

# The Pesticide Applicator Report



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For Vermont's Pesticide Applicators



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## In This Issue:

News from the Agency  
& UVM Extension

[Pesticide Record  
Keeping.....1](#)

[Agency Updates ....4](#)

[State registration of  
Reflex™ on  
pumpkins.....4](#)

[Hot topic:  
mosquitoes.....5](#)

[Mosquito prevention  
tips.....6](#)

[IPM-a practical  
approach to pest  
management.....7](#)

[Contacts.....10](#)

[Home Study Quiz #1  
.....11](#)

[Home Study Quiz#2  
.....13](#)

## Got Records? **Required Pesticide Record Keeping**

*Bethany Creaser, Field Agent*

As one of the Vermont pesticide field agents, part of my job involves checking pesticide records. After doing several pesticide record checks this past spring, I thought it would be helpful to remind certified applicators what records you need to keep to be in compliance with Vermont, and in some cases federal, pesticide regulations.

What you need to record and keep for pesticide use records depends upon what kind of certificate you hold & what class of pesticides you use. To help you figure it out, I have broken this down into sections. Which section(s) apply to you? Just answer these questions:

**Are you a private applicator?** If yes, then please read section 1.

**Are you a commercial, non-commercial, or government applicator?** If yes, then please read section 2. *(cont next page)*



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### **Section 1:**

If you have a private pesticide certificate, you most likely own a farm or work on a farm (greenhouse, nursery, Christmas tree farm, orchard, veggie farm etc...). What pesticide records you need to keep depends upon whether non-family members work on the farm or not.

Family members are spouses, parents, stepparents, children, stepchildren, foster children, brothers, sisters, all in-laws, grandparents, grandchildren, aunts, uncles, nieces, nephews and first cousins.

To help direct you to what records you are required to keep, answer these questions:

- Are non-family members employed at the farm? If the answer is yes, then continue to the next question. *If the answer is no, please read section 1a.*
- Will non-family members be working at the farm performing tasks related to crop production or harvesting within 30 days of a pesticide application? *If the answer is yes, please read section 1b. If the answer is no, please read section 1a.*

### **Section 1a:**

For a private applicator who does *not* employ non-family members or do not have non-family employees working at the farm within 30 days of a pesticide application, the only pesticide records you are required to keep are records for the use of any *Class A (restricted use)* pesticides. The information you need to record is: date of use, EPA Registration Number, name of pesticide used, amount of pesticide used (the formulation, not the dilution), location of use, and pest treated for (weeds, insects etc.). You need to keep these records for 2 years. While the requirement is only to keep records for Class A pesticides, we do recommend you record all pesticides used.

### **Section 1b:**

For a private applicator who does employ non-family members and those employees are

working at the farm within 30 days of a pesticide application, you have to comply with both the Vermont pesticide regulations and the federal Worker Protection Standard (WPS). By complying with the record keeping requirement for the WPS, you will also be compliance with Vermont pesticide record keeping requirements for private applicators.

The WPS requires that you record *any* pesticide application. The information you need to record for those pesticide applications is: date of pesticide use, start and end time of the pesticide application, re-entry interval (REI), EPA Registration Number, location of use, pesticide name, the pesticide active ingredient(s), amount used (formulation, not the dilution), and target pest (weeds, insects etc.). You need to keep these records for a period of 2 years. Please be aware that record keeping are only some of the requirements of the WPS. If you are unaware of what the other requirements are, please see the web link in the 'for more information' section.

### **Section 2**

This section covers which pesticide use records commercial, non-commercial, and government applicators need to keep.

As a **commercial or non-commercial/government** applicator, you are required to keep pesticide use records for ALL pesticides you use. This includes pesticides such as Round Up™ (glyphosate), Preen, weed & feeds, fungicides for mold, or any other product used to kill, control, or repel a pest. The information you need to record is: date of use, EPA Registration Number, name of pesticide used, amount of pesticide used (the formulation, not the dilution), location of use, and reason for use (weeds, insects etc.). You need to keep these records for a period of 2 years. The recorded information will be summed and reported on the annual use report returned with your certificate renewal.

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For **commercial applicators**, you are also required to *provide* information on an invoice to customers at the time of application. This information is: the common or trade name for each pesticide used, the EPA number for each pesticide used, the amount of pesticide used (formulation, not dilution), the pest(s) treated for, and the printed name and signature of the applicator. As the information that is to be left with the customer is very similar to the information you need for pesticide use, it is okay to combine the pesticide use records and customer invoice on one form, as long as all the information is there.

**Have you been hired to apply pesticides for a farm?**

If you answer yes to this question, please read this section. *If the answer is no, please answer the next question.*

If you are hired to apply a pesticide on an agricultural commodity (corn, hay, orchards, vegetables etc.), you will want to be sure to add information to your customer's invoice to comply with the federal Worker Protection Standard (WPS), such as REI and Early Entry PPE, as well as any post application label requirements including days to grazing or harvest. To see what information the farm will need to be in compliance with the recordkeeping portion of the WPS, read section 1b above.

**Have you been hired to apply pesticides to turf or landscapes?**

If you answer yes, please read this section. *If the answer is no, please answer the next question.*

There are three additional requirements. The first additional requirement is, at the time the service is being requested, you shall provide written information to the customer that identifies the proposed pesticides (common or trade name, EPA registration number), the rates being proposed for use, and that safety data sheets (SDS, formerly known as MSDS) are available to the customer, if requested.

The second additional requirement for turf or landscape applications is that at the beginning of the application, a 4" x 5" sturdy, weather

resistant sign be posted at conspicuous points of access to the treated area(s).

The applicator will leave such sign(s) posted with instructions that the customer is to remove the sign after at least 24 hours.

And, lastly, for turf or landscape applications, you are required to leave more information on the customer's invoice. In addition to the information mentioned above (the common or trade name for each pesticide used, the EPA number for each pesticide used, the amount of pesticide used (formulation, not dilution), the pest(s) treated for, and the printed name and signature of the applicator), leave on the invoice: name, address and telephone number of the company providing the service; pesticide applicator's certification number, post application label safety requirements (if applicable); time and location of application; and instructions that signs should remain posted for at least 24 hours.

**Do you manage a golf course?**

*If the answer is yes, please read this section.*

Golf courses must comply with their golf course permit and have additional record keeping requirements. In addition to the record keeping requirements listed above, golf courses need to record: operational records of pest problems encountered; control methods employed and their effectiveness; the type of pesticide used, area of the golf course where applied; a record of rainfall; and a summary of irrigation utilization. These records must be maintained for a period of 5 years.

**For more information**

You can find more information about Vermont pesticide regulations [http://agriculture.vermont.gov/pesticide\\_regulation](http://agriculture.vermont.gov/pesticide_regulation), by calling 802-828-2431, or via email [AGR.Agrichemical@vermont.gov](mailto:AGR.Agrichemical@vermont.gov).

On the federal Worker Protection Standard, please visit <https://www.epa.gov/pesticide-worker-safety>.

Template pesticide use record forms, visit [http://agriculture.vermont.gov/pesticide\\_regulation/applicator\\_dealer\\_resources/applications\\_and\\_forms](http://agriculture.vermont.gov/pesticide_regulation/applicator_dealer_resources/applications_and_forms)

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## Agency Updates

**Fee Bill-** The 2016 Legislature has passed the Agency's fee bill. There are a couple of very important updates to pesticide applicators. Effective July 1, 2016 fees for pesticide applicators & companies will increase. These fees had last been increased in 1999. Each category will now be \$30, with a maximum of \$120 per applicator. Company licenses will now be \$75 per year.

The fee exemption for municipal & state applicators was eliminated. So if you are a state or municipal employee that is a "government applicator" you are no longer exempt from paying certificate fees. The renewal that you receive in November will reflect the new fee.

Additionally, private applicator will now have a \$25 fee for your 5-year certificate. This will take effect as your 5-year certificates are renewed.

**Staff changes:** David Tremblay, a pesticide field agent for more than 20+ years, has accepted the position as the State Apiarist. His vast knowledge of agriculture, pesticides, and bees are a great addition to the apiary program and we look forward to working with him in his new role. Dave's territory, the northwest (Chittenden, Franklin, Grand Isle and parts of Lamoille & Washington counties) are now being covered by Matt Wood, who is based in Williston Field Office (94 Harvest Lane).

*Certification & Training* is now being overseen by our Ag Toxicologist, Anne Macmillan. Anne has worked extensively with the WPS trainings and will now be adding the other pesticide programs too. To schedule exams or questions you can reach her at 802.828.3479 or [anne.macmillan@vermont.gov](mailto:anne.macmillan@vermont.gov)

## Agency issues state registration for Reflex™ for use on pumpkins

On May 23<sup>rd</sup>, 2016 Vermont approved a state registration for Reflex™ (EPA#: 100-993) herbicide for use on pumpkins.

Chemical weed management options in pumpkins are limited. One active ingredient that Vermont growers have been using for weed control, clomazone, has demonstrated tendencies to volatilize and drift off-site. As we have seen several instances of this drift in Vermont, we have been researching alternatives for the pumpkin growers in Vermont. Field agent Doug Johnstone, with the help of a grower and applicator have been conducting research with the active ingredient in Reflex™, fomesafen. In 2015, the agency issued an experimental use permit for a fomesafen product. Based on those results in 2016, we submitted a Special Local Need state registration (SLN) with the EPA. The state-approved label and other information are available on our web site at:

[http://agriculture.vermont.gov/pesticide\\_regulation/pesticide\\_registration](http://agriculture.vermont.gov/pesticide_regulation/pesticide_registration)

### Did you know?



Archived and on-line editions of the Pesticide Applicator Reports are available on the Agency web page under the Pesticide Regulation section on the Training & Recertification page.

<http://agriculture.vermont.gov/>

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## Hot topic: Mosquitoes

This spring we have received an increasing number of inquiries about mosquitoes, from both the public and applicators alike.

Remember, to treat for mosquitoes, you must be certified in category 7B (Mosquito & Biting Fly). The Agency of Agriculture Mosquito Surveillance Program has provided this brief overview of the pesky pest below.



### What's Out There

Most mosquitoes in the northeast do not pose a health hazard, but are instead considered to be nuisance mosquitoes. A small percentage of mosquito species in Vermont are capable of transmitting disease, and many of those do not feed on humans, preferring to bite birds or reptiles. When environmental conditions are right, it is possible for some disease-carrying mosquitoes (called vectors) to transmit disease to other mosquito species (called secondary vectors) that *do* feed on humans and other mammals.

The Vermont Agency of Agriculture's Mosquito Surveillance Program works to detect when this happens and notifies the Vermont Department of Health, who takes appropriate action. The risk for contracting a mosquito-borne illness in Vermont is very low. However, you should still take precautions against being bitten by mosquitoes to protect yourself and your family (see next page).

### Virus Facts

**West Nile virus (WNV)** is a mosquito-borne virus that can cause illness ranging from a mild fever to more serious disease. Most people (70 to 80%) who become infected with WNV do not develop any symptoms. About 1 in 5 people who are infected develop a fever with other symptoms, such as headache, body aches, joint

pains, vomiting, diarrhea, or rash. Most people who have this type of WNV disease recover completely, but fatigue and weakness can last for weeks or months.

**Eastern equine encephalitis (EEE)** is a rare but serious disease, also caused by a virus, that can result in 1 of 2 types of illness, **systemic** or **encephalitic** (involving swelling of the brain). **Systemic** infection has an abrupt onset and is characterized by chills, fever, malaise, and joint and muscle pain. Signs and symptoms of **encephalitis** are fever, headache, irritability, restlessness, drowsiness, anorexia, vomiting, diarrhea, cyanosis, convulsions, and coma. Approximately one third of all people who contract EEE die from the disease.

**Zika virus** is spread through the bites of 2 subtropical and temperate species of mosquito that to date have not been found in Vermont, and through sexual transmission as well. Only 1 in 5 people experience any symptoms at all, the most common of which are mild and include fever, rash, joint pain, and red eyes. Very rarely, neurologic involvement has been seen (Guillain-Barre syndrome). Pregnant women or those planning to become pregnant appear to be at risk for their babies having microcephaly (small skull and brain damage) and possibly other birth defects. It will be difficult to determine how the virus will spread over time, however, Vermont does not appear to be a hospitable environment for the mosquitos that carry the disease.

In 2016, Vermont's Mosquito Surveillance Program will conduct surveillance efforts for the first time focused on the 2 species of mosquitoes believed to transmit the virus. This monitoring will take place in southern Vermont.

If you have questions for the Mosquito Surveillance Program, contact Patti Casey, State Vector Management Coordinator, at (802) 522-6858 or [patti.casey@vermont.gov](mailto:patti.casey@vermont.gov)

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## **What You Can Do to Protect Yourself From Mosquitoes**

### **Around Your Home and Garden**

- Empty birdbaths, wading pools, and plant pots or saucers twice weekly. Put the wading pool inside if it's not being used.
- Empty and cover storage and trash containers to prevent water collection.
- Remove any containers that hold water, like pails, drums, bottles, cans, old tires, even bottle caps.
- Clean rain gutters, drains, ditches, and culverts to remove leaves, trash, or weeds that prevent drainage.
- Inspect outdoor pipes, hoses, and faucets for leaks, and make any needed repairs.
- Anything covered with tarps – be sure the tarp doesn't provide pockets of water for breeding.
- Boats, canoes, kayaks – invert or cover them so they don't catch and hold water, or bring them inside.
- Outdoor toys and gardening tools – same thing.
- Arrange for backyard pool care while you're away on vacation.
- Stock water gardens with goldfish that feed on mosquito larvae.
- Fill soil in ruts or puddles that form in heavy rain.
- Use sand or concrete to fill tree rot holes and hollow tree stumps.
- Reduce vegetation in and around your yard that harbors biting insects – keep the grass cut.
- Trim shrubs and trees that overhang porches and decks.

### **When You Go Outside**

- Cover up with light-colored long pants and long-sleeved shirts.
- Avoid dawn and dusk outdoor activity.
- Use an EPA-approved insect repellent.

For more information, visit [www.CDC.gov](http://www.CDC.gov), [www.Agriculture.Vermont.gov](http://www.Agriculture.Vermont.gov), or [www.HealthVermont.gov](http://www.HealthVermont.gov)

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## IPM – A practical approach to pest management – Ann Hazelrigg

Integrated pest management or IPM, is a pest management approach that can be used for managing any pest, disease or weed. It is basically a decision-making tool, one that combines preventative techniques and cultural controls before using a pesticide. If a pesticide is deemed to be necessary, the least toxic pesticide to humans, beneficial insects and the environment is chosen first. For example, if a home gardener calls me and wants to control apple scab on their crabapples, I would start by suggesting they first purchase scab-resistant cultivars. If they already have a susceptible tree in place, I would recommend raking the leaves of the tree every fall to decrease the overwintering stage of the disease, prune and thin the tree to open it up to light and air so leaves dry quickly, and keep up the vigor of the tree so it can withstand some of the stresses of the disease. Once all those practices are in place, if the disease was still a problem, I would then suggest a fungicide. However, in most home garden or landscape situations, just minimizing the disease through cultural practices is probably enough as these gardeners are not relying on a big crop of crabapples for their income. I have often heard IPM described as a “tool box” filled with several different strategies to limit pests and diseases. This approach works well for any pest or disease situation, whether you are a home gardener with a crabapple disease problem or a pest control operator battling bed bugs.

The IPM concept has been around since the 1920’s, spurred by need for a cost-effective solution for managing boll weevils in cotton, yet the concept didn’t really gain momentum until the 1960’s. Throughout the 1930’s, many new synthetic inexpensive insecticides were developed including organochlorides (DDT,

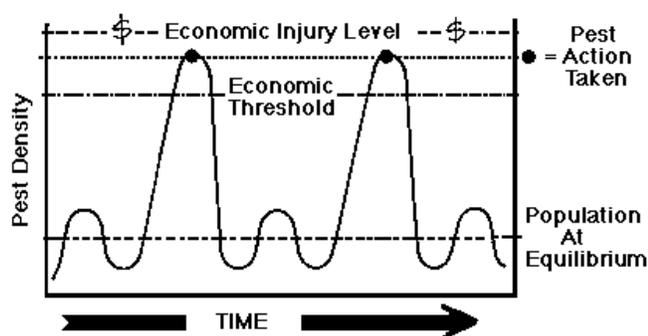
Aldrin and dieldrin) and organophosphate (Parathion, Malathion, Diazinon, etc.) pesticides. These pesticides, although inexpensive and effective, resulted in increased pest resistance and unintended effects on other organisms and the environment. With the publication of the book *Silent Spring*, by Rachel Carson, the idea of pesticide safety was brought to the attention of the public.

The first step in any IPM strategy is to get a positive identification of the pest, disease or weed problem. So many times I get calls from home gardeners wondering which pesticide they should use to control the bright pink felt-like patches on maple leaves or the lichens growing on their trees. Neither of these things are a problem-the bright pink patches on the maples leaves are caused by a small mite (in the spider family) and are of no concern for the tree, and the lichens do not harm the tree, but indicate the tree may be growing slowly or is stressed from another cause. There are plenty of ways to get accurate IDs on pests or diseases in Vermont. Two options are the Master Gardener Helpline (1-800-239-2230) if you are a home gardener or the Plant Diagnostic Clinic (<http://pss.uvm.edu/pd/pdc/>) if you are a commercial grower. There are also lots of great sites on the web with plenty of pictures to help you identify things. Once you identify the pest or disease you are seeing, you can learn the lifecycle of that pest or disease and are able to identify the most vulnerable stage of the pest where you can intervene. Regular inspection of your fields, garden or home, also called ‘scouting’ or ‘monitoring’, is a critical part of IPM. If you identify a problem early, it is much easier to employ other tactics without resorting to a pesticide. Use of traps can often aid when scouting for some insect pests. When traps are used on a regular basis, they can alert you when a key pest shows up in your field, landscape or orchard. Traps help the grower gauge how

severe the pest outbreak is and when to use properly timed insecticide spray to get the most benefit.

When managing a pest in an IPM program, strategies are based on 'action' or 'economic' thresholds. These thresholds are the level the pest population can reach without causing economic loss of a crop. Until the pest reaches this point, no management is necessary. Once at the economic or action threshold, a pesticide action is justified.

### Economic Threshold (Action Threshold)



*Cornell University*

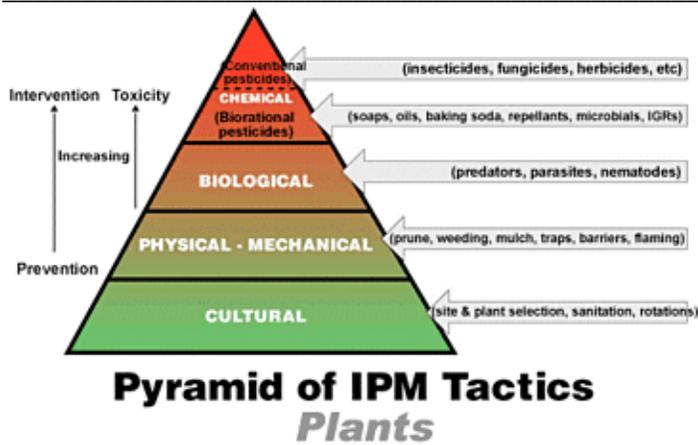
These thresholds will vary depending on the pest or crop/site situation. If you are a commercial grower, you will have a different threshold for a pest compared with the action threshold for the same pest if you are a home gardener. If you are running a hospital, one roach would meet the action threshold. However, given the buildings where I worked as a graduate student, apparently one cockroach was not even close to any action threshold! Economic thresholds have been developed and established through years of research for many pests and crops and provide a great tool for many commercial growers.

The reasons for practicing IPM are many and can include; slowing the buildup of pest resistance, protection of the environment, protection of non-target organisms, maintaining a positive company/farm image and saving money.

There are four basic steps necessary for successful IPM:

1. The use of **preventative** measures to prevent pest buildup. Preventative measures can include cultural controls, physical or mechanical controls, biological controls and finally chemical controls.
2. **Monitoring or scouting** including positive ID of the pest. When pests or diseases are found early, they are much easier to manage. Having a positive ID ensures you know the lifecycle of the pest and the best times to disrupt that lifecycle. ID is important because many problems are not really problems at all, plus there are many insects in the field that are beneficial. Although you know what an adult ladybug beetle looks like, you may not recognize the nymphal stage of this beneficial insect.
3. **Assessment**-When you know you have a pest problem you have to decide if it is worth intervention. Use of economic thresholds, if one is established for the pest you are dealing with, is helpful in assessment.
4. **Action**-When the pest or disease has reached an economic threshold, action needs to be taken to prevent losses. This could involve harvesting a crop early or use of a pesticide.

When trying to decide which preventative pest management method to use, it is helpful to think of the methods as a pyramid. As you move from the bottom of the pyramid to the top, the pest management methods move from prevention to interventions and the toxicity of the practices increase.



**IPM Tactics-start low in the pyramid and work up if necessary**

**Cultural Methods to prevent pest build-up**

- **Sanitation**-This is an important practice that involves removing diseased or pest-infested plant material or managing sources that could encourage pest buildup. This could include the removal of branches infected by fireblight, removal of diseased vegetable plants at the end of the gardening season, use of good sanitation procedures in commercial kitchens to discourage cockroaches or mice, garbage management to discourage flies, rodents or wasps and elimination of materials that could provide food or shelter for pests.
- **Maintenance around the home**-this could include cleaning gutters to prevent water buildup for mosquitos, replacing wood that may be rotting and potentially infested with carpenter ants.
- **Plant Selection and management**-this practice includes choosing plants that are well suited for the growing conditions of the site. We probably can't grow dogwoods in northeast Vermont, so check hardiness maps before selecting plants for your area. It is

best to choose plants from local nurseries. I have noticed many big box stores often sell plants that are not hardy in Vermont. Choose plants that have been bred for resistance to the common pests and diseases that attack them and be sure to manage the plants with the proper watering, fertilizing and soil pH practices required for that plant. Plant a variety of plants in your landscape to prevent buildup of any one pest.

- **Crop rotation**-when rotating crop families, you can avoid buildup of specific pest or diseases of that family.
- **Cultivation**-plowing fields to turn under crop debris. This practice promotes faster breakdown of diseased residue and can expose insects to weather and natural enemies.

**Mechanical/Physical Methods**-These can include use of row covers, caulking cracks and crevices, storing pest food in sealed containers and use of mouse guards on apple trees are all methods of pest exclusion. Removing pest egg masses are also a good physical means of pest control and works well for Colorado potato beetle, gypsy moth and squash bugs.

**Biological Methods**-This is the use of beneficial nematodes, fungi, bacteria, predators, parasites or insect pathogens to decrease pest or disease populations. These beneficial organisms typically attack only the target organism and pose no risk to others.

**Chemical Methods**-These can include organic or conventional pesticides. The key is to always choose the most effective material with the lowest toxicity. On the pesticide label, this would mean choosing those pesticides labeled as 'Caution' before 'Warning' or 'Danger'.

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## Contacts

Field Staff		Phone number	Email address
Bethany Creaser	Field Agent NE	802-793-1628	Bethany.Creaser@vermont.gov
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Montpelier Staff			
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Plant Diagnostic Clinic-UVM			
Ann Hazelrigg	UVM Extension	802-656-0493	Ann.Hazelrigg@uvm.edu



*Dummerston, Vermont -- June*

*Photo credit: Doug Johnstone*

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## Home Study Quiz 1 – Pesticide Recordkeeping

1. **Commercial, non-commercial & government** applicators are required to keep routine records for pesticide use for 2 years for which classes of pesticides:

- a) Class A only
- b) Class C only
- c) Both classes A & B
- d) All classes of pesticides used

2. **Private applicators**, that are not subject to the WPS, are *required* to keep pesticide records for 2 years for which classes of pesticides:

- a) Class A only
- b) Class C only
- c) Both classes A & B
- d) All classes of pesticides used

3. A vineyard operator and private applicator hires seasonal help for fieldwork (mowing, pruning, harvesting) throughout the entire growing and harvesting season. The private applicator only uses Class B pesticides. Provide at least 3 pieces of pesticide recordkeeping information the applicator must keep to be compliant with the WPS:

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4. Which group of people are not considered family members under the WPS?

- a) Stepparents
- b) Grandchildren
- c) Tenants
- d) First cousins

5. Per the label instructions an applicator mixes 24 pints of a pesticide into a 300-gallon tank. Which volume should the applicator record as the amount used? (1 gallon = 8 pints)

- a) 324 gallons
- b) 303 gallons
- c) 24 gallons
- d) 3 gallons

6. A golf course superintendent has additional recording keeping requirements. Name 2 additional pieces of ROUTINE information that the superintendent must record.

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7. How long does the superintendent need to keep these additional records? \_\_\_\_\_ years

8. Are the requirements for routine pesticide recordkeeping satisfied entirely by what is required on a commercial invoice? Why or why not?

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The following information is required. Mail the completed quiz to the Vermont Agency of Agriculture to receive one (1) pesticide recertification credit.

Name:		
Certificate #:		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:		Date:
Email address (optional):		

Mail to:

Vermont Agency of Agriculture, Food & Markets  
**Attn: Anne Macmillan**  
116 State Street  
Montpelier, VT 05620-2901

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## ***Home Study Quiz 2 – IPM- A practical approach ...***

1. How would you define IPM?
2. What are three benefits of using IPM?
3. Name three examples of preventative IPM controls and give examples of each based on the pest/disease pressures you potentially deal with.
4. What is the first step you should always practice when you find a pest or disease that you don't know? Why is this step so important?
5. What are the four IPM methods with an example of each method? Examples can be from your own experience.
6. Why is scouting or monitoring important in IPM?
7. Explain what is meant by action or economic threshold.
8. What is an action threshold or economic threshold of a pest you encounter as a pesticide applicator in your industry? If your pest problem does not have an established threshold, how do you decide when to use a pesticide for a certain pest? (*i.e.*, I am a vegetable grower and I spray for potato leaf hopper when they exceed 1 nymph per leaflet. I grow potatoes and when late blight attacks, that is when I take action and harvest the crop early.)
9. If you select a pesticide for managing a pest or disease, what are the two goals you are striving for in an IPM model?

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# Pesticide Applicator Report

Vermont Agency of Agriculture, Food & Markets  
Agriculture Resource Management Division  
116 State Street  
Montpelier, VT 05620-2901

«Name»

«Address1»

«Address2»

«City», «StateCode» «ZipCode»

Name:		
Certificate #:		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:		Date:
Email address (optional):		