

Goals of This Article

- Learn how to choose and arrange a storage area for pesticides.
- Understand the importance of handling, storing, and disposing of pesticides properly.
- Learn what to do in case of a pesticide spill.

The Storage Building

Most applicators use existing buildings or areas within existing buildings for pesticide storage. However, if you use large amounts of pesticides and/or equipment, it would be best to build a special storage building just for your pesticide needs. If possible, use a separate building for your pesticide storage. If you do not have a separate building, choose a wing or corner on the first floor of a building.

Before you build a new structure, you should look into suggestions and plans for pesticide storage put out by state colleges, chemical companies, county extension agents, etc. When you are setting up any new storage area be sure to check federal, state, and local regulations on storage areas.

Choosing the Best Site. Whether you choose a site to build a new storage area or use existing buildings, you need to consider several points. The site should be in an area where flooding is unlikely. It should be downwind and downhill from sensitive areas such as houses, ponds, and play areas. There should be no chance that runoff or drainage from the site could contaminate surface or groundwater. Sites should be selected so that the soil, geologic, and hydrologic characteristics will not lead to contamination of any water systems through runoff or percolation.

Setting Up the Storage Area. Pesticides should be stored in a cool, dry, airy room or building which is fireproof. Fans are an important feature of any pesticide storage building. A properly installed ventilation system should have a switch outside, so that the fan can be turned on before anyone enters the facility. The storage area should be fenced in or at least able to be locked tightly. Weatherproof warning signs should be hung over every door and window. Pesticides which may be in tank rinsings, spills, seepage from the storage, and heavy runoff from fire fighting or floods must be controlled. Otherwise, they may contaminate surface or groundwater. Dikes, collecting pools, and washing slabs with sumps will provide a proper drainage system and may be required. All the collected runoff water should be treated as a surplus pesticide and disposed of properly. A good supply of detergent or soap, hand cleanser, and water is a must in the storage area. It's convenient for filling tanks, cleaning off equipment, and for you and your

help to clean up with. It's also quick first aid in a poisoning emergency. Adsorptive clay, activated charcoal, vermiculite, pet litter, or sawdust should be readily available at the storage site to soak up spills and leaks. Hydrated lime and high pH commercial detergent should also be on hand to neutralize the pesticide in an emergency. A shovel, broom, dust pan, and a fire extinguisher are other "musts" in any storage area.

Arranging Your Storage Area

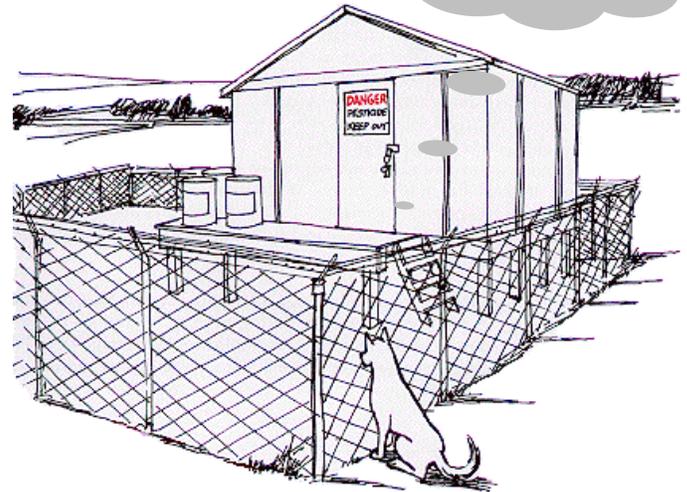
A pesticide storage area, whether it is a room or a whole building, should be used **only** for pesticides and pesticide equipment. Never store or use food, drinks, silverware, tobacco products, or personal protective clothing in the storage or loading area. Livestock feed, living plants, and seeds should never be stored with or near pesticides.

Avoid Hot Places. Glass and metal containers of liquid pesticides should be stored where they are not in the sun or near other sources of heat, such as steam pipes, furnaces, etc. Store pesticides at temperatures above freezing or as directed on the label. Do not store liquid pesticide in a place where the temperature can fall below 40 degrees Fahrenheit or go above 100 degrees Fahrenheit. Protect sensitive pesticides from freezing. Freezing will destroy the usefulness of some pesticide products. Freezing may also cause liquid pesticides to break their containers, resulting in leakage. Heat will cause the liquid to expand so that the contents will be under pressure. Therefore, when the container is opened the pesticide could splash out on you. No pesticides should be allowed to become overheated. Some formulations will catch on fire if they get too hot, while others lose their strength and break down when they are exposed to heat. Still others will vaporize and become a health hazard.

Special Areas. Herbicides should be stored in a special place apart from other pesticides, fertilizers, and seeds or bulbs. Some herbicides can vaporize and get into other pesticides nearby. When the contaminated pesticide is used, the herbicide vapors in it could injure or kill crops and sensitive plants. All highly toxic pesticides should be stored together in a special area. Then you and your helper working in that area can take special precautions to keep from being exposed. Also, you are less likely to use a highly toxic pesticide by

accident. A special "disposal" area should be used for surplus pesticides and their containers being held for disposal. They should be grouped together and plainly labeled according to how you plan to dispose of them. This will help prevent mix-ups resulting in improper disposal and accidental reuse.

Shouldn't those containers be inside?



Handling Pesticide Containers

Pesticide containers should be stored with the label in plain sight. They should be stored up off the floor, especially if they can be damaged by dampness. Rigid containers should always be set in an upright position so they cannot spill. All containers should be placed in orderly rows with enough room to allow you and your helpers to walk between them.

Damaged Containers. All pesticide containers should be checked often for corrosion, leaks, loose caps, or bungs. You must correct these dangerous conditions immediately. Pesticides should be stored in their original container with the label attached. If containers are damaged, however, you should put the pesticide in a sound and suitable larger container which can be sealed and labeled. Oftentimes the label from the damaged container can be firmly fastened to the new container. Paper drums or plastic bags placed within another container are handy for this purpose. Unlabeled pesticides are dangerous since you don't know what they are or how to use them. They should be set aside and held for disposal. Partly empty pesticide containers should be resealed and

returned to storage. Opened containers of chlorates (often used as weed killers) should not be stored. They can burst into flames at any time.

Improper Containers. Pesticides should be stored in their original containers, with the label plainly visible and the seal cap securely closed. Containers should be dated when purchased. Outdated material should be discarded. To reduce the chances for improper storage, a complete inventory should be maintained indicating the amount, identity, and date of material purchased. Pesticides should never be stored in soda bottles, fruit jars, milk cartons, etc. Storing pesticides in improper containers such as these is a common cause of pesticide poisoning. Never dump a little of your tank mix in a jar and give it to someone.

Pesticide Equipment Storage

All pesticide application equipment should be stored in a special area. The equipment could be contaminated with pesticides. All items used for handling pesticides at the storage site, which might be used for other purposes, should be labeled "contaminated with pesticides" and should not be removed from the site unless thoroughly decontaminated. Never let children or uninformed people play on or around your equipment. They could pick up a harmful dose of pesticide. Do not store pesticides next to food, feed, or other articles intended for consumption by humans or animals. Always wash your equipment carefully before you store it. Thoroughly rinse off the outside while it is parked in the special wash area. Do not allow rinse water to get on the ground and into streams, ponds, or other sensitive areas. Collect it and hold for proper disposal. All movable pesticide equipment should have a sign: "Danger - Pesticides" to warn people to stay away. Delivery trucks, nurse tanks, and other support equipment should also be rinsed thoroughly and stored. Materials such as adsorptive clay, hydrated lime, and high pH commercial detergent should be available for use as appropriate emergency cleanup agents for spills or leaks. Keep a shovel, broom, dust pan, absorbent material, container for disposal, and sprinkler can for decontamination and cleanup of spilled materials.



Safety Measures

A little care and common sense can help prevent many accidents and emergencies in the storage area. You and your helpers should know the basic safety rules and follow them. You should also know what to do in case of an emergency. Make a list of safety procedures and post it in the storage area. Be sure that everyone follows these rules.

Protect Yourself and Others:

- Follow all safety precautions specified on the label and any accompanying label information.
- Inspect all containers of pesticides for leaks before handling.
- Do not allow children, pets, or uninformed persons into the storage area.
- Wear gloves when you are handling containers of pesticide concentrates. Use more personal protective equipment if the label says to.
- Do not put your fingers in your mouth or rub your eyes while you are working.
- Do not store or use tobacco, food, or drinks in areas where pesticides are present.
- Wash your hands carefully before eating, drinking, smoking, or using the toilet. Wash them as soon as you are finished handling the pesticides.
- Do not handle pesticide containers roughly; they are not meant to be thrown, dropped, or abused.

Spills. In spite of all safety precautions, accidents can happen. If a pesticide spills in your storage area, quick action must be taken. If the pesticide gets on anyone, wash it off immediately. Have them get out of the area, wash thoroughly, change clothes, and see a doctor if necessary. Clear the storage area except for a small clean-up crew. Be sure the crew wears the proper personal protective equipment. Notify the authorities by contacting the Vermont Agency of Agriculture or Vermont Department of Public Safety.

If the spill is a liquid, throw activated charcoal, adsorptive clay, vermiculite, pet litter, or sawdust over the entire spill. Use enough to soak up most of the liquid. Then sweep or shovel it into a large drum. If the spill is a dust, granular, or powder, sweep or shovel it directly into a large drum. Sweeping compound can be useful when picking up spills of dry pesticides. Next cover the spill area

with a decontamination agent recommended for that particular pesticide. The manufacturer or your supplier may have to be consulted. Hydrated lime and high pH commercial detergents are often recommended. Repeat this procedure several times. Rinse the whole area with plenty of water to wash away any remaining poison. Collect the rinse water and hold it for proper disposal. Check your storage area carefully to see if any other pesticides were contaminated by the spill. If so, do not take a chance on using them, dispose of them as well. When you are all finished, seal the drum tightly and store for disposal.

Fire. Inform your local fire department, hospital, public health officials, and police of the location of your pesticide storage building. Warn them of possible hazards and of proper protective clothing to wear in case of fire. Suggest that they wear air-supplied respirators and chemical resistant clothing. They should avoid breathing or contacting the smoke or fumes at all times. If they do contact the smoke and fumes, they should get out of the area fast and wash off. Post signs around the area and, if possible, give fire department officials a floor plan of the storage area. Keep all people without protective gear away from the fire. Anyone who might contact the smoke, fumes, or contaminated surfaces must be removed from the area. Because it could be poisonous, all water used in fire fighting should be contained in the storage area drainage system for safe disposal.

Monitoring System. If you store large quantities of pesticides, consider setting up an environmental monitoring system. Arrange to have samples taken from water, wildlife, and plants near the storage area. The samples should be assessed to be sure that no pesticides are getting out into the environment.

Storage Facility Check List

- Separated from offices, workshops, livestock areas
- Separated from wells, streams, lakes, ponds, wildlife
- Separated from food and feed
- Fire resistant building materials
- Impermeable flooring
- Liquid spill containment (berms, 25% of liquid storage)
- Anti-spark electrical components

- Heating system (maintain above 32 degrees F)
- Ventilation system with an outside switch (to vent vapors and maintain at less than 95 degrees F)
- Locked doors
- Fenced
- Warning signs posted
- Racks for off floor storage
- Emergency eyewash and shower immediately available
- Routine wash-up facilities near by
- Spill kit and fire extinguishers readily available
- Personal protective equipment available
- First aid kit
- Prepared emergency response plan on file
- Pesticide inventory on file

Make it a habit! Store your pesticides and equipment properly before you clean up and go.

Vermont's Pesticide Storage Requirements

Taken directly from the *Vermont Regulations for Control of Pesticides:*

Section XIII Part 2. Storage: Standards Applicable To Pesticide Storage, Mixing and Loading Facilities.

(1) During the use or storage of pesticides, commercial and private applicators shall not leave pesticides or pesticide containers in any area which is readily accessible to unauthorized persons, livestock or wildlife.

(2) Labeling of storage containers.

(a) In addition to federal regulatory requirements concerning the labeling of pesticide storage containers, legible labels shall be maintained on all bulk storage containers at all times.

[Definition of **Bulk pesticide:** liquid pesticide in a container larger than 210 gallons (795 liters) or dry pesticide in undivided quantities greater than 100 pounds (45 kilograms). It includes mini-bulk pesticide containers, except as otherwise specified.]

(3) Storage of dry pesticide in bulk quantity.

(a) Except during loading and unloading, stored dry bulk pesticide shall be covered by a roof or tarpaulin which will keep precipitation off the pesticides. Dry bulk pesticide stored outdoors shall be kept in storage

containers. Storage containers shall be placed on pallets or on a raised concrete platform. Storage facilities shall be secured against entry by unauthorized persons, livestock or wildlife.

(4)Storage containers and appurtenances.
[def. **Appurtenance:** all valves, pumps, fittings, pipes, hoses, metering devices, mixing containers, and dispensing devices which are connected to a storage container, or which are used to transfer liquid pesticide or pesticide rinsate into or out of a storage container.]

(a)General requirements. Storage containers and appurtenances shall be constructed, installed and maintained so as to prevent the discharge of liquid bulk pesticide. Storage containers and appurtenances shall be constructed of materials which are resistant to corrosion, puncture or cracking. Materials used in the construction or repair of storage containers and appurtenances shall meet or exceed the manufacturer's recommendations and may not be of a type which react chemically or electrolytically with stored bulk pesticide in a way which may weaken the storage container or appurtenance, create a risk of discharge or adulterate the pesticide. Materials used for valves, fittings and repairs on metal containers shall be compatible with the metals used in the construction of the storage container, so that the combination of metals does not cause or increase corrosion which may weaken the storage container or its appurtenances, or create a risk of discharge. Storage containers and appurtenances shall be designed and constructed to handle all operating stresses, taking into account static head, pressure buildup from pumps and compressors and any other mechanical stresses to which the storage containers and appurtenances may be subject in the foreseeable course of operation.

(b)Appurtenances. Every storage container connection, except a safety relief connection, shall be equipped with a shut-off valve located on the storage container or at a distance from the storage container dictated by standard engineering practices. Valves shall be secured to protect against vandalism or accidental valve openings which may result in a discharge. Pipes and fittings shall be adequately supported to prevent sagging and possible breakage due to gravity and other forces which may be encountered in the ordinary course of operations.

(c)Vents. Any air tight storage container used for liquid bulk pesticide shall be equipped with a pressure relief vent which opens and closes within the

designed pressure limits of the container, so as to relieve excess pressure, prevent evaporative losses and prevent the entry of precipitation into the container. All other storage containers used for liquid bulk pesticide shall be equipped with a cover or closure which will relieve excess pressure, prevent evaporative losses and prevent the entry of precipitation.

(d)Liquid level gauging devices. Every storage container shall be equipped with a liquid level gauging device by which the level of liquid in the storage container can be readily and safely determined. A liquid level gauging device is not required if the level of liquid in a storage container can be readily and reliably measured by other means. **EXTERNAL SIGHT GLASS GAUGES ARE PROHIBITED.**

(e)Security. Outdoor storage containers and containment facilities shall be located within a permanent fenced area or equivalent security system approved by the Commissioner that is designed reasonably to prevent access by unauthorized persons and to provide reasonable protection against access by livestock or wildlife. Appurtenances shall be fenced or otherwise secured to provide reasonable protection against vandalism or unauthorized access which may result in a discharge. Valves on storage containers shall be locked or otherwise secured except when persons responsible for facility security are present at the facility. Valves on rail cars, nurse tanks and other mobile pesticide containers parked overnight at a storage facility shall be locked or secured except when persons responsible for facility security are present at the facility.

(f)Filling. Storage containers may not be filled to more than 95 percent of rated capacity unless the storage container construction or location provides for constant temperature control.

Now you really deserve some credit! See page 9 for the quiz.

Secondary Containment Facility Inspections in 2009

If you have bulk pesticide storage (see def. of "bulk pesticides" on page 5) with secondary containment at your facility (see secondary containment requirements outlined in the regulations), we will be inspecting for adequate sizing and record keeping sometime this year.

► News from UVM Extension

Budget Update from UVM Extension

UVM Extension as well as many other organizations has been busy over the past several months looking at and planning for budget cut backs. The UVM Extension budget was reduced by about \$280,000 in this current fiscal year as a result of a state budget rescission to UVM. Several steps were taken to reduce our expenses in 2009 (reduced travel, capital expenses, etc.) and closing two open faculty positions. To balance the base budget in 2010 we also notified three individuals that their work hours would be reduced beginning July 1 and a half-time position would be eliminated. This new reduced base budget is the basis for funding UVM Extension programs for the foreseeable future. A smaller base funded budget results in more short-term programs and commitments as one-time funds are used as a means of extending knowledge and support into communities across the state.

Update from UVM Department of Plant and Soil Science

Enrollment in our courses has dramatically increased over the past two years demonstrating the increased visibility and excitement about our curriculum and its pivotal role in food systems. We have 54 students who declared majors in Sustainable Landscape Horticulture and Ecological Agriculture. We offer service courses to majors in Environmental Science, Environmental Studies, Education and Business. This past year, we hired two new Assistant Professors, Yolanda Chen (Agroecology of Specialty Crops) and Josef Görres (Ecological Soil Management). Our graduate program continues to grow with increased extramural funding. We currently have 25 graduate students enrolled in our programs, of which 11 are pursuing doctoral degrees.

We are launching a new two-year summer institute to provide students science-based tools for understanding and applying techniques that are at the heart of sustainable food production. We aim to attract outside audiences that include K-12

teachers, non-traditional students interested in learning production systems, and traditional students moving through their BS in less than 4 years. Summer courses have the advantages of coinciding with the growing season in Vermont, a savings of 15% on tuition, and a student graduating 1 or 2 semesters early. A suite of courses on nutrient management are being offered June 15- July 10, 2009 (http://learn.uvm.edu/igs/food_systems/#agroecology). In summer 2010, we will offer a suite courses on *Management of Pests and Pathogens* and an introduction to ecological agriculture.

The new plant science building, Jeffords Hall, is on schedule for completion in spring 2010. This 83,000 square foot building will house the Departments of Plant and Soil Science and Plant Biology. The first floor will be devoted to public spaces, teaching laboratories, classrooms, and an agricultural and environmental testing lab. The two top floors will contain research laboratories, facilities and offices. Follow the progress at <http://www.uvm.edu/~pss/?Page=pssdeptweb/jeffords.htm>

The History of Pesticides

By Ann Hazelrigg, UVM Extension

Pesticides are chemicals that kill pests and can be categorized by the type of pests they control. Insecticides kill insects, herbicides kill plants we don't want, fungicides kill fungi and rodenticides kill mice. The majority of pesticides (almost 90%) are used throughout the world in agriculture, food storage or shipping.

As long as history has been recorded, people have used 'pesticides' to kill pests. The Sumerians used sulfur to control insects and mites 5,000 years ago. The first reported use of non selective herbicides was in 1200 BC, when Biblical armies "salted and ashed" the fields of the conquered. Democritus, a Greek philosopher, noted the curative effects of applying processing residue from olive oil on plant blights. The Chinese used mercury and arsenic compounds to control body lice and other pests in 900 BC. In 100 BC the Romans applied the plant hellebore to control rats, mice and insects.

In 70 AD, Pliny the Elder included in his "Natural History" a summary of pest control practices taken from Greek literature of the preceding 200-300

years. Most of the materials listed were useless as control agents and were based mainly on superstition and folklore. Plant diseases were often thought to be caused by the “gods” so curing plant diseases was often based on appeasing these gods through sacrifices and other rituals. During the time of Aristotle in 384-322BC, wheat stem rust was recognized as an important and devastating disease in ancient Greece and Rome. This fungus disease causes orange pustules to form on the stems of the plant leading to decreased yields or death. The ancient Romans sacrificed red animals (dogs, foxes and cows) to the rust god, Robigo or Robigus each spring during a festival called Robigalia, in hopes the wheat crop would be spared from the rust. This disease is now reemerging as a major disease problem throughout the world again, but plant pathologists are hoping that new resistant varieties of wheat will be the best line of defense, rather than Robigus!

It was not until the mid 19th century that pests were controlled with chemicals to any degree of success. Pyrethrum, a natural insecticide made from the dried flower heads of chrysanthemum family plants, lime and sulfur combinations, arsenic, sulfur and soaps were the materials found to be most effective between 1800 and 1825. Between 1825 and 1850, quassia (a tropical tree,) phosphorus paste and rotenone, (made from a naturally occurring chemical in the roots and stems of certain plants) were used successfully as pesticides. Also during this time, nicotine was used as an insecticide and mercurous chloride was used as a seed treatment.

In 1865, a new fungus disease was attacking grape vines in France called downy mildew. Professor Millardet was walking through the French



Pierre Marie Alexis Millardet

countryside in 1882 when he noticed several vigorous and healthy grapevines unaffected by the destructive disease. He learned the farmer had been so angered by people stealing his grapes that he had sprayed his plants with a mixture of copper sulfate and lime to discourage the pilfering. Millardet realized this material was very effective in controlling downy mildew and named it “Bordeaux mix” because Bordeaux was the nearest large city. The mixture was found to be very effective against a lot of other plant pathogenic fungi and it rapidly became the first broad spectrum fungicide used in food production. This fungicide is still in use by organic gardeners today for the control of fungal diseases.

With the use of Bordeaux mix, arsenical Paris green and kerosene emulsions as dormant sprays for fruit trees (1867-1868) the scientific use of pesticides had begun. In the 1930’s synthetic organic chemicals made their debut. The beginning of modern pesticide use really started with the creation in 1939 and first use of the insecticide DDT during World War II.

In 1970, a new publication arrived on the scene called *Silent Spring*, by Rachel Carson. The book attracted immediate attention and wound up causing a revolution in public opinion about the indiscriminate use of pesticides. This same year the Environmental Protection Agency (EPA) was created in response to the growing public demand for cleaner water, air and land. Prior to the establishment of the EPA, the federal government was not structured to make a coordinated attack on the pesticides or pollutants that harm human health and degrade the environment. The EPA was assigned the daunting task of repairing the damage already done to the natural environment and establishing new criteria to guide Americans in making a cleaner environment a reality. As a result, data requirements for registering and reregistering pesticides have become much more demanding. Many of the pesticides that were used earlier in the century have been banned due to increased EPA standards for human and environmental health and those that do pass registration should have lower impacts on our health and the health of the environment.

See the quiz on page 11 for some credit...

Home Study Quiz 1 – Pesticide Storage

The following questions refer to the article on pages 2 thru 6. Fill out the information on the back of this completed quiz and mail it to the Vermont Agency of Agriculture to receive **(1) one pesticide recertification credit.**

1. According to this article, "No job is really finished until..."
 - a. you've invoiced the customer.
 - b. the end of the day.
 - c. the pesticides, containers, and your equipment have been put away properly.
 - d. you've had at least 4 beers.

2. Complete the sentence. "When you are setting up any new storage area be sure to check..."

3. What absorptive materials should be readily available at the storage site to soak up spills and leaks? List at least three:

4. T___ F___ It is perfectly OK to store your lunch in the pesticide storage area.

5. What is the ideal temperature range for a pesticide storage area?
 - a. 20 - 120° F
 - b. 0 - 150° F
 - c. -50 - 50° F
 - d. 40 - 100° F

6. T___ F___ Some herbicide vapors can contaminate pesticides or fertilizers when they are stored together, and eventually kill desirable plants when they are used.

7. What should you do if you find a damaged container of pesticide in your storage area?

8. T___ F___ The PPE (Personal Protective Equipment) listed on the label is only intended for use during the application and is not really necessary during the cleanup of a pesticide spill.

9. List three (3) items from the storage facility checklist.

10. Where would you look to find the specific pesticide storage requirements for the state of Vermont?

Fill out the following information and mail the completed quiz to the Vermont Agency of Agriculture to receive one (1) pesticide recertification credit.

Name:		
Certificate #: (required)		Please check: <input type="checkbox"/> Commercial <input type="checkbox"/> Non-Commercial <input type="checkbox"/> Government <input type="checkbox"/> Private
Street Address:		
City/State/Zip		
Company/Farm:		
Signature: (required)		Date:

Mail to:

**Vermont Agency of Agriculture
Attn: Matthew Wood
116 State Street
Montpelier, VT 05620-2901**

Home Study Quiz 2 – The History of Pesticides

The following questions refer to the article on pages 7 and 8. Fill out the information on the back of this completed quiz and mail it to the Vermont Agency of Agriculture to receive **(1) one pesticide recertification credit**.

1. When was the EPA formed?
2. What was the purpose of the EPA?
3. What was the first broad spectrum fungicide?
4. Do we need an Environmental Protection Agency and why?
5. The beginning of modern pesticide use started when and with which insecticide?
6. How was lime sulfur discovered as a useful fungicide?
7. Name three of the several botanical (formulated from plants) pesticides that were used in the 1800's.
8. What is a pesticide and how are they categorized broadly?
9. Who was thought to be the main cause of diseases and famines in the ancient times?
10. What ancient disease is now reemerging throughout the world?

Pesticide Applicator Report
Spring 2009

Vermont Agency of Agriculture, Food & Markets
Agriculture Resource Management & Environmental Stewardship
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Montpelier, VT 05620-2901

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Fill out the following information and mail the completed puzzle to the Vermont Agency of Agriculture to receive one (1) pesticide recertification credit.

Name:		
Certificate #: (required)		Please check: <input type="checkbox"/> Commercial <input type="checkbox"/> Non-Commercial <input type="checkbox"/> Government <input type="checkbox"/> Private
Street Address:		
City/State/Zip		
Company/Farm:		
Signature: (required)	Date:	